European Commission

Directorate - General XII
Science, Research and Development

UROPEANS, SCIENCE AND TECHNOLOGY

- Public Understanding and Attitudes -

by INRA (Europe) and Report International

June 1993

EUROPEANS, SCIENCE AND TECHNOLOGY

- Public Understanding and Attitudes -

for

THE COMMISSION OF THE EUROPEAN COMMUNITIES

Directorate General XII
Science, Research and Development

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INRA (EUROPE)
European Coordination Office nv/sa
and

REPORT INTERNATIONAL

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FOREWORD

This report presents the results of a major Community-wide opinion survey carried out in 1992 on behalf of the European Commission concerning the Public Understanding of, and attitudes towards, Science and Technology. It was conducted under the supervision of Directorate-General XII - Science, Research and Development - in conjunction with the Eurobarometer Programme of Directorate-General X - Audiovisual Media, Information, Communication and Culture. Eurobarometer is a regular Community-wide survey of opinion on a large number of issues of interest to the European Union.

A sample of over 13,000 Community citizens, representative of the total population of the Member States, were interviewed on subjects of science and science policy with some emphasis on environmental issues.

The report outlines the main results of the survey. It should be seen primarily as a first presentation of the most significant indicators. Further analyses of the data are necessary. It has been the purpose of the Commission from the very outset to make this material available to the scientific community for further in-depth analysis. Therefore, like other Eurobarometer surveys, the raw data are available in machine-readable form at the Zentralarchiv für Empirische Sozialforschung, Köln Universität, Bachener Straße 40 - 5000 Köln-41, Germany (fax: (49) 221.476.94.44) and the Institute for Social Research, University of Michigan, Ann Arbor - Michigan 48104-1248, USA (Fax : (1) 313.763.13.46). The Commission warmly invites researchers to take the opportunity to explore this data.

This study does not 'stand alone'. A first EC study was conducted in the framework of Eurobarometer in the autumn of 1989 and a number of direct comparisons can now be made, in order to trace changes of opinion in the course of time as well as comparisons with data available in individual Member States.

It has been intended to make international comparisons possible, specially with the USA and Japan. Already in the 1989 survey the questionnaire contained elements similar to those in surveys held in the United States, and in individual Member States.

In particular, discussions proved quite fruitful with the National Science Foundation and, in this respect, we are grateful to Jennifer Bond. The Commission looks forward to further international cooperation on the grounds of such both common effort and methodology.

The Commission has been most effectively assisted in the process of designing the questionnaire by researchers from various Member States who have specialist knowledge of such opinion surveys. In this way the aim was not only to ensure the necessary expert input, but also to provide advice from different points of views.

In particular, thanks are due to John Durant and Martin Bauer (Science Museum, London), D.J.H. Midden (Technical University of Eindhoven, Faculty of Philosophy and Social Sciences), Daniel Boy (National Foundation for Political Sciences, Paris), Raphael Pardo (Public University of Navarra, Department of Sociology) and Jon D. Miller (The International Centre for the Advancement of Scientific Literacy, the Chicago Academy of Sciences) for their valuable advice.

The Commission hopes to have contributed with this report to public discussion about the role of Science and Technology in society, as well as to scientific investigation of the subject itself. The report was produced by INRA (EUROPE) together with Report International, Belgium, who should be given credit for the intellectual content.

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CHAPTER 1

1. How well are Europeans informed about science and technology?

Introduction

Chapter one investigates in its first part how well Europeans are informed about science and technology. It starts by looking into their media behaviour in general, the interest they show in a number of (scientific and non-scientific) news themes and the level of information people attribute to themselves about those same news themes.

In its second part, chapter one concentrates on a number of more science-related information sources, the main one being scientific magazines. It also looks into the visiting behaviour people display with regard to a number of (scientific and non-scientific) institutes.

The main findings are summarized below.

· A large majority of EC citizens (70 per cent) watches the news on television on a daily basis. While less popular, the news in daily papers and on the radio still attracts the daily interest of nearly half of the Community population.

·Compared with the results of 1989, over 50% (or very close to it) of the populations of the same six Member States consult all three news sources on a daily basis: Denmark, Germany, Ireland, Luxembourg, the Netherlands and the United Kingdom.

· Scientific news items turn out to be the ones in which EC citizens are most interested. With the exception of "medical discoveries", this interest diminishes as people get older.

· It turns out that Europeans in general are convinced that the level of information they have reached with regard to a number of issues in the news is no match for their interest in these same issues. Particularly where scientific themes are concerned, very few people consider themselves to be very well informed.

· A strong positive link exists, however, between people's level of interest in scientific issues and their self-estimated level of informedness on these issues.

· As to Europeans' media use which is specifically geared toward scientific information, the television again plays a major role. Taking the regular and occasional viewers together, 59% of Europeans do watch television programmes on science and technology. Almost half (45%) read articles on science in newspapers, and only one out of every five (21%) is to be found reading scientific magazines. There seems to be a direct link between the easiness of the medium and the respondents paying attention to science and technology related stories on it.

· In ten of the twelve Member States, over 50% of citizens never read a scientific magazine. Especially in Portugal, this activity is rare.

· On the whole, every information source on science and technology tends to be used more by people with a high level of education and a high income, as well as by opinion leaders.

· With the sole exception of public libraries, frequent visits to the different institutes studied in the last part of chapter 1 are a matter for a small minority of European citizens only. This is most strikingly the case for the two most scientifically significant institutes on the list: science and technology museums and natural history museums. Barely one out of every five Community citizens has visited them in the course of the last twelve months prior to the survey.

· Throughout the first chapter, it becomes apparent that people's level of information on science and technology is closely related to the factors age, income, education and opinion leadership.

1.1. The awareness of the results of science and technology

1.1.1. Attention paid to the media

How well Europeans are informed about the results of science and technology is to a large extent related to the interest they show in the media in general. To chart this interest in detail, Europeans were presented with a question as to the frequency with which they tend to keep up with the televised, broadcast and printed news.

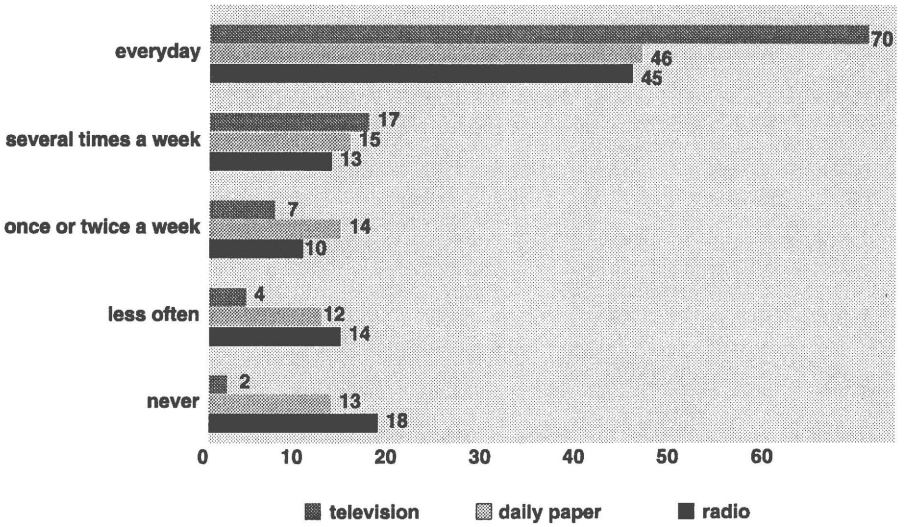
Question: "About how often do you ...
... watch the news on television?"
... read the news in daily papers?"
... listen to the news on the radio?"

Table 1.1: Media use, EC12, 1992, in per cent

answers	TV	daily papers	radio
everyday	70	46	**45**
several times a week	17	15	**13**
once or twice a week	7	14	**10**
less often	4	12	14
never	**2**	12	18
TOTAL	**100**	100	100

EC-wide, the news on television is being watched on a daily basis by seven out of every ten citizens. The news in daily papers and on the radio receives less attention, but still attracts the daily interest of nearly half the Community population (figure 1.1). Compared with the situation in 1989, things at the EC level have changed very little.

Figure 1.1: The media use, EC12, 1992, in per cent



Interest in the media varies considerably from one Member State to the other, however. The North-South division found in 1989, with the northern Member States showing a more intense interest in the news, still seems to hold true for the news in daily papers and on the radio. Where the news on television is concerned, almost eight out of every ten Italians now watch it on a daily basis (79%), whereas only 55% of the French display an equally keen interest. The Dutch (77%), British (76%) and Germans (75%) are to be found at the top of the list as well.

The news in daily papers is read on a daily basis by a majority of citizens in five Member States: Germany (69%), Luxembourg and the Netherlands (both 65%), Denmark (63%) and the United Kingdom (58%). In contrast, in Belgium, Italy, France, Spain and Greece a mere one third or less of citizens do so. Portugal is by far the country where the news in daily papers can count on the lowest number of avid readers (17%). Over one in every three Portuguese citizens even declares "never" to read the news in daily papers (34%).

The EC-wide popularity of the news on the radio stands at a slightly lower level than that brought by the daily papers: 45% of Europeans listen to it on a daily basis. Champions of the radio news are the Danish (72%) and the Irish (65%), while the Italians (24%), Greeks (28%) and the Portuguese (31%) find themselves at the very bottom of the ranking.

As table 1 (appendix) shows in greater detail, age is of importance for the attention paid to the news. For all three media studied in this report, the observation is that the older people are, the more regular watchers/readers/listeners they are. A similar link exists between regularity and a high score on the opinion leadership index. The age of finishing education does not really distinguish between different media uses, except for revealing that of all Europeans, those still studying are actually least likely to follow the news on a daily basis.

People with a high income tend to make more use of daily papers and the radio than those with a low income. With regard to the ubiquitous television, no such income-related difference can be found. Differences between the sexes are marginal, except with regard to reading the daily papers, where men outscore women by 9%.

Compared with the results of 1989, over 50% (or in the case of the Irish newspaper use and British radio use: very close to 50%) of the populations of the same six Member States consult all three news sources on a daily basis: Denmark, Germany, Ireland, Luxembourg, the Netherlands and the United Kingdom.

Just one Member State shows an overall increase in the daily use of all three types of news sources featured here: Germany. Reunification with the former GDR is at least partially responsible for this phenomenon, as the daily media use is more widespread in the new Länder than in the rest of the country. This holds especially for the news broadcast on the radio (West: 61%, East: 68%).

On the other hand, three Member States show an overall decrease in their citizens' daily use of all three types of news sources: France by roughly 10%, the United Kingdom by roughly 5% and, far less significantly, the Netherlands by just a few percentages.

1.1.2. The interest in a range of news themes

EC citizens were presented with two sets of questions, the first ones assessing their interest in a range of scientific and non-scientific news themes, and the second ones measuring their self-estimated level of information concerning those same themes. Taken together, interest and level of information paint an accurate picture of the attention an individual pays to any given subject. The non-scientific news themes are included for comparison's sake.

Question: "Let us talk now about those issues in the news which interest you. For each issue I read out, please tell me if you are very interested, moderately interested or not at all interested in it."

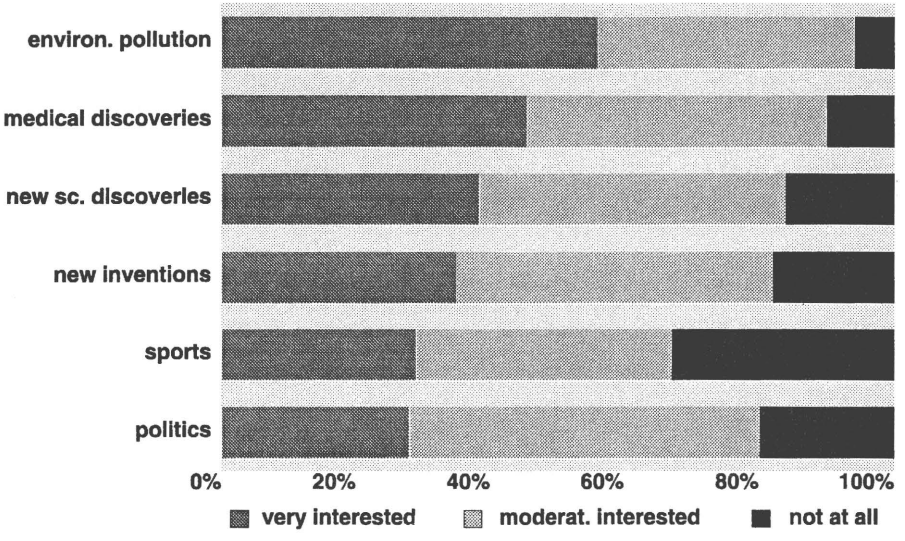
Table 1.2: Interest in a range of news themes, EC12, 1992, in per cent

answers	very	moderately	not at all
sports news	29	38	33
politics	28	52	20
new medical discoveries	45	44	10
environmental pollution	56	38	6
new inventions and technologies	35	47	18
new scientific discoveries	38	45	16

These results clearly show that at least two out of every three EC citizens are (very or moderately) interested in each of the selected news issues. Where environmental pollution is concerned, the figure even reaches 94%. It is striking that the science-related issues represented in this list (new medical discoveries, environmental pollution, new inventions and technologies and new scientific discoveries) raise Europeans' interest more than the non-scientific issues (sports news and politics) (figure 1.2).

It is of course true that a certain degree of care should be taken in interpreting these figures. Some respondents may have thought it desirable to express a vivid interest in scientific issues. Nevertheless, the high percentage of people saying that they are very interested in especially "environmental pollution" and "new medical discoveries" suggests that real attention to these themes lies at the basis of the recorded statements. Since both themes are very closely related to the respondent's personal sphere of interest (body and environment), this finding should not surprise us.

Figure 1.2: Interest in a range of themes, EC12, 1992, in per cent



no answer excluded

Compared with the situation in 1989, the number of people who are very interested in the five issues which were measured in both 1989 and 1992 has overall slightly gone up by a few percentage points. The number of people who declare themselves not to be interested at all has gone down by roughly 5% for each of the issues.

Turning our eye to the situation in the various Member States, we find that for all six issues, Portugal counts the lowest percentage of people who declare themselves to be "very interested". The actual numbers vary between 12% where "politics" are concerned and 37% for "environmental pollution". Majorities in no less than nine of the twelve Member States declare themselves to be very interested in this latter theme.

With regard to the non-scientific issues, Greece (41% for sports news) and Portugal (38% for politics) count the highest percentages of people who are "not at all interested". For the scientific issues, it is always Ireland which has the highest group of uninterested people within its borders. Percentages range between 19% ("environmental pollution") and 31% ("new scientific discoveries"). Generally, the French, the Greeks and the Dutch demonstrate a high level of interest in scientific issues.

People who are very interested in the two non-scientific themes tend to be male rather than female; young rather than old where sports, and old rather than young where politics are concerned; and well educated rather than poorly educated. They also tend to enjoy a high income rather than a low one and be opinion leaders rather than not.

With regard to the scientific themes, women tend to show a greater interest in "medical discoveries" than men, whereas the reverse is true for "new inventions and technologies" and "new scientific discoveries". There is no significant difference in the interest they express in "environmental pollution": more than half of European men and women are very interested in this particular news theme.

Interest in scientific themes apparently diminishes as people get older, except where "medical discoveries" are concerned. It is quite understandable that older people, who are generally more confronted with medical difficulties than younger ones, should pay more interest to developments in the medical field. Interest in scientific themes goes up together with respondents' level of education and income, as well as with their opinion leadership score. Avid media users are also more interested in science-related themes.

The comparison with the results of the 1989 survey shows that not much has changed with regard to the non-scientific themes. With regard to the three scientific themes that were included in both surveys, the number of very interested citizens in Denmark, Greece and Spain has gone up by 10 points or more.

1.1.3. The self-estimated level of information about a range of news themes

Question: "I would like you to tell me for each of the following issues in the news if you are very well informed, moderately well informed or poorly informed about it?"

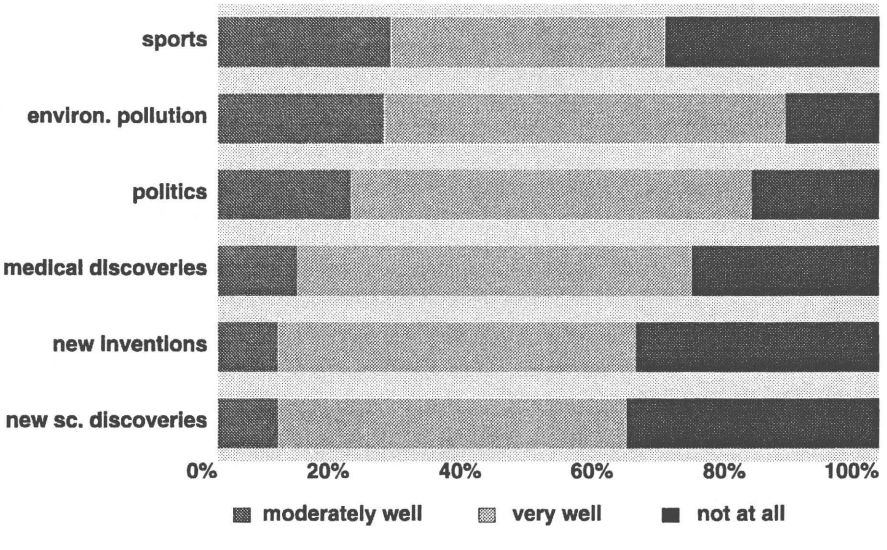
Table 1.3: Self-estimated level of information about a range of news themes, EC12, 1992, in per cent

answers	very	moderately	not at all
sports news	26	41	32
politics	20	60	19
new medical discoveries	12	59	28
environmental pollution	25	60	14
new inventions and technologies	9	53	36
new scientific discoveries	9	51	37

It turns out that Europeans in general are convinced that the level of information they have reached with regard to a number of issues in the news is no match for their interest in these same issues. Particularly where scientific themes are concerned, very few people consider themselves to be very well informed. While 45% of EC citizens proclaim a high level of interest in new medical discoveries, for example, only 12% say that they are very well informed about these discoveries. The discrepancy between the level of interest and information is less outspoken where non-scientific issues in the news are concerned (figure 1.3).

Once again, one should be careful in interpreting these figures. They reflect a self-estimated level of information, and a certain degree of reluctance to seem too boastful about one's own knowledge may have crept in to distort the figures. The fact that so many respondents place themselves somewhere in the middle, between the "very well informed" and "poorly informed" categories seems to point in this direction. With the exception of "sports news", between 5 and 6 out of every 10 Community citizens place themselves in the category of "moderately well" informed people. The two more extreme answering categories together only represent between 35% and 45% of Europeans.

Figure 1.3: Self-estimated level of information about a range of themes, EC12, 1992, in per cent



no answer excluded

A strong positive link exists between respondents' level of interest in science-related themes and their level of informedness about the results of science and technology. Whereas 12% of all EC citizens state that they are very well informed about new medical discoveries, for example, this percentage rises to 24% among Europeans who are very interested in new medical discoveries, to 23% among those who are very interested in new scientific discoveries, and to 22% among those who are very interested in new inventions and technologies. The reverse of this pattern can also be clearly found: people who are not at all interested in these science-related themes score significantly below the EC average where their level of informedness about science-related themes is concerned.

Compared with 1989, the number of people who state that they are very well informed about sports and politics (the two non-scientific themes in the question that have remained unchanged) has increased slightly, while the number of people who describe themselves as poorly informed has decreased. With regard to "new medical discoveries", "new inventions and technologies" and "new scientific discoveries" (the three scientific themes in the question that have remained unchanged), exactly the opposite has happened: less respondents say they are very well informed, and more that they are poorly informed.

When taking a closer look at the country-by-country results, it becomes apparent that with the exception of one single theme (environmental pollution), the lowest number of people who say they are very well informed is found in Portugal. The Greeks boast a well-developed awareness of politics (32%), while the British and Irish do so with regard to sports (35% and 34% respectively).

Best informed about sports are men rather than women, the young rather than the old, with the category of people still studying outperforming everyone else (35% of well-informed). Best informed about politics are the people with a high level of education, a high income and the opinion leaders.

Where the science-related issues in the news are concerned, for three of them the highest number of very well informed people is found in France. Luxembourg and the Netherlands count many well informed people among their citizens as well.

No real socio-economic profile appears from the results relating to the scientific issues, except where "environmental pollution" is concerned: information about this theme is clearly linked with respondents' level of education and opinion leadership, and less clearly so with their level of income.

1.2. Information sources on science and technology

Information on any subject can be gathered in many different ways. Up until now in this chapter, we have been concentrating on a number of news-related themes. Let us now glance at some more specific sources: science-related articles in newspapers and programmes on television and scientific magazines on the one hand, and visits to a number of scientifically oriented institutions (zoo, science and technology museums, natural history museums,...) on the other hand.

In the wording of the question relating to the media use, special attention is paid to the specific situation in each of the Member States. Where people are asked whether they watch TV programmes on science and technology or read any scientific magazines, they are provided with the names of some of the main programmes and publications in their Member State.

1.2.1. Newspapers, magazines and television

Question: Do you ...
... ever read articles on science in newspapers
... watch TV programmes on science and technology
... read any scientific magazines

Table 1.4: Newspaper, magazines and television as a source of information, EC12, 1992, in per cent

answers	newspaper	TV	scientific magazines
regularly	11	17	6
occasionally	34	42	15
hardly ever	23	22	19
never	31	19	59
TOTAL [1]	99	100	100

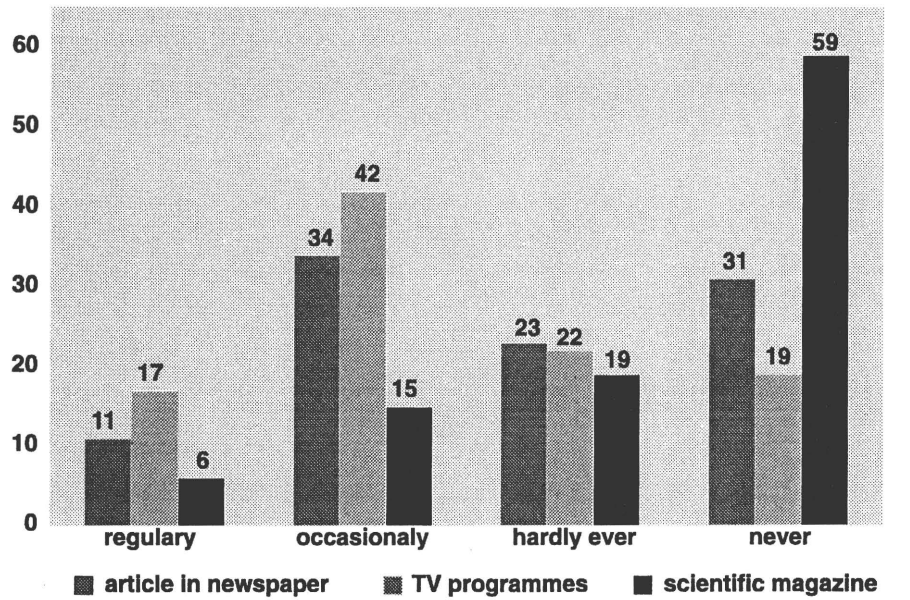
[1] Because percentages are rounded to the nearest full per cent, sometimes the sum does not equal 100%.

Taking the regular and occasional viewers together, 59% of Europeans do watch television programmes on science and technology. Almost half (45%) read articles on science in newspapers, and only one out of every five (21%) is to be found reading scientific magazines. There seems to be a direct link between the easiness

of the medium and the respondents paying attention to science and technology related stories on it.

Less than one out of every five EC citizens regularly watches television programmes on science and technology (17%), 11% regularly read scientific articles in newspapers and 6% regularly read scientific magazines (figure 1.4). Compared with 1989, when the question looked into scientific magazines only, the situation has remained the same.

Figure 1.4: Newspaper, magazines and television as a source of information on S&T, EC12, 1992, in per cent



no answer excluded

Similar to the situation with regard to informedness, respondents' interest in the science-related themes is linked with their use of the different media. People who are very interested in "new inventions and technologies" and "new scientific discoveries" are more regular consumers of science and technology information in the media. On the whole, their score is roughly double that of the average Community citizen.

Taking a closer look at the country-by-country results, we find that the Netherlands score well for newspapers and television, the United Kingdom well for television and Denmark best for scientific magazines (being the only Member State in which over

one out of every ten citizens regularly takes a scientific magazine to hand (14%)). Portugal shows the poorest scores for both newspapers and television.

In ten of the twelve Member States, over 50% of citizens never read a scientific magazine. Especially in Portugal, the situation is limited. Six out of every 10 Portuguese never read an article on science in a newspaper, 41% of them never watch a television programme on the subject of science and technology, and 73% never read a scientific magazine.

The largest difference between men and women is found with regard to science articles in newspapers, which twice as many men regularly consult (15% compared with 8%). The rest of the socio-economic variables paint a picture that is very similar to the one of 1989, when only the reading of scientific magazines was incorporated into the question. All information sources on science and technology tend to be used more by people with a high level of education and a high income, as well as by opinion leaders.

1.2.2. Visits to a number of institutes

Question: How many times in the last twelve months have you visited ...
... a science and technology museum
... a zoo or aquarium
... a natural history museum
... a public library
... an art museum

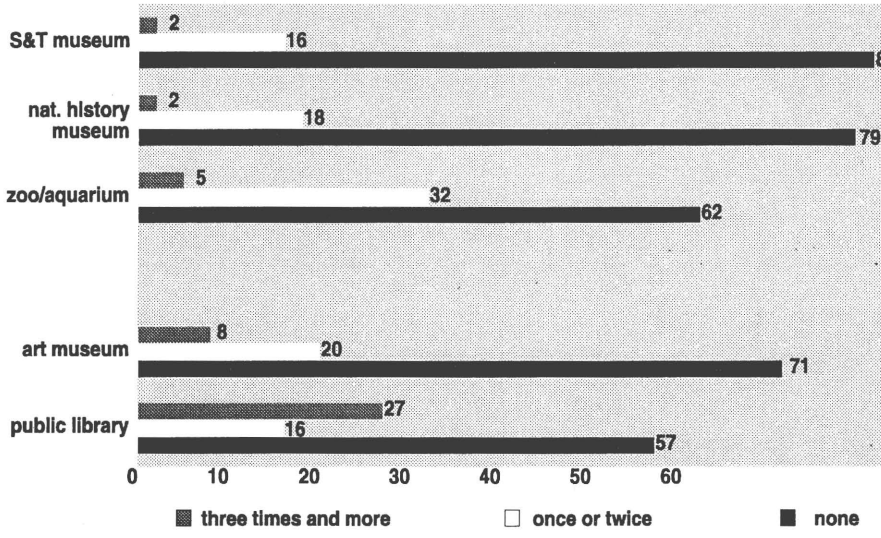
Table 1.5: Visits to a number of institutes, EC12, 1992, in per cent

answers	none	1 - 2 times	3 and more	TOTAL
science and tech. museum	81	16	2	99
zoo or aquarium	62	32	5	99
natural history museum	79	18	2	99
public library	57	16	27	100
art museum	71	20	8	99

With the sole exception of public libraries, frequent visits to the various above-mentioned institutes is a matter of a small minority of European citizens. This is most strikingly the case for the two most scientifically significant institutes on the list: science and technology museums and natural history museums. Barely one out of every five Community citizens has visited them in the course of the last twelve months prior to the survey (18% and 20% respectively) (figure 1.5).

Taking a closer look at the situation in the various Member States, we find that Denmark, Germany and Netherlands on the whole represent the most active populations where visiting museums and similar institutes is concerned. The least active populations are found in Portugal, Italy and Greece. In four Member States, a majority of citizens have visited a public library at least once in the twelve months prior to the survey: Denmark (73%), the United Kingdom (67%), the Netherlands (58%) and Ireland (50%).

Figure 1.5: Visits to a number of institutes, EC12, 1992, in per cent



The only institute with regard to which a significant difference between the sexes is found are "science and technology museums" (21% of men compared with 15% of women vistited one in the course of the twelve months leading up to the time of this survey).

With regard to the other socio-economic variables, a rather clear-cut picture emerges: people tend to visit the above institutes more as they are younger, better educated, enjoy a high income and display a high score on the opinion leadership index. They tend to visit them less frequently as they are older, less well educated, enjoy a lower income and score low on opinion leadership.

Those Community citizens who are very interested in science-related news themes tend to visit the above institutes more regularly than other people. This is the case for both scientific and non-scientific institutes, but the difference with the average European's score is less outspoken than where informedness and media use are concerned.

Other factors do play a role as well in the visitng behaviour of people. When we look at the situation from the point of view of respondents' family composition, for example, we find that 32 per cent of the people who have no children under 15 living at home have visited a zoo or aquarium in the twelve months leading up to the time of the survey. For those people with 1, 2, 3 and 4 or more children under 15 living at home, this percentage reaches 46%, 51%, 51% and 46% respectively.

CHAPTER 2

2. Knowledge about science and technology

Introduction

In this chapter, knowledge of science and technology is assessed from three different angles. Firstly, respondents were asked up to which degree, using a five-point scale, they think various disciplines are scientific.

The two next steps are based on the idea that understanding of science and technology nowadays requires (1) a basic knowledge of scientific facts and (2) an understanding of the process or methods of science for testing our models of reality. The basic vocabulary is tested by 11 statements (plus one seperate question) based on a methodology developed by Miller [1] and slightly altered. For each given statement, the respondent had to decide whether it was true or false. The second part, the understanding of scientific methods, was explored by a set of three questions describing different aspects of scientific methods (experimental method and the concept of the control group and probability). The respondent could opt for a rational and scientific method or different answers which were provided. For most of the questions, a comparison with the results of the survey from 1989 is possible.

Main findings are summarized below:

· Most Europeans have an opinion about how scientific a discipline is and have at least a general idea of what the various scientific disciplines stand for.

· Where physics, medicine, biology, astronomy, economics and history are concerned, there is a tendency for people from the following socio-demographic groups to consider them scientific: high level of education, high income and high European social grade, media use as a source of information on a regular basis and strong opinion leadership qualities.

· People who are less educated, people with a lower income and people who rank on the lower level of the European social grade tend to regard psychology and astrology as more scientific than the average citizen.
· With or without explanation, about a quarter of respondents think that astrology is either «very scientific» or «not at all» scientific.

· Scepticism as to the scientific nature of astrology is strongly expressed among respondents with a high level of education, people with a higher income, people who consider themselves as politically left and people who rank high on the European social grade.

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[1] J.D. Miller: Scientific literacy in the United States and the European Community, Chicago, 1991; J.R. Durant, J. Miller, J.-F. Tchernia, W. van Deelen: Europeans, Science ans Technology, Washington, 1991

· EC-wide, history gets the lowest average scores (2.83 with explanation, 2.59 without explanation). Especially in the United Kingdom, Ireland, Italy and France, up to 50 per cent of respondents sate that history is «not at all» scientific.

· History's perceived lack of scientific contents is shared by almost all socio-demographic groups. Only the people who follow the news on a regular basis, as well as opinion leaders see history as a science.

· For six of the eleven statements, a majority of Europeans knows the correct answer. The basic truth about the heat in the centre of the earth, the fact that continents are moving slowly and the origin of oxygen is known by four out of five Europeans. Two in three give the correct answer to the practical question whether radioactive milk can be made safe by boiling it, as well as the question whether human beings developed from an earlier species of animals. One in two knows that radioactivity is also a natural phenomenom, that humans developed after dinosaurs had become extinct and that the sex of children is decided by the father's gene.

· Almost half of respondents pick out the experimental method (45 per cent), while the other two possible answers are favoured by 22 per cent of respondents each.

· A majority of Europeans (65 per cent) decide for the correct answer where the question of the control group is concerned.

· EC-wide, almost three out of every four citizens (71 per cent) understand the concept of probability as presented in the question.

· Summarizing, about a quarter of Europeans give three out of three correct answers, 39 per cent give two correct answers, 26 per cent give one correct answer and 12 per cent could not answer any of the questions correctly.

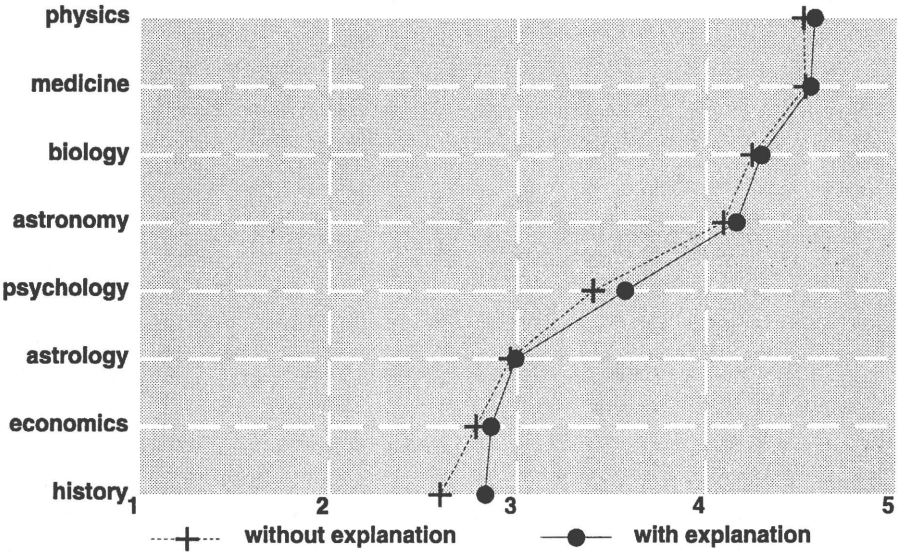
· There is a high degree of overlap between people's factual scientific knowledge and their understanding of the aspects of scientific methods. For example, of the people who answer 12 knowledge statements correctly, 47 per cent give three correct answers concerning the scientific methods (experimental method, control group and probability).

2.1. What is regarded as scientific?

The following question gave the respondent the possiblilty to express how scientific various scientific disciplines are in his opinion.

Question: People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is «very scientific» and number 1 that it is «not at all scientific». The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so. (split ballot)

Figure 2.1: The scientificness of different scientific disciplines, EC12, 1992, averages



Since it was unclear to which extent respondents would know what is actually meant by the different disciplines, the split ballot method was applied. Half the interviewees in a particular country were only given the name of the discipline (e.g. «physics»), the other half recieved a little explanation of the subject together with its name (e.g. «physics, that is the study of properties and interactions of matter and energy»). For the comparison of the results we analyse the average scores of the marks given by each respondent. The EC-wide result shows that it

hardly matters whether the respondents received any additional information or not, with the exception of history and psychology (figure 2.1). Although there are hardly any differences found, references are made in the further discussion (with/ without explanation). With or without the short explanation, almost all interviewees come up with an answer to that question. It can be said that Europeans have an opinion about how scientific a discipline is and that they have at least a general idea of what the various scientific disciplines stand for.

EC-wide, the disciplines «physics», «medicine», «biology» and «astronomy» are considered to be the most scientific. The four items recieve a score between four and five on the five-point scale. «History» and «economics» rank last with a score closest to the «not scientific at all» end of the scale. «Astrology» ranks before the two latter sciences, with a score around three points. [2] In the eyes of Europeans, «psychology» is more scientific than «astrology», but definitely less scientific than «biology».

As overall results we can state that:

· In Greece, people tend to give high scores to any discipline. If you rank the country results according to average value, Greece outscores all other EC countries for all items (with explanation). Very favourable towards the scientific character of the disciplines are the East Germans, who are found among the first four countries six times (with explanation), followed by the West Germans (five times among the first four countries).

· In the United Kingdom and Ireland, citizens are most sceptical about the scientificness of the given subjects (with explanation). Ireland and the United Kingdom are found amongst the four last countries six times (with explanation), followed by France and Italy (four times under the last four countries).

· For the socio-demographic variables education, income, European social grade media use and opinion leadership, differences between the groups were found for all the sujects discussed.

· Where physics, medicine, biology, astronomy, economics and history are concerned, there is a tendency for people from the following socio-demographic groups to consider them scientific: high level of education, high income and high European social grade, media use as a source of information on a regular basis and strong opinion leadership qualities.

· For psychology and astrology, people who are less educated, people with a lower income and people who rank on the lower level of the European social grade tend to regard the two items as more scientific.

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[2] In the 1989 survey a question about «astrology» was included for a different purpose and in a different context. The reason for the question then was to find out how scientific Europeans tended to regard astrology as opposed to other disciplines.

In the following, the most outstanding results for the countries and the socio-economic variables are discussed by subject:

Physics

Seven out of every ten Europeans say that physics is «very scientific» (five points), while another 15 per cent give four points on the five point scale, with or without a given explanation. Greece, Germany (East) and Denmark are situated above the EC-wide average of 4.57 (with explanation) resp. 4.51 (without explanation); in Luxembourg, Portugal and Ireland, the results rank below the EC average.

The explanation of the different disciplines given to respondents hardly affects the results of various socio-economic variables. Without explanation, people with a better level of education (age of fininshing education more than 20 years), people with a higher income (income scale ++) and people who rank on the first level of the European social grade (grade A) consider physics as being more scientific than the average (difference about 0.2 points). People on the lowest grade of the European social grade rank considerably low (average 4.16), while 15 per cent of them could not give an answer at all.

Medicine

In the eyes of Europeans, medicine is regarded as «very scientific» as well. Country averages vary from 4.87 (with explanation) resp. 4.9 (without explanation) in Greece - 90 per cent of the Greek respondents give medicine 5 points = «very scientific» - to 4.38 (with explanation) in Portugal resp. 4.39 (without explanation) in France. In both Portugal and France about two in three respondents say that medicine is «very scientific».

99 per cent of the Europeans give an answer (with and without explanation). For the socio-demographic groups there are no differences found at all. There is only one exeption: People who hardly watch TV, listen to the radio or read newspaper and do not get any explanation score below the EC average (4.29 compared to the EC average of 4.52).

Biology

About 75 per cent of Europeans give biology 4 or 5 points for being scientific. In Greece and Germany (East), more people see biology as «very scientific» so that these two countries score above the EC average of 4.29 (with explanation) resp. 4.24 (without explanation). In the Netherlands, the United Kingdom and Denmark, biology is seen as being less scientific than average (with or without explanation).

People with a better level of education (age of finishing education more than 20 years), people with a better income and people who rank high on the European social grade tend to give biology better marks on the five point scale (difference with the EC average about 0.2). Another variable which shows differences is the opinon leadership index: opinion leaders consider biology as more scientific than followers (e.g. opinion leadership ++: 4.46 to opinion leadership --: 4.07; both without explanation).

Astronomy

Astronomy, the last of the four subjects which receive between four and five points and are regarded as being very scientific, has a very scientific image in Greece, Germany (East) and Denmark - explained or not, astronomy ranks above the EC average of 4.16 (with explanation) resp. 4.09 (without explanation). In Great Britain and Ireland the average score lies below the EC average.

People who finished their education by the age of 15 years (average 3.95) score lower than people who finished their education after the age of 20 (average 4.46) and people who are still studying (average 4.38). A similar tendency can be detected for the European social grade: people belonging to the higher grades see astronomy as more scientific than people belonging to the lower grades. In addition there is a strong link to opinion leadership and media use. Opinion leaders (average 4.36) as well as people who use various media on a regular basis (average 4.19) consider astronomy as being more scientific than opinion followers (average 3.94) or people who hardly watch TV, listen to the radio or read the news in the newspaper (average 3.91). The quoted figures refer to the result with explanation, but the same variations can be found for the the results without explanation.

Psychology

The EC average for psychology is 3.57 (with explanation) resp. 3.4 (without explanation), right between the two groups of subjects which are considered as very scientific (physics, medecine, biology and astrology) and the group which is regarded as not very scientific (astrology, economics and history). In Greece, Luxembourg and in both parts of Germany psychology is considered to be more scientific than in the other countries, no matter whether an explanation was given or not. In the United Kingdom, France and Italy, people do not consider psychology as scientific. With or without explanation, the average country scores are lower than the EC average.

Surprisingly, more than a third of the people who finished their education by the age of 15 years give psychology the maximum mark of 5 = «very scientific» (average with explanation 3.75), while only a fifth of the people who are still study-

ing do so (average 3.33). People with a low income (income scale --: average 3.79) show more belief in psychology than people with a high income (income scale ++: average 3.46).

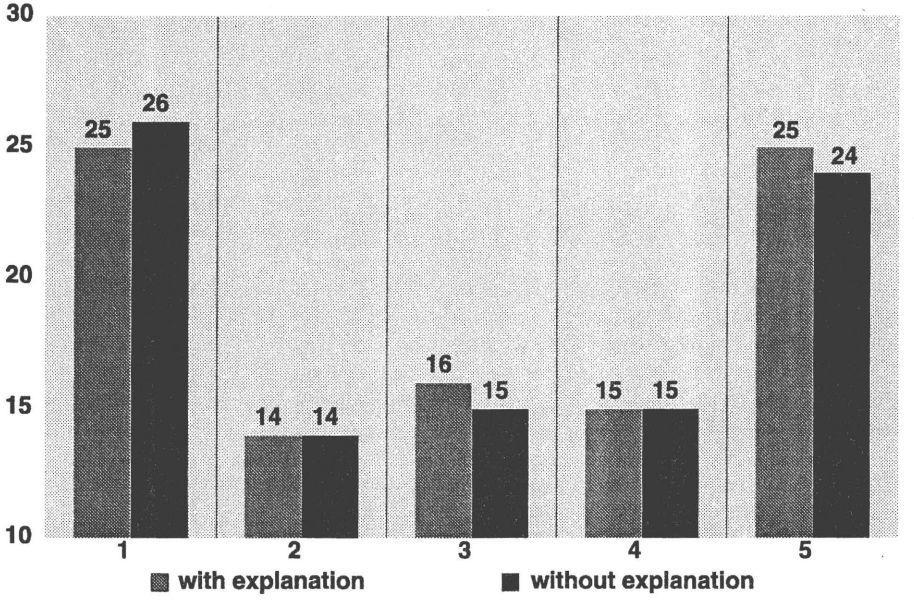
Astrology

With or without explanation, about a quarter of respondents think that astrology is either «very scientific» or «not at all» scientific. The other half of the respondents attribute scores somewhere in between (2, 3 or 4 points) (figure 2.2).

In Greece, Spain and Portugal, astrology is seen as rather scientific. Between 30 per cent and 40 per cent of respondents give astrology the highest possible score of 5 = «very scientific». On the other hand, in Italy, Germany (East) and the Untited Kingdom, astrology does not have the reputation of a scientific subject. In these countries, between 30 per cent and 40 per cent of respondents think astrology is «not at all» scientific.

Scepticism as to the scientific nature of astrology is strongly expressed among respondents with a high level of education, people with a higher income, people who consider themselves as politically left and people who rank high on the European social grade. The scientific nature of astrology recieves more credit from people who finished their education by the age of 15 years, people with a low income, opinion followers, people in the political centre, as well as from people on the lower grades of the European social grades.

Figure 2.2: Astrology on the 5-point scale, EC12, 1992, in per cent



Economics

Most Europeans attribute either 1 point, 2 points or 3 points on a 5-point scale to economics, «that is the study of the production and distribution of wealth» (explanation given). The opinion is strongest in Ireland, the United Kingdom, Spain and France: between 28 per cent and 44 per cent give «economics» one point = «not at all» scientific on the five point scale. In Greece and Germany (West), however, citizens tend to see economics with and without an explanation as a science.

Although economics are not considered to be a science by a majority of Europeans, respondents from the following groups tend to give higher scores: people with a high level of education, people with a high income and as a consequence people belonging to highest level of the European social grade. The same is true for people who read newspapers, watch TV and listen to the radio on a regular basis. People who hardly use the media and opinion followers, on the other hand, tend to attribute lower than average scores to economic.

History

EC-wide, history gets the lowest average scores (2.83 with explanation, 2.59 without explanation). Especially in the United Kingdom, Ireland, Italy and France, up to 50 per cent of respondents sate that history is «not at all» scientific. In Greece, both parts of Germany and in Luxembourg, on the other hand, a quarter to half of respondents tend to regard history as «very scientific».

History's perceived lack of scientific contents is shared by almost all socio-demographic groups. Only the people who follow the news on a regular basis, as well as opinion leaders can see history as a science. Their scores are above the EC average, whilst people who hardly follow the news score far below the EC-average (2.52 to the EC- average of 2.83 with explanation).

2.2. Europeans' factual knowledge

Europeans' factual knowledge was tested with statements about common knowledge and about more recent scientific discoveries, for which the respondents had to decide whether they were true ot false.

Question: Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.

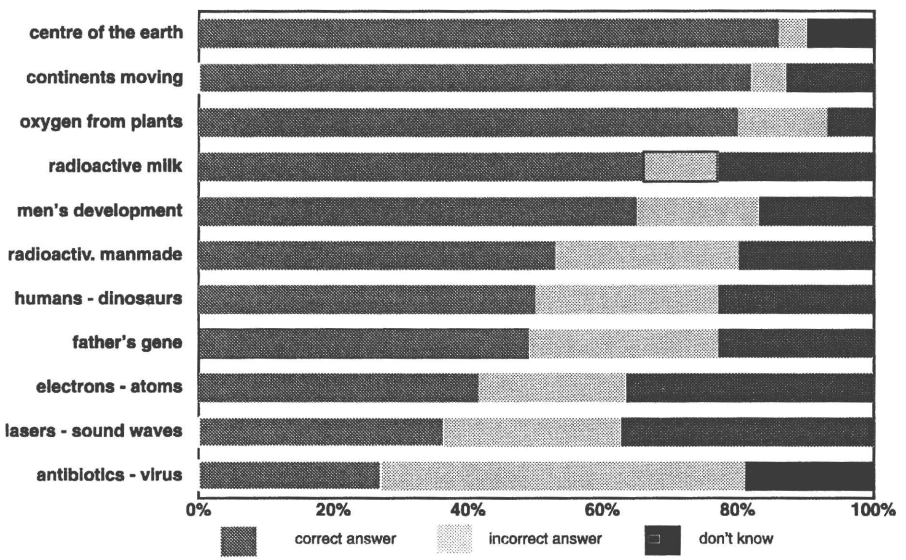
For the wording of the statements a table is included here, the correct answers are bold.

Table 2.1: Knowledge about 11 statements concerning scientific discoveries, EC12, 1992, 1989, in per cent

statements	true		false		don't know	
	1989	1992	1989	1992	1989	1992
The centre of the earth is very hot	85	**86**	5	4	10	10
The oxygen we breathe comes from plants	**81**	**80**	13	13	6	7
Radioactive milk can be made safe by boiling it	13	11	**65**	**66**	22	23
Electrons are smaller than atoms	**42**	21	22	38	37	**41**
The continents on which we live have been moving their location for millions of years and will continueto move in the future (1992)/ The continents are moving slowly about on the surface of the earth (1989)	**69**	**82**	11	5	20	13
It is the father's gene which decides whether the baby is a boy or a girl	**49**	**49**	28	28	23	23
The earliest humans lived at the same time as the dinosaurs	29	27	**47**	**50**	24	23
Antibiotics kill viruses as well as bacteria	58	54	**24**	**27**	18	19
Lasers work by focusing sound waves	24	26	**37**	**36**	39	37
All radioactivity is man-made	24	27	**57**	**53**	19	20
Human beings, as we know them today,developed from earlier species of animals (1990)/Question 446 (1989)	**62**	**65**	24	18	14	17

For six of the eleven statements, a majority of Europeans knows the correct answer. The basic truth about the heat in the centre of the earth, the fact that continents are moving slowly and the origin of oxygen is known by four out of five Europeans. Two in three give the correct answer to the practical question whether radioactive milk can be made safe by boiling it, as well as the question whether human beings developed from an earlier species of animals. One in two knows that radioactivity is also a natural phenomenom, that humans developed after dinosaurs had become extinct and that the sex of children is decided by the father's gene. The statements about the size of atoms and electrons and about lasers was answered correctly by only two out of five Europeans, though almost the same number of people answer «don't know». The statement about antibiotics was the only one for which a majority of Europeans give the incorrect answer (figure 2.3).

Figure 2.3: Knowledge about 11 statements concerning scientific discoveries, EC12, 1992, in per cent



The comparison with the results ofthe 1989 survey shows that there are hardly any differences with the exception of one statement (on the shifting continents) which has been rephrased in a more comprehensive way for the 1992 survey (table 2.1).

For the **country-by-country** analysis, the country results for each statement were ranked according to their percentages of correct answers, while specific attention is given to the four countries which rank first and the four countries which rank last. Denmark ranks among the first four countries for 9 out of 11 statements, followed by Germany (East) and United Kingdom (both seven times among the first four countries). Portugal is found most often (ten times) among the bottom four countries of the ranking, followed by Greece (nine times) and Ireland (six times).

As an overall result for **the socio-demographic groups** we can state that:

· For ten out of eleven statements, the **education** of the respondent plays an important role (exception: «the oxygen we breathe comes from plants»). People with a high level of education (age of finishing education more than 20 years) or people who are still studying are more likely to give correct answers.

· People with a higher **income** more often give correct answers than people whose income tends to be rather low. (The European social grade is related to the two above mentioned points, and therefore shows a similar picture.)

· **Opinion leaders** more often give correct answers than the EC average and than opinion followers. The latter often give «don't know» as an answer.

· For some of the statements, the variables **age** and **media use** are important. The two younger age groups (15-24 years and 25-39 years) usually know more than people over 55 years old. People who hardly follow the news on TV, radio and in newspapers tend to give correct answers less often.

A short overiew for each statement and the results for the socio-economic variables is given on the following page, the most remarkable results for each of the statements are summarized further below.

Table 2.2-A: Knowledge about 11 statements concerning scientific discoveries, EC12, 1992

statements	socio-economic groups																							
	sex		age				age of finishing education				income				opinion leadership				media use					
	m	f	15 -24	25 -39	40 -54	55 +	15	16-19	20	stu dy	++	+	-	-	++	+	-	–	++	+	-	–		
The centre of the earth is very hot	+	-	·	·	·	·	--	·	++	+		+	·	·	--		+	+	·	--		+	·	-	--
The oxygen we breathe comes from plants	·	·	·	·	·	·	·	·	·	+		·	·	·	·		+	·	·	-		·	·	·	-
Radioactive milk can be made safe by boiling it	·	-	·	+	·	--	--	·	++	+	++	+	·	--			++	+	·	--		+	·	--	--
Electrons are smaller than atoms	++	-	++	+	·	--	--	·	++	++		++	+	·	--		+	+	·	--		·	·	·	·
The continents	+	·	+	+	·	-	--	+	++	++		++	+	·	--		++	+	·	--		+	·	-	--

+: 4-7 points above the EC average ·: up to 3 points above or below the EC average -: 4-7 points below the EC average
++: 8 and more points above the EC average --: 8 and more points below the EC average

Table 2.2-B: Knowledge about 11 statements concerning scientific discoveries, EC12, 1992

statements	sex		age				age of finishing education				socio-economic groups income				opinion leadership				media use			
	m	f	15-24	25-39	40-54	55 +	15	16-19	20 +	stu dy	++	+	-	--	++	+	-	--	++	+	-	--
It is the father's gene which decides whether the baby is a boy or a girl	-	·	-	+	·	-	-	+	+	-	·	·	·	-	·	·	·	-	·	·	·	·
The earliest humans lived at the same time as the dinosaurs	·	·	++	+	·	--	--	+	++	++	++	·	·	-	++	+	·	--	+	·	-	-
Antibiotics kill viruses as well as bacteria	·	·	·	·	·	-	--	·	++	·	++	·	·	--	++	·	·	-	+	·	-	·
Lasers work by focusing sound waves	++	--	+	++	·	--	--	·	++	++	++	+	·	--	++	+	·	--	+	·	-	--
All radioactivity is man-made	++	-	+	+	·	--	--	·	++	++	++	+	·	--	++	+	-	--	+	·	-	--
Human beings, as we know them today, developed from earlier species of animals	+	·	++	+	·	--	-	·	+	++	+	·	·	-	+	·	·	-	·	·	·	-

+: 4-7 points above the EC average
++: 8 and more points above the EC average
·: up to 3 points above or below the EC average
-: 4-7 points below the EC average
--: 8 and more points below the EC average

Statement: The centre of the earth is very hot

Although this statement was answered correctly by a vast majority of Europeans (86 per cent), there are some differences to be found among the various Member States. The correct answer was given most often in both parts of Germany (West 93 per cent, East 92 per cent) and in Denmark (91 per cent). About three quarters of the Portuguese (71 per cent) and Greeks (75 per cent) give the correct answer. In those two countries, about 20 per cent of respondents opt for the «don't know» category.

For the socio-demographic groups some differences are found as well. The correct answer was given most often by people with a higher level of education, a higher income and thus by people who belong to the higher European social grades. The variables media use and opinion leadership are relevant as well: e.g. only 77 per cent of the people who hardly watch TV, listen to the radio or read newspapers and 78 per cent of the people who are considered opinion followers give a correct answer (compared with the EC average of 86 per cent).

Statement: The continents on which we live have been moving their location for millions of years and will continue to move in the future

The fact that continents are slowly changing their location is best known in France, Denmark (both 91 per cent) and the United Kingdom (87 per cent). In Portugal (56 per cent), Greece (58 per cent) and Ireland (66 per cent) less people are aware of this fact.

As detailed with regard to the previous statement, the education, income, social grade and opinion leadership variables are the ones that show differences. The better the education, the income, the social grade, the more often a correct answer is given. Opinion leaders usually give a correct answer, a quarter of opinion followers answer with «don't know».

Statement: The oxygen we breathe comes from plants

The percentage of correctly given answers varies between 89 per cent in Denmark and 68 per cent in Ireland. For the socio-demographic groups, hardly any differences are found. The most significant ones apply to opinion followers and the people hardly watching TV, listening to the radio or reading newspapers (in both cases 5 percentage points below the EC average of 80 per cent correct answers).

Statement: Radioactive milk can be made safe by boiling it

EC-wide, 66 per cent know the correct negative answer to this statement. The correct answer are most often found in the Netherlands (77 per cent), in both parts of Germany (West 73 per cent, East 69 per cent) and in Denmark (68 per

cent). In Portugal, more people opt for the answer «don't know» (47 per cent), than for a correct answer (36 per cent).

Knowledge about radioactivity is widespread amongst the people with a high level of education (age of finishing education over 20 years: 79 per cent), people with a higher income (income scale ++: 78 per cent) and thus, again, among the people who belong to a higher scocial grade. Opinion leaders tend to have a better knowledge as well (76 per cent). Respondents aged between 25 and 39 years give considerably more correct answers (73 per cent). This might be related to the fact that these people were between 18 and 31 years old when the Chernobyl accident took place, and are now at the age of having families and being responsible for children.

People who finished their education by the age of 15, people with a rather low income, opinion followers, people who do not follow the news on a regular basis and people over 55 years old score 10 to 14 percentage points below the EC average.

Statement: Human beings, as we know them today, developed from earlier species of animals

Although EC-wide, more than two thirds of respondents agree with this statement, the country results vary from 77 per cent in Germany (East), followed by 76 per cent in Denmark and 75 per cent in the United Kingdom, to 48 per cent in Greece. The Netherlands (49 per cent) and Germany (West) (53 per cent) are to be found at the lower end of the ranking as well.

The level of agreement with the above statement depends very much on the age of the respondent: three quarters of the people aged between 15 and 24 years give the scientifically correct answer, while only 55 per cent of the people over 55 years do so. Another factor is the education of the respondent; 59 per cent of the people who finished their education by the age of 15 years provide the correct answer, but people with a better level of education (age of finishing education more than 19 years: 70 per cent) or young people who are still studying (76 per cent) agree with the statement. Though it is not a far-fetched thought that the religion of the respondent would influence his/her answer, this is not true for Roman-Catholics or the Protestants. Out of the orthodox respondents - most present in Greece - just 44 per cent agree to the statement.

Statement: All radioactivity is man-made

Although about half of Europeans give a correct answer to this statement, the country results show some differences. Denmark (66 per cent), the United Kingdom (65 per cent) and the Netherlands (62 per cent) outscore the other EC-countries, while the lower results are found in Portugal (32 per cent), Greece (34 per cent) and Spain (40 per cent).

Of the socio-demographic variables, education turns out to be the most discriminating. People with a high level of education score 22 points above the EC average of 53 per cent, while people who finished their education by the age of 15 years score 14 points below the EC average. Similar patterns exist for income and opinion leadership: the higher the income and the stronger the leadership qualities of the respondent, the more often a correct answer ensues. People who hardly follow the news in the media score 12 points below the EC average.

Statement: The earliest humans lived at the same time as the dinosaurs

The country results range from 70 per cent (Germany East), 59 per cent (Germany West and Denmark) to 24 per cent (Portugal) and 27 per cent (Greece). In countries with low percentages of correct answers, the percentage of «don't know» tends to be rather high.

Knowledge of prehistoric times depends on the age of the respondent: young people (15-24 years: 60 per cent) and young adults (25-39 years: 56 per cent) show a better knowledge than the older age group (55+ years: 38 per cent). The contrast is even stronger with regard to the variable education (age of finishing education over 20 years: 65 per cent; still studying: 63 per cent; age of finishing education up to 15 years: 35 per cent) and the variable income (income scale ++: 64 per cent; income scale --: 41 per cent). The European social grade quite logically again apes these differences. Among opinion leaders 58 per cent answer correctly, as opposed to 38 per cent of opinion followers.

Statement: It is the father's gene which decides whether the baby is a boy or a girl

Correct answers were given most often in Ireland (58 per cent), France and the United Kingdom (both 56 per cent). Spain (38 per cent), Denmark and Portugal (40 per cent) were outscored by all other EC countries. For this statement no real fluctuations according to the socio-demographic variables can be described. People with a lower income (income scale --:44 per cent) people belonging to the two lower European social grade E2 and E3 (43 per cent resp. 41 per cent) score just a bit below the EC average of 49 per cent.

Statement: Electrons are smaller than atoms

For this statement the percentage of correct answers varies between 48 per cent in Italy and France, and 30 per cent in Portugal, followed by 33 per cent in Ireland. On-going education is the most discriminating variable found for this statement. People who are still studying show 68 per cent of correct answers. This is 27 points above the EC average of 41 per cent. 62 per cent of the respondents who finished their education after their 20th birthday and 58 per cent of younger respondents (15-24 years) say that the statement is true. People who finished their

education before the age of 16 years (24 per cent) and people who are older than 55 years (28 per cent) score far below the EC average. Since on top of this, people with a high income score better than people with a low income, the differences between European social grades are extremly high: grade A (high): 58 per cent correct answers - grade E3 (low): 24 per cent correct answers.

Statement: Lasers work by focusing sound waves

The country-by-country results for this statement vary a lot in every possible respect (EC average: 36 correct answers). Most correct answers are given in the Netherlands (47 per cent), in Germany (East) (46 per cent), in the United Kingdom (45 per cent) and in Denmark (41 per cent). Only twelve per cent of Greek respondents give the correct answer, while 66 per cent of them answer «don't know».

Knowledge about how lasers function is wider spread amongst men (46 per cent) than amongst women (28 per cent). Age plays an important role: people between 25 and 39 years most often give the correct answer, in stark contrast to older people (55 + years: 25 per cent). Education and income are the two variables which discriminate most: education finished at the age of 20 or more: 54 per cent correct answers; education finfished by the age of 15 years: 23 per cent correct answers; income scale ++: 51 per cent correct answers; income scale --: 26 per cent correct answers.

Statement: Antibiotics kill viruses as well as bacteria

Only in Denmark about half of respondents give the correct answer, followed by the United Kingdom (39 per cent) and the Netherlands (38 per cent). In seven EC countries, over half of respondents think that the given statement is true (e.g. Luxembourg 77 per cent, Italy 72 per cent, Belgium 67 per cent).

The education of the respondent plays an important role: people who finished their education when they were over 20 years score 15 percentage points higher than the EC average (42 per cent compared with 27 per cent for the Community as a whole). Just 18 per cent of the people with a lower level of education give the correct answer. People with a higher income (income scale ++: 38 per cent) and people who rank high on the European social grade (grade A (high): 37 per cent) have a better knowledge as opposed to people with a lower income (income scale--: 19 per cent) and people belonging to the lower social grades (grade E3 (low): 11 per cent). Opinion leaders (35 per cent) seem to be better informed than opinion followers (21 per cent).

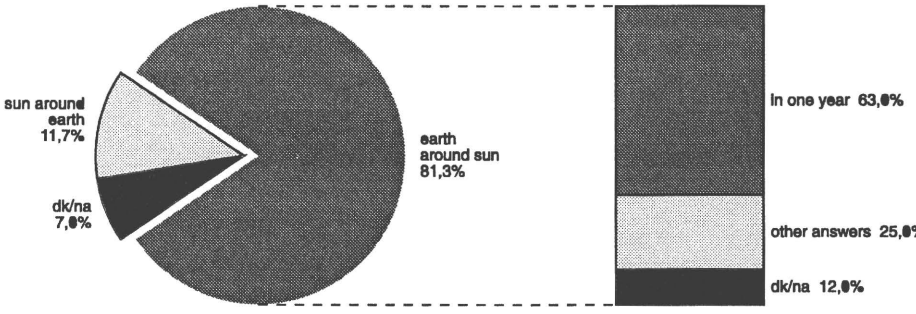
In addition to the set of eleven statements, a **separate question** concerning knowledge of science was asked.

Question: Does the earth go around the sun or does the sun go around the earth?
combined with: (if the answer was: «The earth goes around the sun»)
Question: How long does it take for the earth to go around the sun?

For the first part of the question, four in five Europeans give the correct answer (figure 2.4). The country results vary considerably, from 89 per cent in Germany (East) and Italy to 69 per cent in the United Kingdom. In the UK, the wrong answer was given most often (21 per cent). The socio-demographic pattern described for most of the above statements applies for this knowledge question as well: education, income, European social grade, opinion leadership and media use are the most discriminating variables.

Part two of the question - how long it takes the earth to go around the sun - was only put to those people who answered correctly to the first part. EC-wide, the correct answer «one year» was given by 63 per cent of the remaining respondents; taken together, this means 51 per cent of Europeans gave a correct answer to both parts of the question (figure 2.4). All socio-demographic variables mentioned above with the exception of media use are discriminating for the second part of the question as well.

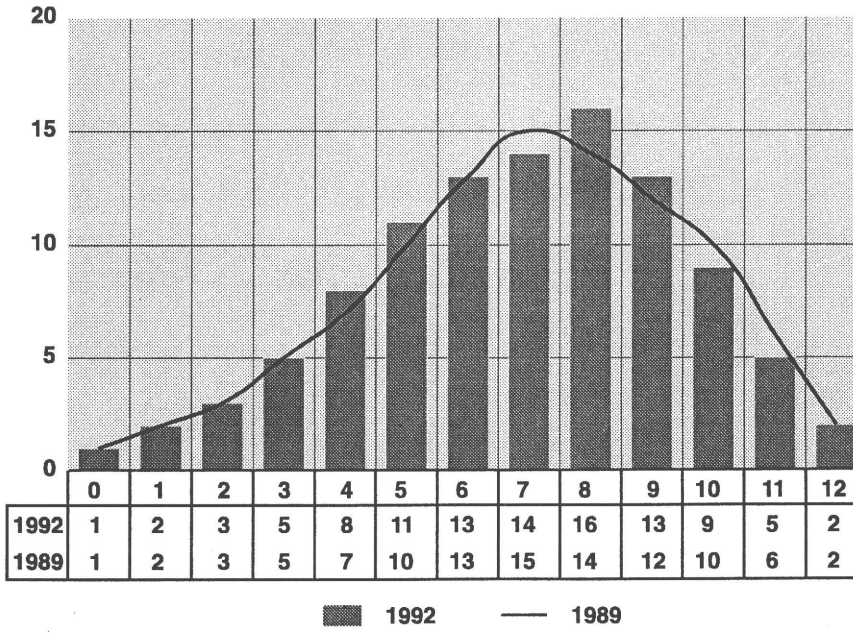
Figure 2.4: The concept of the universe, EC12, 1992, in per cent



2.3. Country-by-country differences and socio-economic characteristics of the understanding public (based on the number of correct answers to the knowledge statements)

After having looked at each of the 11 statements as well as the separate question on the relationship between the sun and the earth individually, in order to detect differences in the country results and for the different socio-demographic groups, it is now interesting to develop a measure to estimate the global level of understanding for all knowledge questions. As was done in the 1989 survey, the number of correctly given answers were summed up for each respondent. Such a scale gives an overview of how knowledge of science and technology is spread throughout the European Community in general, throughout the individual countries and throughout the socio-demographic groups. The scale can range from zero to twelve correct answers. This type of analysis has the drawback that it does not allow to distinguish between difficult statements and statements for which it was easier to answer. E.g. the correct answer for the statement «the centre of the earth is very hot» has the same value on the scale as the correct answer for the statement «antibiotics kill viruses as well as bacteria» although the latter is obviously a more difficult statement to judge. Further analysis, which would take the level of difficulty into account (e.g. a Guttman scale) could provide more profound information. Figure 2.5 gives an overview of the EC-wide results in comparison with the 1989 survey.

Figure 2.5: **How many knowledge questions were answered correctly, EC12, 1992, 1989, in per cent**



	0	1	2	3	4	5	6	7	8	9	10	11	12
1992	1	2	3	5	8	11	13	14	16	13	9	5	2
1989	1	2	3	5	7	10	13	15	14	12	10	6	2

In 1989, seven correct answers were given by most individuals. In 1992, the largest group of respondents gives eight correct answers. The results for the various statements have hardly changed in comparison with the 1989 survey. The only exception is the rephrased statement about the shifting continents (+ 13 points). The reason for the change is most likely to be found in the different phrasing.

The average number of correctly answered questions was calculated for all individuals in each **country**. If the average for a country is high, more people give more correct answers to the statements. Table 2.3 shows that the country average varies considerably from an average of 7.55 correct answers for Germany (East) to an average of 5.1 correct answers in Portugal. In line with the results from the 11 individual statements, Denmark (7.52), the United Kingdom (7.33) and France (7.31) are at the top of the ranking, while Greece (5.56), Ireland (6.14) and Spain (6.39) are found at the bottom. As an example for the distribution of correct answers, Germany (East) and Portugal are compared in figure 2.6.

Table 2.3: How many knowledge questions were answered correctly in each country, average, 1992

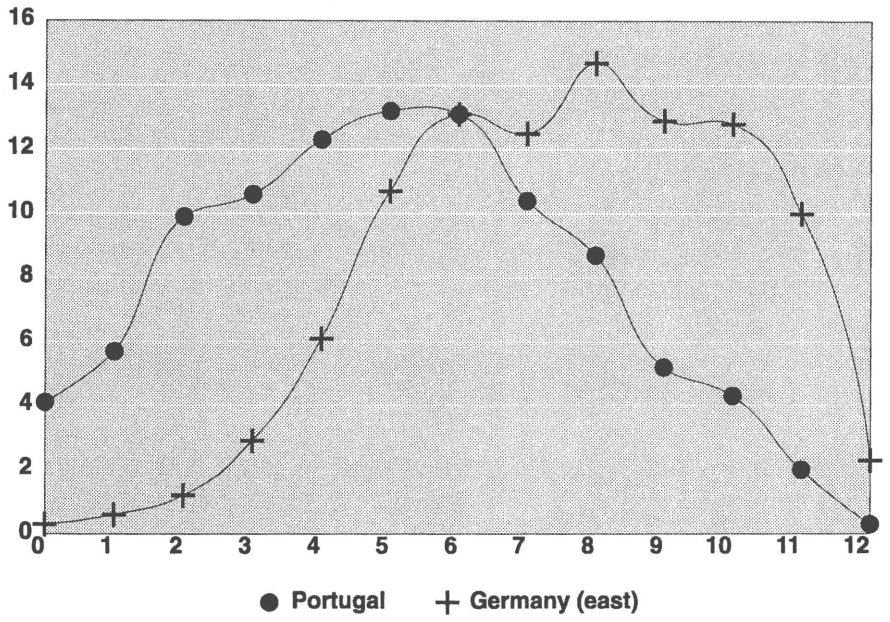
countries	average
Germany (East)	7.55
Denmark	7.52
United Kingdom	7.33
France	7.31
Netherlands	7.08
EC12	**6.88**
Germany (West)	6.87
Luxembourg	6.84
Italy	6.64
Belgium	6.60
Spain	6.39
Ireland	6.14
Greece	5.56
Portugal	5.10

For the different **socio-demographic groups**, the analysis of our knowledge index confirms the results found in the presentation of the individual knowledge statements. The following overview summarizes the differences:

- **Men** give more more correct answers than **women** (on average 7.36 compared with 6.44).
- People between the ages of 15-39 years have a better knowledge than people older than 55 years.

- People with a high level of **education** (8.41), and people who are still studying (7.97) outscore people who finished their education by the age of 15 years (5.55).

Figure 2.6: **How many knowledge questions were answered correctly in Germany (East) and in Portugal, 1992, in per cent**



· People with a higher **income** (income scale ++: 8.06) answer correctly more often than people with a lower income (income scale --: 5.83).

· **Opinion leaders** (7.81) tend to give more correct answers than opinion followers (5.68).

· People who regulary follow the news in the **media** (7.25) have better results than people who hardly watch TV, listen to the radio or read newspapers (6.05).
· People who consider themselves as **politically** left (7.35) score better than the political center (6.87) or the right wing (6.98).

· The **European social grade** is almost as discriminating as eduction and income of the respondent (grade A (high): 8.16; grade E3 (low): 4.78).

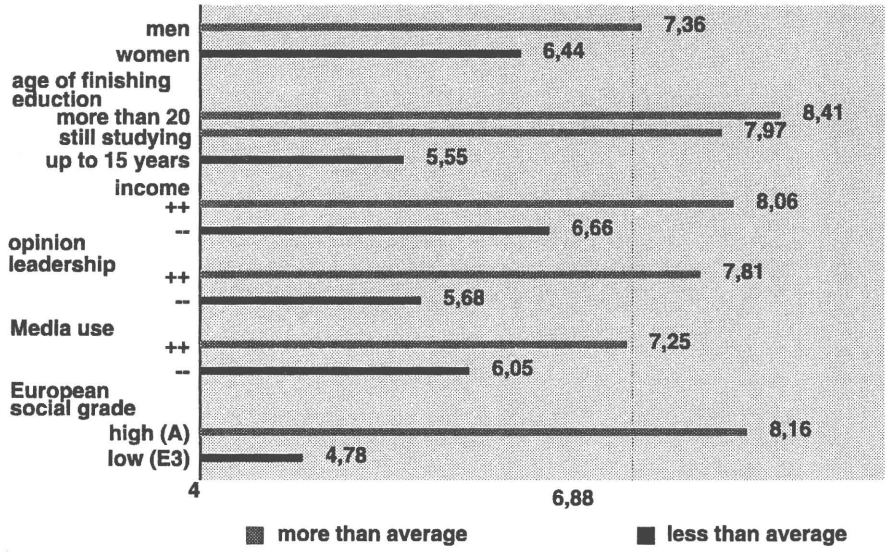
A selection of main socio-demographic results is shown in figure g. To emphasize the differences between the socio-demographic groups, the axis in figure 2.7 ranges from 4 to 9 correctly given answers.
In the following chapters, we will work with a new variable, based on the number of correctly ansered knowledge statements and questions.

· People who answered correctly for up to five knowledge statements and questions - these are 29 per cent of the EC citizens - are people with a **poor scientific knowledge**.

· People who answered correctly for six to eight knowledge statements and questions - these are 42 per cent of the EC citizens - are people with an **average scientific knowledge**.

· People who answered correctly for nine and more knowledge statements and questions - these are 28 per cent of the EC citizens - are people with a **good scientific knowledge**.

Figure 2.7: **How many knowledge questions were answered correctly by the different socio-demographic groups, EC12, 1992, in per cent**



2.4. Understanding the methodical processes of science and technoloy

The third step to measure the knowledge of science and technology is testing the understanding of different aspects of scientific methods. The understanding of three methods was checked by three questions: the experimental method, the use of the control group and the concept of probability.

2.4.1. The experimental method

Question: Suppose a machine is breaking down repeatedly. It is suspected that the material from which a particular part is made, is responsible for the breakdowns. There are different ways of investigating this problem. Which one do you think scientists would be most likely to use? (split ballot)

The split ballot method was applied for this question. Half of respondents got the following possible answer options (version 1): (1) «only talk to the machine operators and get their opinion», (2) «only use the scientific knowledge to decide how good the material is» and (3) the correct answer: «make the same parts from a different materials, put them in the machine, one after the other, and then compare what happens in each case», which describes the experimental approach. Those respondents could give an answer once. The other half got the following answer options (version 2): (1) «talk to the machine operators and get their opinion», (2) «use the scientific knowledge to decide how good the material is» and (3) the correct answer, which was not changed. After their first answer, they were asked «And which next?».

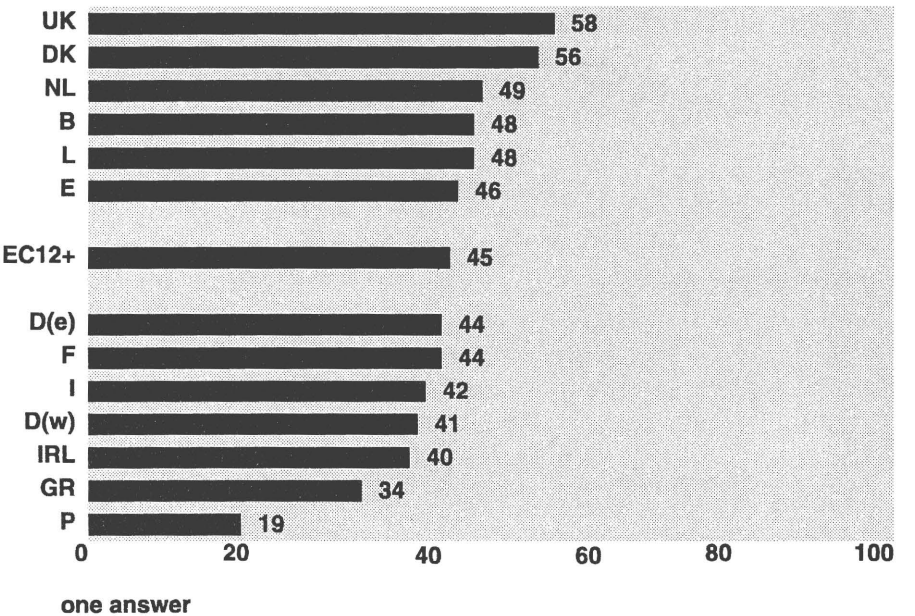
Table 2.4: The experimental method, answer possiblities of the split ballot groups, EC12, 1992, in per cent

answers	version 1	version 2	
	only one possibiliy	first answer	second answer
(only) talk to the machine operators and get their opinion	22	33	20
(only) use their own scientific knowledge to decide how good the material is	22	28	34
make the same part from a different material, put them in the machine, one after the other, and then compare what happens in each case	45	31	31
don't know/no answer	11	8	15
TOTAL	100	100	100

When only given the possibility of one answer and the word «only» in the first two answer categories, almost half of respondents opt for the experimental method (45 per cent), while the other possible answers are favoured by 22 per cent of respondents each. If a second answer possibility is given, about a third of respondents in first instance decides for each answer category, while almost the same distribution is found for the second answer (table 2.4). Since the version in which the respondent is given only one possibilty seems to provide a more precise picture, we will base our analysis on it.

As we have seen earlier in the chapter the percentage of correct answers, for knowledge statements and questions, changed between 1989 and 1992 only when the wording of the question was altered. For the particular question under study here, a comparison with the results of the 1989 survey is particulary difficult because not only the wording of the question, but the differenting answer possibilities have in the meantime been rephrased. But it is clear that the rephrased and more comprehensible version in the present survey leads to a higher percentage of correct answers.

Figure 2.8: The experimental method, only one answer possible, correct answer, EC12, 1992, in per cent



The **country-by-country** results for the correct answer given vary considerably: from 58 per cent in the United Kingdom to 19 per cent in Portugal (figure 2.8). The United Kingdom, Denmark and the Netherlands end up high in the country comparison, while Portugal, Greece and Ireland end up at the bottom.

As to the **socio-demographic groups**, the variables which make a difference are education, income and opinion leadership. People who finished their education after the age of 20 (59 per cent) and people who are still studying (52 per cent) give the correct answer considerably more often, while people who finished their eductaion by the age of 15 years (36 per cent) tend to give the correct answer less often, and 17 per cent of them answer «don't know». The same is true for income: people with a higher income (income scale ++: 56 per cent) have a better understanding of the use of the experiment than people with a lower income (income scale --: 37 per cent). Since the European social grade is related to these two variables, a similar observation can be made for that variable as well. More opinion leaders (51 per cent) than opinion followers (33 per cent) give correct answers.

2.4.2. The control group

Question: Let us imagine that two scientists want to know if a certain drug is effective against high blood pressure. (A) The first scientist wants to give the drug to 1,000 people with high blood pressure and see how many of them experience lower blood pressure levels. (B) The second scientist wants to give this drug to 500 people with high blood pressure, and not give this drug to another 500 people with high blood pressure, and see how many in both groups experience lower blood pressure levels. In your opinion, which is the better way to test this drug?

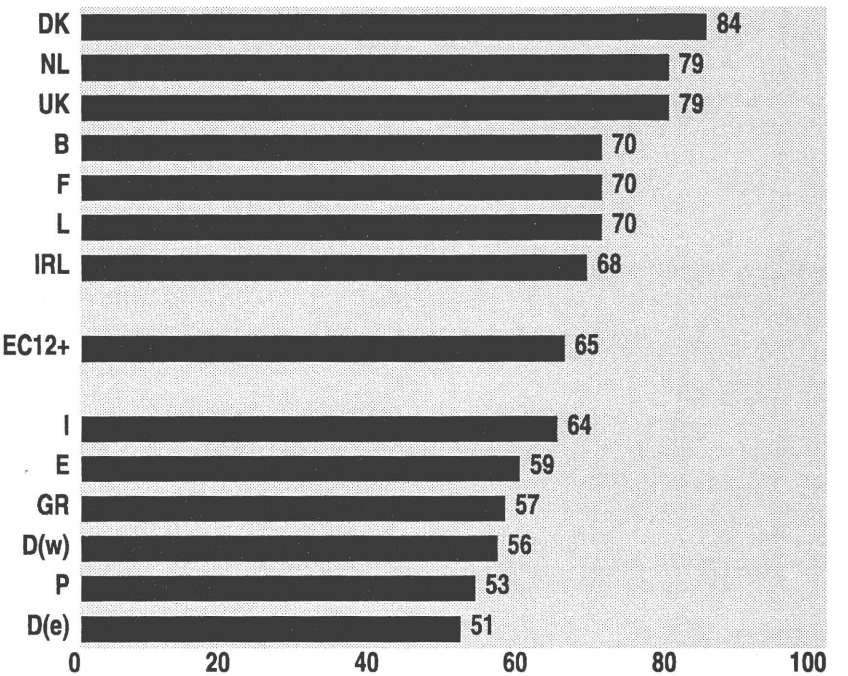
Table 2.5: The control group, EC12, 1992

answers	per cent
first scientist - all 1000 get the drug	21
second scientist - 500 get drug, 500 don't get drug	65
don't know/no answer	14
TOTAL	100

A majority of Europeans decide for the correct answer (65 per cent) (table 2.5). The **country results** vary from 84 per cent of correct answers in Denmark to 51 per cent in Germany (East). Again Denmark, the Netherlands and the United Kingdom are the countries in which most people decide for the correct answer. For this question both parts of Germany and Portugal score relatively low (figure 2.9).

Among the **socio-demographic** variables, education discriminates the most. People who are still studying (77 per cent) score better than all other socio-demographic groups. Roughly seven percentage points above the EC average of 65 per cent score: people with a higher level of education, people between the ages of 15 and 24 years people with a higher income and opinion leaders. About 7 percentage points below the EC average score: people who finished their education by the age of 15 years, people older than 55 years, people with a lower income and opinion followers, which is remarkable given the fact that Germany East scored highest for the knowledge statements.

Figure 2.9: The control group, correct answer, EC12, 1992, in per cent



2.4.3. The probability

Question: Suppose doctors tell a couple that their genetic make-up means that they've got a one in four chance of having a child with an inherited illness. Does this mean that ...

Table 2.6: The probability, EC12, 1992, in per cent

answers	
if they have only three children, none will have the illness	3
if their first child has the illness, the next three will not	6
each of the couples' children has the same risk of suffering from the illness	71
if their first three children are healthy, the fourth will have the illness	6
don't know/no answer	14
TOTAL	100

EC-wide, almost three out of every four citizens (71 per cent) understand the concept of probability as presented in the question. The **country-by-country** comparison shows that in Germany (West) and the Netherlands (both 79 per cent), as well as in Denmark (76 per cent) most people give correct answers. Correct answers were given least often in Portugal (45 per cent), in Greece (61 per cent) and in Spain (63 per cent) (figure 2.10).

Above the EC average score: people with a high level of education (82 per cent), people with a high income (84 per cent), the higher European social grades (grade A: 84 per cent) and opinion leaders (78 per cent). Below the EC average score: people older than 55 years (60 per cent), people who finished their education by the age of 15 years (59 per cent), people with a lower income (61 per cent), opinion followers (58 per cent), people who hardly follow the news (59 per cent) and people who belong to the lower European social grades (grade E3: 46 per cent).

Figure 2.10: The probability, correct answer, EC12, 1992, in per cent

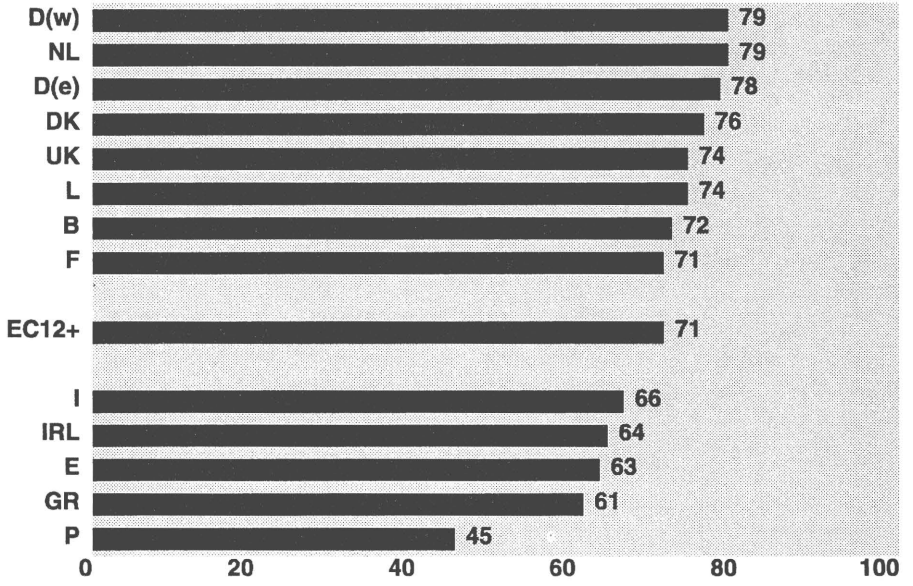
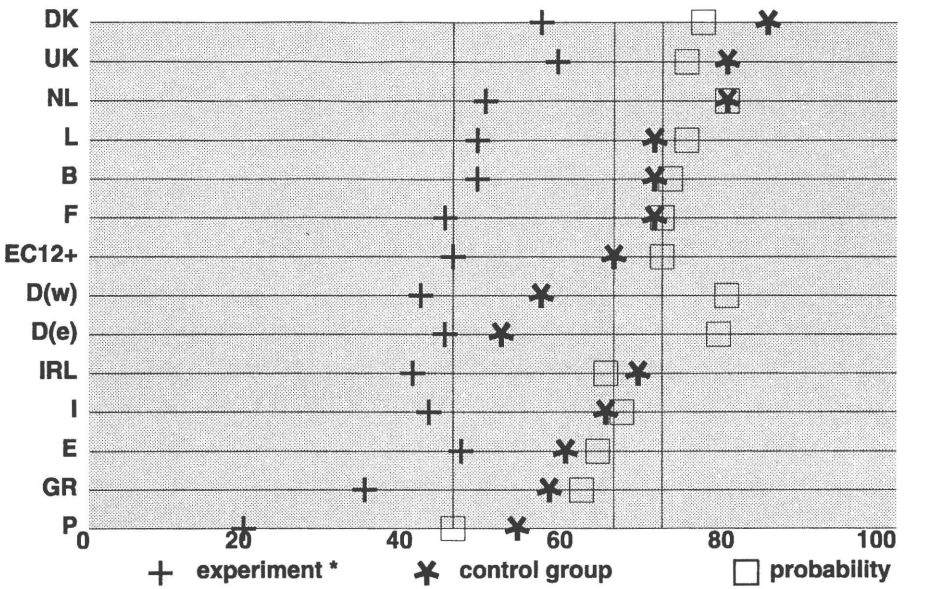


Figure 2.11 is included to give an impression of how many correct answers were given in the various Member States to all three questions concerning scientific methods. Each of the three lines are representing the EC average for a method question: 45 per cent for the experimental method, 65 per cent for the control group and 71 per cent for the probability.

Figure 2.11: The experimental method, the control group and the probability, correct answers, EC12, 1992, in per cent



* one answer

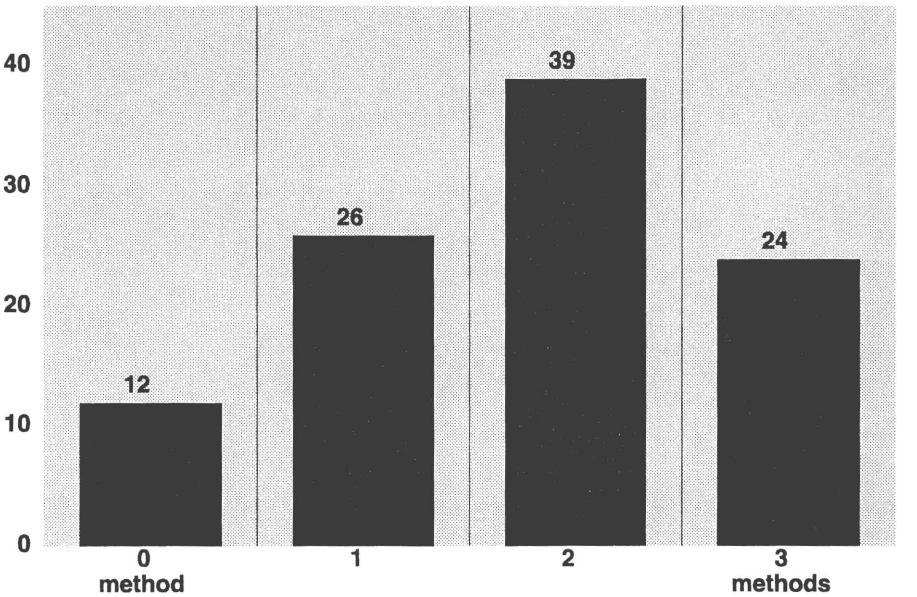
2.5. Country-by-country differences and socio-economic characteristics of the understanding public (based on the number of correct answers to the questions on scientific methods)

For the 12 knowledge statements, we have applied a procedure which takes into account the overall number of correctly given answers. The same procedure is now applied to the questions concerning the three scientific methods. For the question on the experimental method two version were asked ((1) only one answer possible, (2) two answers possible). For the above described analysis the following answers were taken into account: the correct answer for version (1) and the first answer if correct of version (2). [1]

About a quarter of Europeans give three correct answers, 39 per cent give two correct answers, 26 per cent give one correct answer and 12 per cent could not answer any of the questions correctly (figure 2.12).

[1] It was checked in how far the correct results of the two versions would change the result of this analysis. No matter which version was taken into account the final results hardly changed.

Figure 2.12: Number of correctly given answers for the three questions on the scientific methods, EC12+, 1992, in per cent



Individuals providing three correct answers are found most often in Denmark (37 per cent), in the United Kingdom (36 per cent), in the Netherlands (32 per cent) and in Luxembourg (28 per cent). Those without any correct answers are most often found in Portugal (26 per cent), Greece (22 per cent), Spain (18 per cent) and Ireland (16 per cent).

For the **socio-demographic** groups, a similar pattern to that described for the 12 knowledge statements is found in this context:

Compared to the EC average of 24 per cent, three correct answers were given considerably more often by:

- people with a high level of education (32 per cent),
- people who are still studying (32 per cent),
- people with a high income (income scale ++: 31 per cent),
- high European social (grade A: 29 per cent and grade B: 32 per cent).

Compared to the EC average of 12 per cent, zero correct answers were more often given by:

- people older than 55 years (18 per cent),
- people who finished their education by the age of 15 years (19 per cent),
- people with a lower income (income scale --: 18 per cent),
- opinion followers (opinion leadership index --: 20 per cent),
- low European social grade (grade E2: 18 per cent and grade E3: 29 per cent)

2.6. Comparison of the factual knowledge and the knowledge about methods

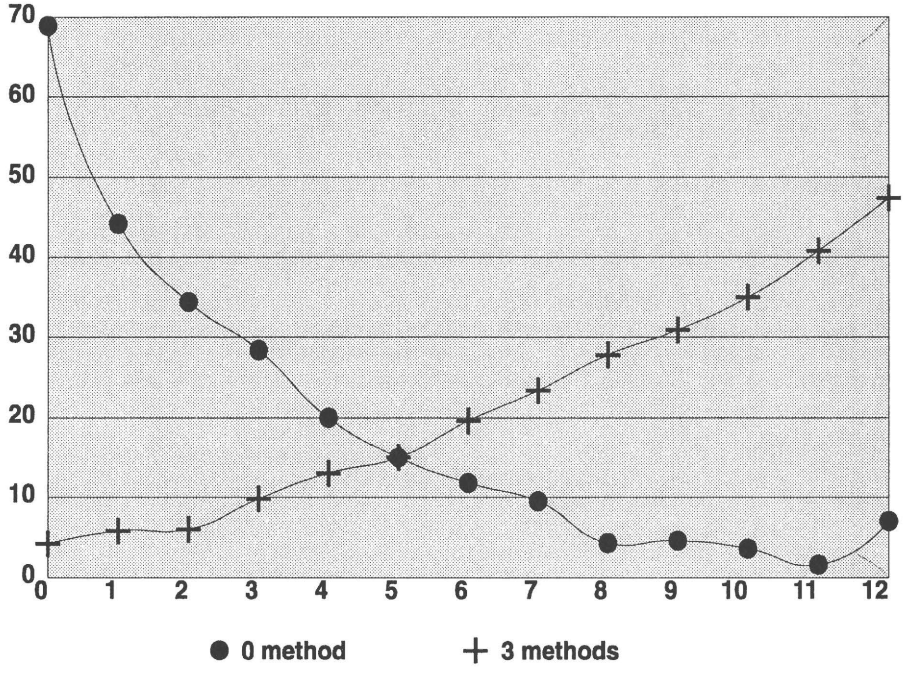
In chapter 2.3. and chapter 2.5. we discuss the level of knowledge of science and technology and the understanding of scientific methods. As a further step both indexes were crosstabulated. This crosstabulation shows that there is a high degree of overlap between the people who know about scientific discoveries and people who understand the aspects of scientific methods (table 2.7). For example, of the people who answer 12 knowledge statements correctly, 47 per cent give three correct answers concerning the scientific methods (experimental method, control group and probability).

Table 2.7: Number of correctly given answers for the 12 knowledge statements by number of correct answers to the three questions on the scientific methods, EC12+, 1992, in per cent

correct answers	0	1	2	3	4	5	6	7	8	9	10	11	12
0 method	69	44	34	28	20	15	12	10	4	5	4	2	1
1 method	20	30	37	32	38	31	29	27	25	18	18	17	11
2 methods	7	20	23	29	29	39	40	40	43	47	43	41	41
3 methods	4	6	6	10	13	15	20	23	28	31	35	41	47
Total	100	100	100	99	100	100	101	100	100	101	100	101	100

The most important trend of this analysis is shown in figure 2.13. The figure contrasts people who answered none of the method questions correctly with people who answered all three of these questions correctly. **Reading example**: Out of the people who do not answer correctly to any of the knowledge statements correctly, 69 per cent do not answer coorectly for any of the method questions either. Of the people who answer all 12 knowledge statements correctly, 47 per cent answerall three method questions correctly as well.

Figure 2.13: **Number of correctly given answers for the 12 knowledge statements by respondents answering correctly to none of the method questions and those answering correctly to all three method questions, EC12, 1992, in per cent**



Since the country-by-country comparison and the comparison of the socio-demographic variables of the further above described indexes (scientific knowledge and scientific methods) showed an overlap as well, it is most probable that the pattern described in chapter 2.3. and 2.5. would match here too. Further analysis, e.g. a combined index of the scientific knowledge and the scientific methods would make a country-by-country analysis or analysis of the socio-demographic groups possible.

2.7. Special case: Environmental problems

Introduction

In recent years, people have started taking environment damage caused by the high degree of industrialization and consumption to heart. According to the EUROBAROMETER Spring 1992 survey, 85 per cent of the European population believe that protecting the environment and fighting pollution are immediate and urgent problems. [1] Compared with the 1988 EUROBAROMETER survey, this feeling of urgency has by 1992 increased throughout the Community (with the exception of Luxembourg). Concerns and complaints about the environment seem to be directed more at general and important risks (even global) than at daily nuisances. This is borne out by the observation that the closer one gets to the individual's own environment, the fewer number of concerns and complaints tend to be expressed.

The following chapter is devoted to the estimated and the actual knowledge Europeans have about the environment, and is based on the Autumn 1992 survey. The most important findings are listed below:

· The explored environmental themes were: acid rain, air pollution, global warming, the hole in the ozone layer and the greenhouse effect. For all five themes, Europeans have at least a general sense of what the problem is about, while in the case of «air pollution», more than half of Europeans have a clear understanding of the issue.

· In general, the more people are convinced that they are well informed about environmental pollution, and the more they consider themselves to be interested in that same field, the higher they estimate their understanding of the five themes under study here.

· Most Europeans associate the hole in the ozone layer with the poles, being the South Pole, the North Pole or both of them. The correct answer was given by 20 per cent (over the Antarctic) resp. 11 per cent (over the South pole). Almost exactly as many people say that the hole in the ozone layer is located over the North Pole (19 per cent) resp. over the Arctic (10 per cent). Only few respondents gave other incorrect answers. One third of Europeans «don't know» where the hole in the ozone layer is located.

· Almost all Europeans see the connection between acid rain and damaged forests. More than 95 per cent of the citizens of the Netherlands, Denmark, Germany (West) and the United Kingdom answer correctly. Even in the countries with the fewest correct answers, they still represent a large majority: Greece (68 per cent), Portugal (75 per cent), Spain (78 per cent) and Italy (85 per cent).

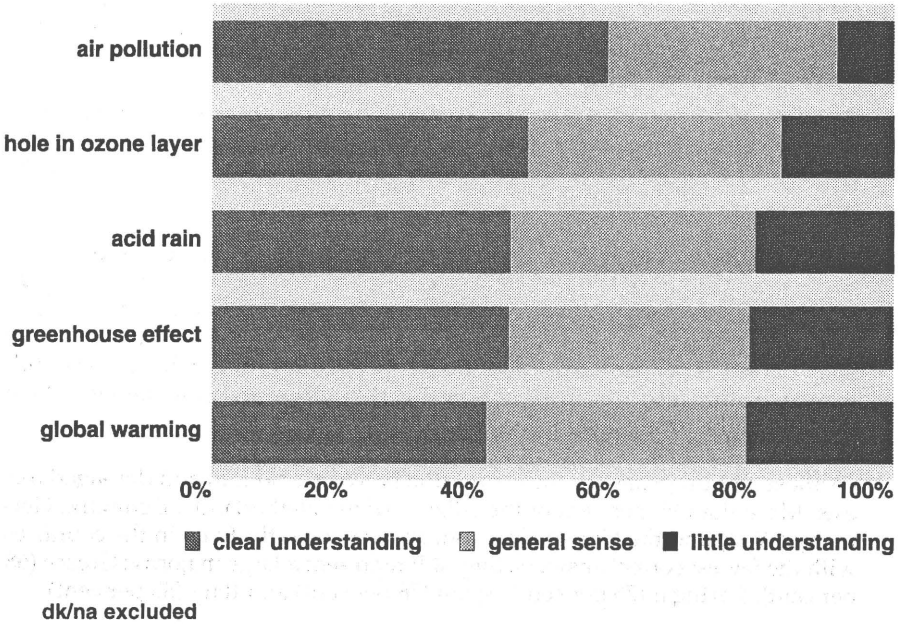
2.7.1. The self-estimated knowledge of environmental problems

The 1992 survey on «science and technology» contained the following question, designed to measure EC citizens' self-estimated knowledge about recent environmental problems:

Question: In recent years, newspapers and TV have sometimes talked about the following issues. For each of the following, could you tell me whether you have a clear understanding of what it means, a general sense of what it means or little understanding of what it means?

The explored environmental themes were: acid rain, air pollution, global warming, the hole in the ozone layer and the greenhouse effect. Figure a shows that for all five themes, Europeans have at least a general sense of what the problem is about, while in the case of «air pollution», more than half of Europeans have a clear understanding of the issue (57 per cent). Where the «hole in the ozone layer» (16 per cent), «acid rain» (19 per cent), «greenhouse effect» (19 per cent) and «global warming» (20 per cent) are concerned, about one in five interviewees has only «little understanding» of the issue.

Figure 2.14: Self-estimated knowledge of environmental problems, EC12+, 1992



In order to arrive at a clear country-by-country picture, we have ranked the results for all five issues according to the percentage of citizens claiming to have a «clear understanding». Two remarkable results stand out at once: for each of the five issues, the Dutch show the highest number of people who say that they have a clear understanding, while the Portuguese show the lowest number. As far as the other countries are concerned, Denmark (four times), Germany (West) (four times) and Italy (tree times) are found among the top four countries. Ireland, Spain, Greece and, as above, Portugal are consistently found at the bottom of the ranking. In Greece, Spain and Portugal, the number of people who «don't know» about any of the five subjects is rather high.

These findings confirm the results of chapter 1, which takes a closer look at general subjects of interest, like sports, politics and environmental pollution. One of the findings there is that the self-estimated level of informedness about «environmental pollution» is high in Luxembourg, the Netherlands, Italy, Germany (West) and Denmark with roughly one third of citizens claiming to be very well informed. In Ireland, Portugal and Spain about one third of citizens estimate that their knowledge of «environmental pollution» stands at a poor level.

A fairly high degree of consistency is found between people's self-estimated level of informedness about «environmental pollution» in general, and their self-estimated knowledge of the five specific themes studied in this chapter. There is one exception, however. In Spain, 29 per cent of respondents consider themselves to be well informed about environmental pollution in general, an assessment which is not confirmed by their relatively poor level of knowledge of the five specific environmental themes.

For all five issues, a definite **socio-demographic** pattern becomes apparent:

- More **men than women** estimate that they have a «clear understanding» of the five issues.
- People with a higher level of **education** more often think that their knowledge of environmental problems is better.
- The higher the respondent's **income**, the higher their self-estimated knowledge tends to be.
- **Opinion leaders** estimate more often than people who are no opinion leaders that they have a «clear understanding».
- The higher people rank on the **European social grade**, the better they seem to be informed.
- People who use **media** often tend to think that they are better informed than people who do not watch television, listen to the radio or read newspaper on a regular basis (since the question explicitely refers to TV and newspapers - «In recent years, newspapers and TV have sometimes talked about ...», this result is not very surprising).
- **People aged over 55** years tend to have «little understanding» only, or «don't know» about the five subjects.

Taking a closer look at the people who think of themselves as «informed» about «environmental pollution» in general (see chapter 1) as well as at people who consider themselves to be interested in «environmental pollution» (see chapter 1), we find a clear correlation to the self-estimated knowledge for each of the environmental issues - acid rain, air pollution, global warming, the hole in the ozone layer and the greenhouse effect. In general, the more people are convinced that they are well informed about environmental pollution, and the more they consider themselves to be interested in that same field, the higher they estimate their understanding of the five themes under study here. To illustrate this phenomenom we have described the correlation between interest in and knowledge about environmental pollution on the one hand and Europeans' self-estimated understanding of the issue «global warming» on the other, in the following two tables.

Table 2.8: Self-estimated knowledge about «global warming» according to the self-estimated level of information about «environmental pollution», EC12+, 1992

self-estimated understanding of «global warming»	self-estimated level of information about «environmental pollution»			
	very well	moderatly well	poorly	don't know
clear understanding	55	35	16	10
general sense	30	38	32	27
little understanding	12	20	32	20
don't know	3	6	19	44
TOTAL	100	99	99	101

Reading example

Among the people who think themselves very well informed about «environmental pollution» in general, over a half (55 per cent) say that they have a «clear understanding» of the issue of «global warming». Among the people stating that they are poorly informed about «environmental pollution», just 16 per cent do so, while one third say that they have a «general sense» of what «global warming» means and another third say that they have only «little understanding».

Table 2.9: **Self-estimated knowledge about «global warming» and the interest in «environmental pollution», EC12+, 1992**

self-estimated understanding of «global warming»	interest in «environmental pollution»			
	very interested	moderately interested	not at all interested	don't know
clear understanding	47	27	16	6
general sense	34	39	28	13
little understanding	15	25	36	15
don't know	4	9	20	67
TOTAL	100	100	100	101

Reading example

Almost half the people who are very interested in «environmental pollution» in general answer that they have a clear understanding of «global warming» (47 per cent), while more than a third of the people who are «not at all interested» in «environmental pollution» have only «little understanding» about «global warming» (36 per cent).

2.7.2. The actual knowledge about environmental problems

Two questions in the survey explore Europeans' actual knowledge about recent environmental problems. The **first of these questions** asked about the hole in the ozone layer:

Question: Could you please tell me where you think the hole in the ozone layer is located?

This question was asked in a semi-open manner, meaning that the interviewee could give an answer according to his/her choice and that the interviewer would neither prompt him/her, nor show the precoded list, which contained the possible answers listed in figure 2.15. Several answers were possible.

Most Europeans associate the hole in the ozone layer with the poles, being the South Pole, the North Pole or both of them. The correct answer was given by 20 per cent (over the Antarctic) resp. 11 per cent (over the South pole). Almost exactly as many people say that the hole in the ozone layer is located over the North Pole (19 per cent) resp. over the Arctic (10 per cent). [2] Only few respondents gave other incorrect answers. One third of Europeans «don't know» where the hole in the ozone layer is located (figure 2.15).

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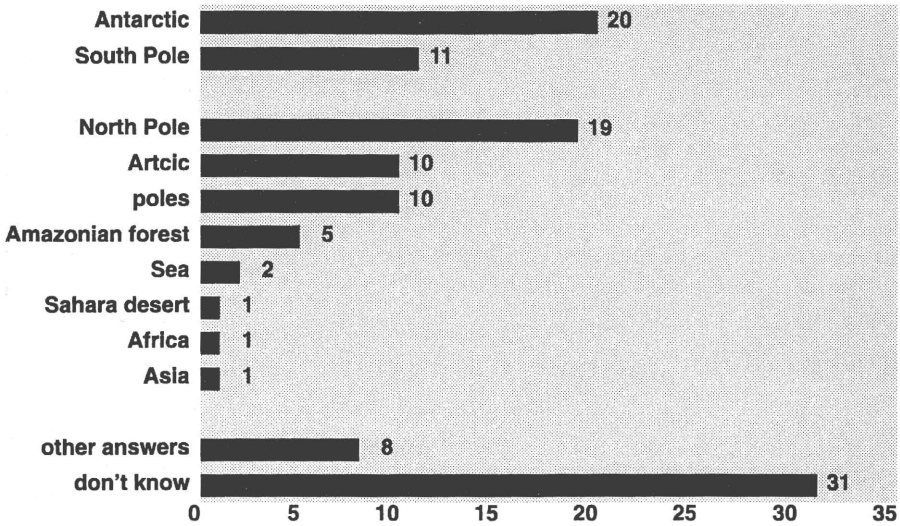
[1] The following figures are findings from the survey conducted in the context of the EUROBAROMETER 37.0. For detailed information see: Commission of the European Community: Europeans and the Environment in 1992, August 1992

[2] Recent publications have revealed that the ozone layer over the North Pole is very thin as well and there could well exist a second hole there.

Figure 2.15: The location of the hole in the ozone layer, EC12, 1992



several answers possible

Since there is almost no overlap between the people who answer «over the Antarctic» and the people who answered «over the South Pole» we can state that 30 per cent of EC-citizens know exactly where the hole in the ozone layer is located. [3]

The results vary a lot between the different **countries**. The correct answer «over the Antarctic» is most often given in Germany (West) (35 per cent), in Spain (31 per cent), in Germany (East) (30 per cent) and in Luxembourg (26 per cent). The other possible correct answer, «over the South Pole», is most popular in Denmark (26 per cent), the Netherlands (20 per cent), Germany (East) (18 per cent) and Belgium (17 per cent).

In Portugal (56 per cent), Greece (46 per cent), Ireland (41 per cent) and France (38 per cent) the answer «don't know» is most often given.

Taking a closer look at the respondents' **socio-economic** profile, we find that the correct answers «over the Antarctic» and «over the South Pole» are most often listed by **better educated people** (27 per cent «over the Antarctic», 17 per cent «over the South Pole», among the people who finished their education when

[3] Since there were several answers possible for this question, some respondents might have answered «Antarctic» as well as «over the South Pole». With the help of a crosstabulation it was made sure that the people who answered both «over the Antarctic» and «over the South Pole» could be explicitly excluded for this analysis.

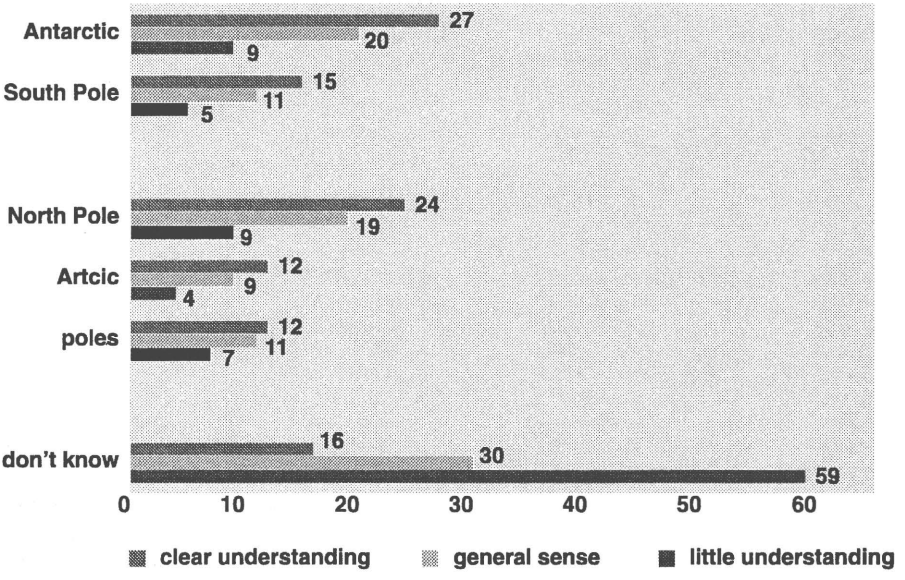
they were older than 20 years), **people, who are still studying** (25 per cent «over the Antarctic», 13 per cent «over the South Pole»), **opinion leaders** (26 per cent «over the Antarctic», 15 per cent «over the South Pole») and **people, who are avid media users** (27 per cent «over the Antarctic», 14 per cent «over the South Pole»). There is an overall tendency, that the higher the **income** is and the higher the ranking on the **European social grade**, the more correct the knowledge about the location of the hole in the ozone layer is.

Women (39 per cent) admit more often than men (22 per cent) that they do not know where the hole in the ozone layer is located. The apparent knowledge lack is also found for people who are **55 years and older** (42 per cent), people who finished their **education** by the age of 15 (45 per cent), people whose **income** is very low (43 per cent) and people from the two last ranks of the **European social grade** (47 resp. 61 per cent).

Knowledge about the hole in the ozone layer seems to depend on the respondents' **media use**: 43 per cent of the quarter of the population who hardly follow the news do not know where the hole in the ozone layer is located. The same is true for **opinion followers** (47 per cent).

Since people were before asked to assess about their own knowledge about the hole in the ozone layer, we can confront people who claim that they have a «clear understanding» about the hole in the ozone layer with people who get «the general sense» of the problem and the people who have only a «little understanding» of the issue. People with a «clear understanding» give more answers to the question where the hole in the ozone layer is located, than the people of the two other groups. This means that they give more correct as well as more incorrect answers (figure 2.16). Both the South Pole and the North Pole dominate the picture for the people who have a «clear understanding» about the hole in the ozone layer and for the people who get «the general sense» of the problem.

Figure 2.16: **The knowledge about the location of the hole in the ozone layer by the level of self-estimated understanding of the «hole in the ozone layer» issue, selection of answers, EC12+, 1992**



The **second question** exploring Europeans' actual knowledge of the recent environmental problems was constructed along the same lines as the question about scientific knowledge.

Question: Could you please tell me if you think the following statements are true or false?

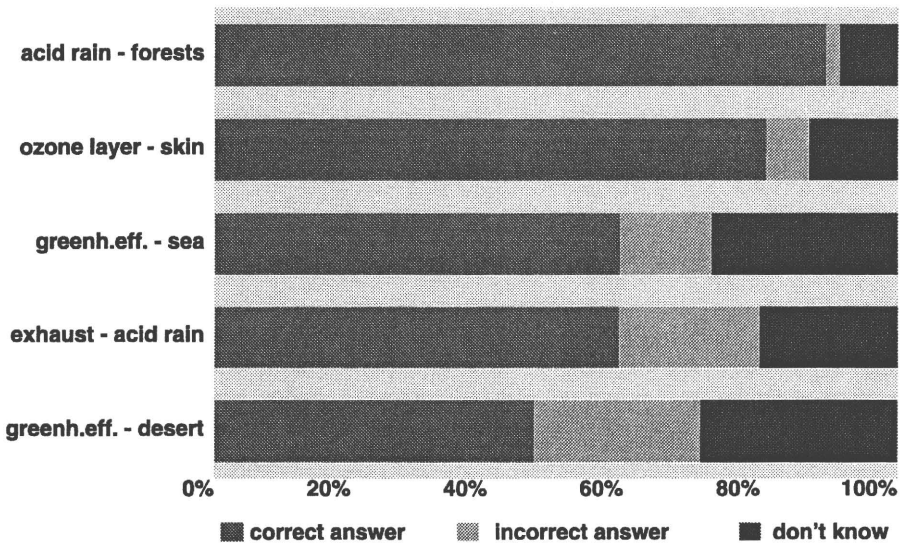
Table 2.10: **Knowledge about five statements concerning environmental problems, EC12+, 1992**

in percent, correct answer bold	true	false	don't know
The hole in the ozone layer can cause skin cancer	81	6	13
The greenhouse effect can reduce the deserts	24	47	29
The greenhouse effect can raise the sea level	59	13	27
Acid rain can cause damage to the forests	90	2	9
Car exhausts have nothing to do with acid rain	20	59	20

EC-wide, it is common knowledge that acid rain can cause damage to the forests (90 per cent give the correct answer). 81 per cent of the people are sure that the hole in the ozone layer resp. the additional radiation are responsible for the increase of skin cancer nowadays. The greenhouse effect and the melting of the ice on the Poles are clearly connected to the rise of the sea level: 60 per cent give a correct answer. Roughly the same percentage of Community citizens know that car exausts are one of the reasons for acid rain (59 per cent). The statement to the effect that the greenhouse effect can reduce the deserts is the only statement with regard to which less than 50 per cent opt for the correct answer (47 per cent), most probaly on account of the ambiguous name «greenhouse effect», which is open for two associations: the warming up of the global atmosphere which causes a reduction of the polar ice, as well as encouragement of the growth of vegetation (greenhouse).

The knowledge of the present and future damage caused by the greenhouse effect seems to be weakest, compared with the other statements: for the two statements about the greenhouse effect around 30 per cent of European could not decide whether it was correct or incorrect (figure 2.17).

Figure 2.17: Statements about the environment, EC12+, 1992



no answer excluded

To get a clear picture of the **country-by country** situation, the percentages of correct answers for all Member States were ranked. Five times, the Dutch rank among the four highest results, the Danish and the British citizens do this four times. Where the lowest ranking Member States are concerned, the results for the question on knowledge of environmental problems confirms the findings at the beginning of the chapter: knowledge of environmental problems is not very wide-spread in Portugal (five times among the lowest scoring four countries), Greece and Spain (both four times among the five lowest scoring countries).

Where the **socio-economic variables** are concerned, the overall results resemble the findings of other questions:

- **Men** tend to give correct answers more than **women**.
- People over **55 years** old know considerably less than all other age groups.
- Knowledge increases with a better **education**.
- The higher the **income**, as well as the higher the ranking on the **European social grade**, the better knowledge of environmental problems tends to be. An inability to formulate an opinion is shown by the sharp increase of the «don't know» answers among people with a lower income and people at the lower end of the social grade.
- **Opinion leaders** are more likely to know more about the risks of environmental pollution. A considerable percentage of opinion followers answer «don't know».
- A similar finding concerns peoples' **media use**. People who often watch TV, listen to the radio or read newspapers tend to be better informed about recent discoveries concerning the environment. People with a less pronounced media use more often cannot decide whether a statement is true or false.

Below, striking observations by country and by socio-demographic groups are summarized for each of the five statements:

Statement: Acid rain can cause damage to the forests

Almost all Europeans see the connection between acid rain and damaged forests. More than 95 per cent of the citizens of the Netherlands, Denmark, Germany (West) and the United Kingdom answer correctly. Even in the countries with the fewest correct answers, they still represent a large majority: Greece (68 per cent), Portugal (75 per cent), Spain (78 per cent) and Italy (85 per cent).

The knowledge about the consequences of acid rain is related to the regular use of TV, radio and newspapers. Where for the Community as a whole, 90 per cent of the citizens give the correct answer, among the people who hardly watch television, listen to the radio or read newspapers only 75 per cent come up with the correct answer, whereas one in five cannot decide whether the statement is true or false. 80 per cent of the people with a low score on the opinion leadership index know the correct answer. Knowledge about acid rain is rather weak amongst people who finished their education before the age of 15 (82 per cent) and among the people who rank low for the income (83 per cent). These results are related to the European social grade: the higher the social grade, the better the knowledge.

Statement: The hole in the ozone layer can cause skin cancer

In Luxembourg (92 per cent) people are most aware of the risk of skin cancer caused by sun rays, followed by Germany (West) (93 per cent) and Denmark (89 per cent). France (67 per cent) has the lowest result of all European countries, while Italy (76 per cent), Portugal and the United Kingdom (both 78 per cent) come closer to the EC average of 81 per cent.

As mentioned in the overall results, people aged over 55 years are not so sure about the effect of the hole in the ozone layer (74 per cent). Opinion leaders outscore the Community average (87 per cent to 81 per cent) as to knowledge about the hole in the ozone layer and its relation to skin cancer. On the other hand, opinion followers give the correct answer less often (72 per cent), and about one in five of them cannot decide on an answer at all (answer: «dont know»). Looking at the media use, the same phenomenon can be detected: 87 per cent of the regular media users give a correct answer, while 68 per cent of the people who rarely watch TV, listen to the radio or read newspapers do so.

Statement: The greenhouse effect can raise the sea level

With reagard to this statement, a clear North-South division can be detected within the Community. The correct answer was most often given in the Netherlands (77 per cent), Germany (West) (76 per cent), Denmark and the United Kingdom (both 70 per cent). In Greece (34 per cent), Portugal (44 per cent), Italy (45 per cent) and Spain (48 per cent) over 50 per cent of citizens give either an incorrect answer or no answer at all (answer: «don't know»).

Regarding socio-economic variables four strong tendencies can be found. (1) Two thirds of citizens between the ages of 25-54 years give a correct answer for this statement. (2) 72 per cent of the people who finished their education at the age of 20 or older know about the consequences of the greenhouse effect: that is a difference of 17 points to the EC average. (3) People enjoying a high income (income scale ++) show the same result. (4) Opinion leaders outperform the EC average by 17 points, and the opinion followers by 26 points.

Statement: Car exhausts have nothing to do with acid rain

Throughout the EC, a clear majority (59 per cent) give a correct answer to this negatively formulated statement. The results in the Netherlands was very high (81 per cent), followed by Germany (West) (71 per cent), Luxembourg and the United Kingdom (both 67 per cent). As is in the case with the other statements, Portugal (35 per cent), Spain (40 per cent) and Greece (41 per cent) are found at the bottom of the country ranking.
The most distinguishing socio-demographic variable is the opinion leadership index: the difference between the result of opinion leaders (70 per cent) and followers (46 per cent) is 24 points, while a third of the followers cannot decide whether the statement is true or false (30 per cent). The education discriminates

significantly as well: people who finished their education by the age of 15 years (48 per cent) are less likely to give the correct answer than people who are still studying (70 per cent) resp. people who finished their education after the age of 20 (69 per cent). A similar effect on the responses comes from income: the higher the income, the more likely are correct answers (income scale ++: 68 per cent; income scale --: 53 per cent). The results described above are related to the European social grade: European social grade A (high): 69 per cent; European social grade E3 (low): 36 per cent correct answers as well as 43 per cent of «don't know»).

Statement: The greenhouse effect can reduce the deserts

A majority of citizens in the Netherlands (63 per cent), Denmark (63 per cent), the United Kingdom (52 per cent) and Germany (East) (51 per cent) opt for the correct answer. In Greece, two thirds of citizens do not have an opinion about the effect the greenhouse effect may have on deserts («don't know»: 60 per cent), while in Spain (43 per cent) and Portugal (42 per cent) over two out of every five citizens cannot decide whether the statement is true or false.

The socio-economic variables point a picture of the inevitable interdependences between age, education and income. Young people know more of this matter than older people (15-24 years: 57 per cent, 25-39 years: 54 per cent, 55 and older: 32 per cent). People with a good education (age of finishing education over 20 years: 65 per cent) or people who are still studying (63 per cent) do better than the less educated people (age of finishing education 15 years: 35 per cent). Higher incomes come with more correct answers (income scale ++: 61 per cent, income scale --: 37 per cent). Significant differences are found between men (55 per cent) and women (40 per cent), while people who are politically left (54 per cent) know more about the greenhouse effect than the Community average (47 per cent).

Chapter 3

3. Attitudes toward science and technology

Introduction

In our democratic societies, public policies should be rooted in the consent of a large proportion of the population. In order to identify European citizens' position with regard to a scientific and technological research policy, it is useful to take a closer look at how exactly Europeans perceive these two subjects.

In order to do this, European citizens were presented with two sets of statements relating to science and technology, the first set being more of a general nature, and the second more of a practical nature. They were also asked which profession they respected most, one of the options being "scientific researchers".

The main results of this chapter are summarized below.

· It transpires that most EC citizens are convinced of the beneficial results of science and technology, without necessarily counting on any miracles or harbouring any unrealistic expectations. A result that is bound to have a bearing on the political decision making at any level, is that almost three out of every four Community citizens (73%) agree that "even if it brings no immediate benefits, scientific research which advances the frontiers of knowledge is necessary and should be supported by the government"

· Scientific and technological research are seen as playing a vital role in solving environmental problems, as well as holding the promise of both improved working conditions and better opportunities for future generations. Support for this positive view of science and technology tends to be higher than average among Europeans with a high level of income and high level of media use, as well as among those with a positive European attitude.

· Europeans entertaining unrealistic expectations as to what science and technology can do tend to be men, to have a relatively low income, not to be opinion leaders, to belong politically to the right, and to show a positive European attitude.

· This overall rather positive outlook on science and technology does not mean that Europeans are blind to the dangers linked to a relatively small group of priviliged people possessing the bulk of information. They are also not prepared to sacrifice just anything for the sake of scientific progress, as their disapproval of animal testing shows.

· Between 1989 and 1992, the number of people agreeing that in daily life it is not important to know about science, has gone down from 37% to 33%. This average is the outcome of a decrease in most Member States, the most spectacular being a 20% drop in Spain.

· The positive image research enjoys among European citizens is also demonstrated by their agreement with the statement that "the benefits of science are greater than any harmful effects it may have". Over half (52%) of Community citizens go along with this, as opposed to only 13% who don't. This belief in the beneficial nature of science is especially held by men, older EC citizens, people with a high income, opinion leaders, people with a positive European attitude and regular media users.

· Europeans are very much convinced of the role science and technology play in industrial development and rendering our economy more competitive. Agreement is found particularly among men, opinion leaders, people with a high income, people with a positive European attitude, the politically left, as well as among regular media users.

· Compared with 1989, significantly less EC citizens think that computers and factory automation will ultimately create jobs. Disillusionment is found throughout the Community, with every Member State showing a drop compared with three years ago. Percentages range between -2% in Spain and -20% in Greece.

· Scientific researchers form the Community's second-most respected professional category, after medical doctors. Respect for scientific researchers increases along with the respondents' level of education, income and opinion leadership index. Researchers are even more popular among those people with a good scientific knowledge.

· People with a good scientific knowledge are even more convinced than the average EC citizen (80 per cent, compared with 76) that science and technology are making our lives healthier, easier and more comfortable. They also tend to be more sceptical than the average Community citizen where the belief is concerned that "thanks to scientific and technological advances, the Earth's natural resources will be inexhaustible" and where the opinion is voiced that "technological progress will make possible higher levels of consumption and, at the same time, an unpolluted environment".

· People with a poor scientific knowledge seem to overall be less optimistic about science and technology, but mainly on account of the high number of "don't knows" among their ranks. Depending on the issue about which their opinion is asked, this percentage can even reach 55%.

3.1. The importance of science and technology in general terms

European citizens were confronted with two sets of statements relating to science and technology, and asked to which extent they agreed or disagreed with the voiced opinions. The overall results for the first set, made up of statements of a mainly general nature, are contained in the overview table 3.1 (following page).

Let us now look more closely at the various statements and how they are received by the respondents. Four of these statements were also presented to Europeans in 1989, and all significant changes that have in the meantime occurred will be mentioned in the text.

a. science and technology and their impact

Over three out of every four EC citizens agree (either strongly or to some extent) with the statement that **"science and technology are making our lives healthier, easier and more comfortable"** (76%). EC-wide, just 8% of the people disagree (either strongly or to some extent) with this statement.

In East Germany (83%) and the United Kingdom (80%) respondents are particularly convinced of the wholesome results of science and technology in general. A mere 2% of East Germans disagree with the statement. Men (81%) agree more with this point of view than women do (71%). Support tends to be higher than average among Europeans with a high level of income and high level of media use, as well as among those with a positive European attitude.

Compared with 1989, the situation has not changed very much. Then, 73% of Community citizens agreed when the same statement was presented to them. In three Member States, however, a strong increase in agreement over those three years is noticeable: Denmark (+10 points to the level of 78%), Italy (+7 points to 78%) and Spain (+7 points to 74%). In Greece, on the other hand, the number of people having an overall positive view of science has gone down by 9% (from 84% in 1989 to 75%).

Table 3.1: The importance of science and technology, EC12, 1992, in per cent

statements [1]	strong.agree	agree	neither/nor	disagr.	strong. disagr.	don't know
Science and technology are making our lives healthier, easier and more comfortable.	26	50	13	6	2	3
Thanks to scientific and technological advances, the Earth's natural resources will be inexhaustible.	6	17	16	26	27	8
We depend too much on science and not enough on faith.	16	26	22	17	14	6
Scientific and technologicalresearch cannot play an important role in protecting the environment and repairing it.	7	14	12	28	32	7
Scientists should be allowed to do research that causes pain and injury to animals like dogs and chimpanzees if itcan produce new information about serious human health problems.	9	19	14	19	35	4
Technological progress will make possible higher levels of consumption and, at the same time, an unpolluted environment.	7	24	22	21	15	11
Because of their knowledge, scientific researchers have a power that makes them dangerous.	24	35	14	12	8	7
The application of science and new technology, will make work more interesting	16	38	21	11	5	8
For me, in my daily life, it is not important to know about science.	13	20	15	27	21	4
Most scientists want to work on things that will make life better for the average person.	20	41	17	12	4	6
Science makes our way of life change too fast.	20	35	19	16	6	5
Thanks to science and technology, there will be more opportunities for the future generations.	24	39	17	8	5	7

[1] The following wording was used in the questionnaire: strong. agree = strongly agree; agree = agree to some extent; neither/nor = neither agree nor disagree; disagr. = disagree to some extent; strong. disagr. = strongly disagree.

This general and widespread support for science and technology, however, does not mean that Europeans foster irrational expectations as to what can actually be achieved. Only 23% of EC citizens agree that **"thanks to scientific and technological advances, the Earth's natural resources will be inexhaustible"**. Stressing their awareness of the limits inherent in scientific and technological advances, a clear majority (53%) of Europeans disagree.

The Irish are most realistic (29% agree), and the Danes and the French most pessimistic (70% and 67% respectively disagree). Where socio-economic variables are concerned, citizens with a high level of education, a high income, who are opinion leaders and belong to the political left, all tend to disagree more than average with the statement that science and technology will render our natural resources inexhaustible.

A less outspoken degree of scepticism is expressed with regard to the statement that **"technological progress will make possible higher levels of consumption and, at the same time, an unpolluted environment"**.

Barely one out of every three Community citizens shares this opinion (31%), but disagreement tends to be less outspoken than with regard to the previous item, adding up to 36% of Europeans. Most sceptical appear to be the people of Luxembourg. Over half of them (54%) do not believe that higher levels of consumption and an unpolluted environment are compatible, as opposed to only one in every five (20%) who believe so. Those most likely to do so tend to be men, to have a relatively low income, not to be opinion leaders, to be politically of the right, and to show a positive European attitude.

An indication that Community citizens' expectations are not too leaning toward the negative too much can be found in the fact that only 21% agree with the statement that **"scientific and technological research cannot play an important role in protecting the environment and repairing it"**. A solid 60% of Europeans feel that research can play a significant role in the environmental field. Most sceptics are found in Ireland (32%), the United Kingdom (26%) and Greece (25%). The Danes (75%) outscore all other citizens in their positive assessment of the potential of research.

Taking a closer look at the socio-economic characteristics of the sceptics, we find that they tend to be women rather than men, old rather than young, poorly educated rather than well educated, having a low income rather than enjoying a high one, and not be opinion leaders or avid media users. Overall, Europeans are much more ready to accept two other positive result of science and technology.

First, over half (54%) agree that **"the application of science and technology will make work more interesting"**. Less than one out of every five Community citizens (16%) are not counting on any future benefits around the workplace.
In three Member States, a significant proportion of the people strongly agrees with the above statement: East Germany (30%), Greece (29%) and Luxembourg (25%). Only 5% of East Germans doubts that the application of science and technology will make work more interesting.

Those most convinced of science and technology's beneficial influence on work include men (agreeing more than women by 7%), opinion leaders, avid media users, the politically right, people with a positive attitude toward Europe, as well as those with a high income and those with a high level of education.

Secondly, almost two out of every three Europeans (63%) agree that **"thanks to science and technology, there will be more opportunities for the future generations"**. Most convinced of the beneficial influence science and technology will have on the people that will live after us are the Greeks, the (especially East) Germans, the Luxembourgians and the Dutch. Socio-economically speaking, this group includes mainly men, opinion leaders, avid media users and citizens with a positive attitude toward Europe.

So far, mainly positive appreciations of science and technology have been presented here. But throughout the European Community, 42% of the people feel that **"we depend too much on science and not enough on faith"**. Roughly one third disagree with this statement (31%), and 22% of Europeans agree nor disagree. Greece is the one Member State in which a majority of the population holds the view that science is too much depended upon (56%). On the other hand, 44% of East Germans don't think that faith should be given more attention. Women tend to share this point of view more than men do, and find themselves in the company of older people, less educated people, people with low incomes, with low opinion leadership scores and of those who belong to the political right.

Compared with 1989, less Europeans (42% compared with 46%) spot a lack of dependence on faith. The most striking decreases in support for the above statement are recorded in Luxembourg (-16 points to the level of 30%), Spain (-11 points to 46%), Italy (-9 points to 45%) and France (-8 points to 37%). Portugal does not go along with the European trend: half of its population is now of the opinion that science is too much depended upon, an increase of 11 points compared with 1989.

Over half of EC citizens are of the opinion that **"science makes our way of life change too fast"** (55%), with 22% of Europeans disagreeing and 19% remaining indifferent toward the subject. Whereas on average 20% of Community citizens "strongly agree" that the pace of change induced by science is too fast, no less than 63% of Greeks do so.

In total, only 2% of Greeks disagree, either strongly or to some extent. Other Member States that would like to see the speed of change slowed down include Denmark, Spain and Portugal. Least dissatisfied with the pace of change turn out to be the men, the young, the highly educated, opinion leaders and the citizens enjoying a relatively high income.

In 1989, 3% more Europeans (58%) thought that science made their way of life change too fast. Since then, the number of people thinking along those lines has gone down in 8 Member States - mostly so in Italy (-11 points) and France (-10 points). In four countries, however, it has gone up, with Greece (+14 points to the level of 89%) and Portugal (+16 points to 67%) leading the way.

b. scientists

On the whole, Europeans tend to view scientists in a rather positive light. More than six out of every ten (61%) agree that **"most scientists want to work on things that will make life better for the average person"**. Only 16% of EC citizens disagree with this statement, and 17% declare that they agree nor disagree. In every single Member State, over 50% of the people agree with this favourable view of scientists, with percentages ranging between Ireland's and the United Kingdom's 71% and Germany's 52%.

Beside Ireland and the UK, Greece (69%) and Portugal (65%) particularly have faith in the scientist's good intentions. One out of every three Portuguese (33%) even "strongly agrees" with the above statement. Opinion leaders and citizens who enjoy a high income have less faith in the aforementioned good intentions, whereas avid media users tend to put a greater than average trust in scientists.

These findings, however, do not mean that Europeans are blind to the risks brought along by scientific knowledge. Almost six out of every ten EC citizens (59%) go along with the statement that **"because of their knowledge, scientific researchers have a power that makes them dangerous"**. One out of five disagrees (20%) and 14% of citizens remain indifferent. Degrees of agreement vary between Spain's low of 46% and Germany's high of 73%. Those most wary include women, older citizens and poorly educated people. What is also striking, is that among people with a low income, a low score for opinion leadership and a low level of media use, the number of don't-knows is situated significantly above the Community average (12%, 14% and 13% respectively, as opposed to 7% for the European Community as a whole).

c. animal testing

As to the emotionally delicate topic of animal testing, a clear majority (54%) of Europeans do not agree with the statement that **"scientists should be allowed to do research that causes pain and injury to animals like dogs and chimpanzees if it can produce new information about serious human health problems"**. Furthermore, more than one out of every three EC citizens "strongly disagrees" with this statement (35%). Only 28% agree, of which a mere 9% strongly so. Roughly one in seven Europeans remains rather neutral on this count (14%).

Taking a closer look at the situation in the various Member States, we find that the French are most outspoken in their disapproval of animal testing: 62% disagree, out of whom 41% strongly. At the other end of the range, only one out of every four Greeks (25%) declares to be against, as opposed to nearly half (49%) who are in favour.

Disagreeing more than others with the concept of animals suffering on behalf of human welfare, are women (40% of whom disagree strongly, as opposed to 30% of men), young people and particularly those people still studying (42% of whom disagree strongly). Among the more outspoken support-

ers of animal testing feature opinion leaders, people with a positive European attitude, regular media users and people of the political right.

d. personal involvement

In line with the generally favourable attitude most European Community citizens hold with regard to science and its researchers, almost half of them do not agree with the statement that **"for me, in my daily life, it is not important to know about science"** (48%). Only one out of every three EC citizens (33%) agrees with this statement, while 15% remain neutral. The Irish (49% agree) and the Luxembourgians (46%) are least convinced of the usefulness of science in their daily lives. The Danes, on the other hand (61% disagree), are most convinced.

Whereas 28% of European men feel that in their daily life, it is not important to know about science, this figure reaches 37% among European women. Least convinced of the importance of scientific knowledge tend to be the older EC citizens (21% of the over 55 strongly agree with the above statement, compared with only 7% of the people between the ages of 15 and 24), the more poorly educated, those not using the media very intensely, and those with a lower income, a low opinion leadership score, a negative European attitude and, finally, those who belong to the political right.

Between 1989 and 1992, the number of people agreeing that in daily life, it is not important to know about science, has gone down from 37% to 33%. This average is the outcome of a decrease in most Member States (the most spectacular being a 20% drop in Spain), a status quo in the Netherlands, and increases in Luxembourg (+19 points), Ireland (+14 points), the United Kingdom (+5 points) and Portugal (+2 points).

Table 3.2: The importance of science and technology, comparison of 1992 with 1989, EC12, 1992, per cent of people who agree "strongly" or "to some extent"

statements	1989	1992
Science and technology are making our lives healthier, easier and more comfortable.	73	76
We depend too much on science and not enough on faith.	46	42
For me, in my daily life, it is not important to know about science.	37	33
Science makes our way of life change too fast.	58	55

3.2. The importance of science and technology in practical terms

The overall results for the second set of statements, concentrating rather on the more practical aspects and applications of scientific and technological research are contained in table 3.3 (following page).

The statements can be grouped in a way so as to provide an overview of Europeans' opinion on science and technology, its links with the functioning of the economy, the role and influence of information technology, as well as the special case of the belief in the existence of lucky numbers, which is linked to the astrology question treated in the chapter on knowledge.

a. science and technology

The statement supported by the highest majority of Europeans is clearly **"scientific and technological progress will help to cure illnesses such as AIDS, cancer,..."**. No less than 84% of EC citizens agree (strongly or to some extent) with this statement, which contains a certain degree of wishful thinking. Only 4% of EC citizens disagree, 7% remain neutral and 5% don't know. Among the Greeks and the Dutch, over 90% count on science and technology to help get rid of the most destructive of diseases.

This is also the case among those Europeans who are still studying. Further examining the socio-economic data, we find that a high degree of agreement with the medical benefits of scientific and technological research is mainly found among opinion leaders, people with a relatively high income, people who show a positive European attitude and among those who make regular use of the media.

A result that is bound to have more of a bearing on political decision making at any level than the above, is that almost three out of every four Community citizens (73%) agree that **"even if it brings no immediate benefits, scientific research which advances the frontiers of knowledge is necessary and should be supported by the government"**. Only 7% disagree with this opinion, while 12% remain neutral and 8% of Europeans say that they don't know. The staunchest supporters of research are to be found among the Greeks (84% agree, 51% strongly) and the French.

Table 3.3: **The importance of science and technology in practical terms, EC12, 1992, in per cent**

statements[2]	strong. agree	agree	neither/ nor	disagr.	strong. disagr.	don't know
New technology does not depend on basic scientific research.	4	14	13	26	25	18
On balance, computers and factory automation will create more jobs than they will eliminate.	4	11	14	27	38	6
Even if it brings no immediate benefits, scientific research which advances the frontiers of knowledge is necessary and should be supported by the government.	33	40	12	5	2	8
Scientific and technological research do not play an important role in industrial development.	4	9	9	31	38	8
Some numbers are especially lucky for some people.	14	22	19	10	26	9
New inventions will always be found to counteract any harmful consequences of scientific and technological development.	14	33	18	14	8	12
Scientific research does not make industrial products cheaper.	16	30	17	16	9	12
Only by applying the most modern technology can our economy become more competitive.	29	38	13	6	3	11
Computers have made the use of bank services more complicated.	13	17	12	25	27	7
Scientific and technological progress will help to cure illnesses such as AIDS, cancer, ...	46	38	7	3	1	5
The benefits of science are greater than any harmful effects it may have.	19	33	24	9	4	10

Men (78%) tend to agree slightly more than women (69%), while support runs very high among the people with a high level of education (84% of those who were 20 years or older when they finished their full-time education agree). Furthermore, the highest levels of agreement tend to be found among opinion leaders, avid media users, people with a positive European attitude and among those with a high income.

[2] The following wording was used in the questionnaire: strong. agree = strongly agree; agree = agree to some extent; neither/nor = neither agree nor disagree; disagr. = disagree to some extent; strong. disagr. = strongly disagree.

At the overall EC level, not much has changed since 1989: unconditional support for scientific research has gone down by just 1%. At the level of the individual Member States, we find small decreases in most, together with an 8% drop in France (to the level of 83%) and a 9% drop in Luxembourg (to the level of 69%). Increases have taken place in Germany (+15 points - this is not due to the accession of the former GDR, as the level of support in both the East and the West of the country stands at pretty much the same level), Greece and Portugal (both: +9 points).

The overall favourable opinion of research is accentuated by 51% of Europeans disagreeing with the statement claiming that **"new technology does not depend on basic scientific research"**. Less than one fifth (18%) of Community citizens agree that there exists no link between the two, while 13% do not express an opinion, and 18% state that they don't know. The Danes and the British are most convinced of this practical application of basic research; in both Member States, 64% of citizens disagree with the statement, and in Denmark's case, 46% do so strongly.

Men (58%) disagree more than women (45%), while the opinion that technology owes a lot to basic scientific research is most widespread among the young, the better educated, opinion leaders, people with a high income, avid media users and the politically left.

This positive attitude toward research does not mean Europeans have unrealistic expectations with regard to its possibilities. Less than half agree that **"new inventions will always be found to counteract any harmful consequences of scientific and technological development"** (47%, of which 14% strongly). Almost one in four Europeans (22%) does not believe this will always be the case, while 18% agree nor disagree, and 12% don't know. The Dutch and (especially East) Germans trust science most to come up with ever new solutions to created problems (67% agree with the above statement). The Danes and the British are the most sceptical of EC citizens, with respectively 58% and 39% disagreeing).

Women (45% agree) are more sceptical about new inventions than men (50% agree). Scepticism is most encountered among those still studying, Europeans with a high income and the politically left. Optimism, on the other hand, prevails among opinion leaders, people with a positive European attitude and the regular media users.

More realistically phrased, the positive image research enjoys among European citizens is demonstrated by their agreement with the statement that **"the benefits of science are greater than any harmful effects it may have"**. Over half (52%) of Community citizens go along with this, as opposed to only 13% who don't. In 1989, 46% of EC citizens held an overall positive view of science, 6% less than now. Then, 20% of Community citizens emphasized science's harmful effects, 7% more than nowadays.

It needs to be pointed out, though, that of all eleven statements featuring in this set, this is the one with the highest percentage of respondents stating that they "agree nor disagree": 24%. Among the firmest believers in the beneficial nature of science are the Spanish and the East Germans.

This belief in the beneficial nature of science is especially held by men (56% agree), older EC citizens (58% of respondents between the ages of 40 and 54 years agree), people with a high income (58% of the top segment agree as opposed to 49% of the bottom segment), opinion leaders (58% of those with a high score agree as opposed to 46% of those with a low score), people with a positive European attitude (56% agree, compared with 47% of the people with a negative European attitude) and regular media users (58% agree, compared with 44% of the least avid media users).

EC-wide, the belief in the benefits of science has grown by 6% between 1989 and 1992 (from 46% to 52%). In all but two Member States (Greece: -4 points and France: -2 points) this belief has increased. This has happened most strikingly in Germany (+18 points - with the East of the country outscoring the West) and Denmark (+15 points).

b. the economy

Almost seven out of every ten European citizens (69%) do not share the opinion that **"scientific and technological research do not play an important role in industrial development"**. 13% do so, while 9% do not agree or disagree with the statement and 8% don't know. More than any other EC citizens, the Danes (82% disagree, and 58% do so strongly) and the British (74% disagree) are aware of the economic implications of scientific and technological research.

Men (43% strongly disagree) are more ready than women (33% strongly disagree) to recognize the industrial applications of research. The older people are, and the more they are poorly educated, the more they tend to agree with the above statement. Disagreement thrives among opinion leaders, people with a high income, people with a positive European attitude and regular media users.

Furthermore, two out of every three Community citizens (67%) are of the opinion that **"only by applying the most modern technology can our economy become more competitive"**. 9% of Europeans do not agree, 13% voice no opinion and 11% don't know. The Germans are overwhelmingly convinced of the link between technological input and a competitive economy: 82% concur with this statement, and in the East of the country, this figure even reaches 87%. The Danes are the Community's most sceptical citizens in this respect: almost one out of every five (19%) does not agree with the link described above.

Agreement is found particularly among men, opinion leaders, people with a high income, people with a positive European attitude, the politically left, as well as among the regular media users. Of the people who do not qualify as regular media users, no less than 23% answer with "don't know".

Even though most Europeans are quite ready to recognize a link between scientific and technological research and the economy's functioning, at micro level they do not seem to view this link as a particularly positive one. Almost half of Community citizens (46%) agree that **"scientific research does not make industrial products cheaper"**. One in every four (25%) disagrees with this statement, while 17% agree nor disagree and 12% state that they do not know. Majorities that are convinced of the inadequate pecuniary impact of scientific research can be found in Belgium (56%), the Netherlands (55%), Germany (54%) and France (52%), all Member States with developed economies. It is striking that in Greece, Spain and Portugal over one in every four respondents answered this question with "don't know" (27% in all three cases).

Men (29%), opinion leaders (30%) and people enjoying a relatively high income (30%) tend to disagree most with the above statement. Again, almost one out of every four people who fail to qualify as regular media users (24%) states that they "don't know" what to think of the statement.

c. information technology

Almost two out of every three Community citizens (65%) do not agree with the statement that **"on balance, computers and factory automation will create more jobs than they will eliminate"**. Only 15% do agree, 14% agree nor disagree and 6% do not know. In 1989, only 52% of Europeans (13% less tan nowadays) did not agree with this statement, while 24% did. These percentages reflect the situation in almost all Member States relatively well.

Exceptions are Greece and Portugal, where less people disagree with the above statement (45% and 53% respectively), not in order to agree more, but because there are many citizens in these two countries who belong to the don't-knows (22% and 20% respectively). Most sceptical as to jobs being created by information technology turn out to be people with a high income and those who are regular media users.

Compared with 1989 (24%), significantly less EC citizens (15%) think that computers and factory automation will ultimately create jobs. Disillusionment is found throughout the Community, with every Member State showing a drop compared with three years ago. Percentages range between -2 points in Spain and -20 points in Greece.

This overall low belief in the job-generating powers of computers does not mean that Europeans cannot see any good coming from them. Confronted with the statement **"computers have made the use of bank services more complicated"**, less than one out of every three Community citizens (30%) agrees. A majority of 52% of Europeans disagrees, while 12% remain neutral and 7% do not know. Most irritated by the impact computers have had on banking are the British (45% agree they have made things more complicated) and, to a lesser extent, the West Germans (36%). Least troubled are the Danes (63% disagree), the Luxembourgians (62%) and the French (61%).

Taking a closer look at the socio-economic variables studied, we find that older people, people with a poor education, people with a low income, people who are not opinion leaders, as well as regular media users all tend to agree more that computers have made the use of bank services more complicated.

Table 3.4: The importance of science and technology in practical terms, comparison of 1992 with 1989, EC12, 1992, per cent of people who agree "strongly" or "to some extent"

statements	1989	1992
On balance, computers and factory automation will create more jobs than they will eliminate.	24	15
Even if it brings no immediate benefits, scientific research which advances the frontiers of knowledge is necessary and should be supported by the government.	74	73
The benefits of science are greater than any harmful effects it may have.	46	52

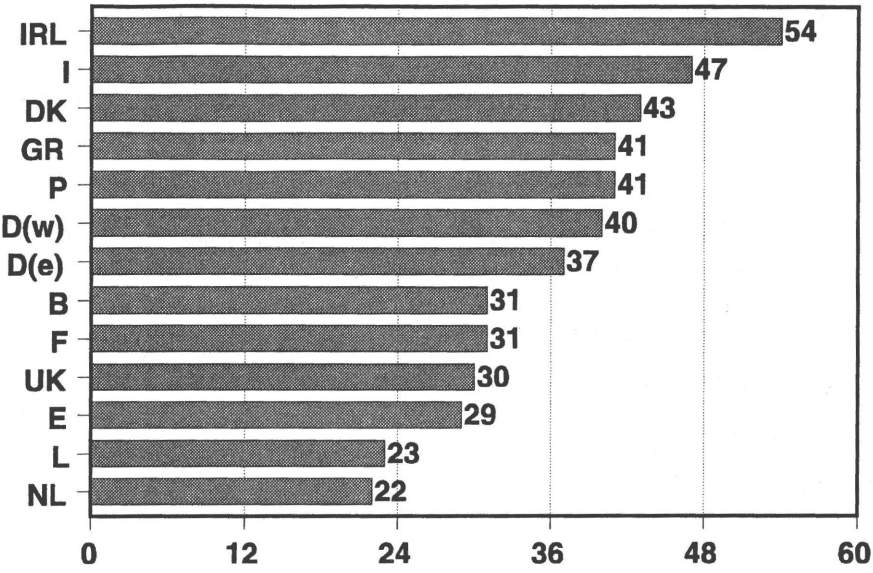
d. lucky numbers

After all these statements concerning science, technology and research, one more has to be looked at. A little more than one third of EC citizens (36%) agree that **"some numbers are especially lucky for some people"**. Exactly as many (36%) do not agree, while 19% agree nor disagree and 9% do not know. Among those who disagree, most people disagree strongly, whereas among those who agree, most people agree to some extent only with the existence of lucky numbers.

The Irish (54%) and the Italians (47%) are most convinced that some numbers are especially lucky for some people (figure 3.1). The Dutch are least convinced, 62% of them disagreeing with the statement, of which 58% strongly.

Four out of every ten women (40%) agree, compared with only 32% of men. The belief in the existence of lucky numbers is shared by especially the older citizens, the people with a poor level of education and those with a low income. Least convinced are opinion leaders and avid media users throughout the Community.

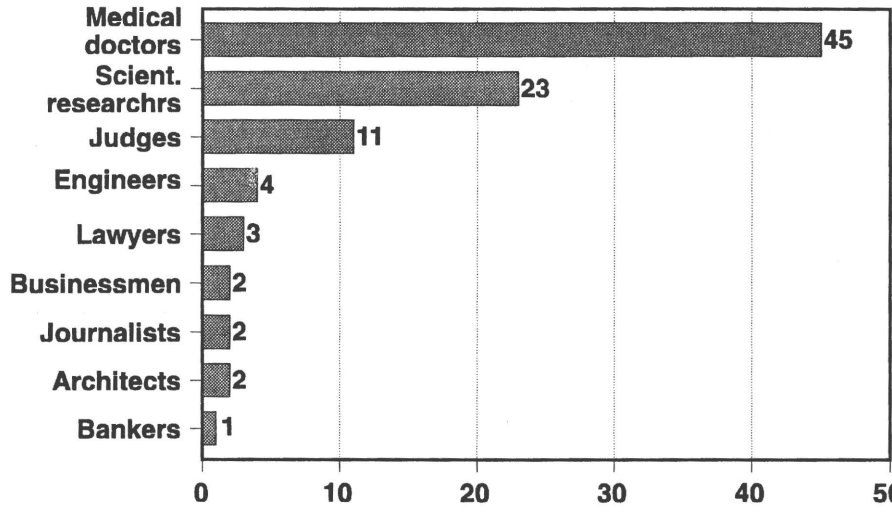
Figure 3.1: Lucky numbers by countries, 1992, in per cent



3.3. The standing of professional scientists

When presented with the question **"Which one of the following professions do you respect the most?"**, almost half (45%) of Europeans opt for medical doctors (figure 3.2). In four Member States, a majority of citizens choose medical doctors as the most respected professional category, the United Kingdom leading with 65%. In Denmark, only 27% of respondents cast their vote on behalf of medical doctors, which represents the European Community's lowest result.

Figure 3.2: The standing of different professions, EC12, 1992, in per cent



One in every two women (50%) respects medical doctors most, as opposed to 40% of men. Respect for doctors increases with age (53% of over 55s against 39% of those between 15 and 24 years of age). It also decreases in line with respondents' level of education and level of income. Opinion leaders (37%) have a lower esteem for medical doctors than followers (55%).

At EC level, scientific researchers form the second-most respected professional category, receiving 23% of Europeans' votes. The country-by-country results vary between 10% in Ireland and Portugal, and 36% in France. Only in Italy, scientific researchers form the most respected professional category, being nominated by 33% of the citizens, as opposed to medical doctors' 32%. Respect for scientific researchers increases along with the respondents' level of education, income and opinion leadership index.

Judges turn out to be the third-most respected professional category, with a Community-wide 11%. In Spain (29%) and Denmark (28%) over one in four people respect judges most, whereas in France only 3% of citizens say they do so. Where the socio-economical variables are concerned, very little variation is found to distinguish between respondents.

All other professional categories receive less than 5% of the European vote: starting with engineers (4%), lawyers (3%), businessmen, journalists and architects (2% for all three categories) and ending with bankers (1%). This threshold of 5% is particularly meaningful since 5% of respondents spontaneously opted for the possibility to state that they preferred none. In the Netherlands, almost one in ten citizens did this (9%).

When asked which of the professions they respect second most, 23% of Europeans say that is the case for scientific researchers. Just 1% less (22%) opt for medical doctors, and judges come in third again, with 13% of the votes. Lawyers and engineers (both 9%) manage to beat the 5% threshold this time, but none of the other professional categories do so.

Reversing the question, Europeans say they respect journalists least (21%). Bankers (16%), businessmen (14%) and lawyers (10%) are all at the bottom of at least one in ten Community citizens. Scientific researchers and engineers (3% and 2% respectively) turn out to be among the least disrespected professions, together with medical doctors (3%) and architects (4%). One out of every ten Community citizens (10%) spontaneously states not to respect any profession the least.

3.4. Analyses by science and technology knowledge

Using the "scientific knowledge" variable introduced in Chapter 2, we have taken a closer look at how people's attitudes toward science and technology and professional scientists are influenced by their factual knowledge. To this end, the structure of the above chapters 3.2, 3.3, 3.4 is respected.

3.4.1. The importance of science and technology in general terms

a. science and technology and their impact

Table 3.5: The importance of science and technology, percentage of people agreeing strongly or to some extent to the statements, EC12, 1992, in per cent

statements	good scientific knowled.	average scientific knowled.	poor scientific knowled.	EC 12
Science and technology are making our lives healthier, easier and more comfortable.	80	75	60	76
Thanks to scientific and technological advances, the Earth's natural resources will be inexhaustible.	19	28	24	23
Technological progress will make possible higher levels of consumption and, at the same time, an unpolluted environment.	30	34	24	31
Scientific and technological research cannot play an important role in proptecting the environment and repairing it.	18	26	21	21
The application of science and new technology, will make work more interesting.	57	55	37	54
Thanks to science and technology, there will be more opportunities for the future generations.	65	64	49	63
We depend too much on science and not enough on faith.	38	47	49	42
Science makes our way of life change too fast.	52	59	54	55

The information contained in the table 3.5 clearly shows the different attitudes toward science and technology that go along with respondents' level of scientific knowledge.

People with a good scientific knowledge are even more convinced than the average EC citizen (80 per cent, compared with 76) that "science and technology are making our lives healthier, easier and more comfortable".
They also tend to be more sceptical than the average Community citizen where the belief is concerned that "thanks to scientific and technological advances, the Earth's natural resources will be inexhaustible" and where the opinion is voiced that "technological progress will make possible higher levels of consumption and, at the same time, an unpolluted environment".

Nevertheless, less people with a good scientific knowledge than average (18 per cent compared with 21) agree that "scientific and technological research cannot play an important role in protecting the environment and repairing it", proving that they do not allow their scepticism to stop them believing in the possibilities science has. Further proof of this can be found in their expectation that "the application of science and technology will make work more interesting" and "there will be more opportunities for the future generations".

Where the two negative appreciations of science and technology are concerned, people with a good scientific knowledge tend to be slightly less impressed by them than the average Community citizen.

The number of people who "don't know" tends to be very high among respondents with a poor scientific knowledge, varying between 17 per cent for the statement that "science and technology are making our lives healthier, easier and more comfortable" to 36 per cent for the statement that "technological progress will make possible higher levels of consumption and, at the same time, an unpolluted environment".

b. scientists

The positive view most Europeans have of scientists is slightly more pronounced among the people with a good scientific knowledge: 62% of them are convinced that "most scientists want to work on things that will make life better for the average person" (EC average: 61%). Just half (50%) of people with a poor scientific knowledge agree with this statement.

But Europeans with a good scientific knowledge are also more aware than the average citizen of the risks brought along by this very knowledge: 62% go along with the statement that "because of their knowledge, scientific researchers have a power that makes them dangerous", compared with 58% for the Community as a whole. Just under half of people with a poor scientific knowledge agree with this (49%).

Again, the number of people with a poor scientific knowledge who answer with "don't know" is rather high, situated around 25% for both questions related to scientists.

c. animal testing

The fact of having good or bad scientific knowledge does not distinguish between people very much where animal testing is concerned. 28 per cent of EC citizens, of people with a good scientific knowledge and of people with an average scientific knowledge agree that "scientists should be allowed to do research that causes pain and injury to animals like dogs and chimpanzees if it can produce new information about serious human health problems". The percentage

agreeing among people with a poor scientific knowledge is just a little lower, 26%. They also tend to disagree less strongly than their knowledgeable counterparts (27%, compared with 38%), but this is mainly caused by the high percentage of "don't knows" (19%).

d. personal involvement

The statement "for me, in my daily life, it is not important to know about science" yields the largest differences between people with a good and a poor scientific knowledge. Whereas one in three EC citizens (33 per cent) agrees with the statement, only one in four (25 per cent) of people with a good scientific knowledge does so, and over one in two (51 per cent) of people with a poor scientific knowledge. The percentages describing disagreement with the statement show a reverse picture, while, again, the number of people who don't know is rather high among the people with a poor scientific knowledge (17 per cent).

3.4.2. The importance of science in practical terms

a. science and technology

Table 3.6: The importance of science and technology in practical terms, percentage of people agreeing strongly or to some extent to the statements, EC12, 1992, in per cent

statements	good scientific knowled.	average scientific knowled	poor scientific knowled.	EC 12
Scientific and technological progress will help to cure illnesses such as AIDS, cancer, ...	89	81	65	84
Even if it brings no immediate benefits, scientific research which advances the frontiers of knowledge is necessary and should be supported by the government.	80	69	49	73
New technology does not depend on basic scientific research.	19	21	11	19
New inventions will always be found to counteract any harmful consequences of scientific and technological development.	48	51	31	47
The benefits of science are greater than any harmful effects it may have.	55	25	37	52

As the above overview clearly shows, people with a good scientific knowledge are expecting even more from scientific and technological progress where getting rid of illnesses is concerned, than the average EC citizen does. They also express

more support for scientific research which advances the frontiers of knowledge. With regard to the other three statements included in the table, no important differences are found between the EC average and the people with a good scientific knowledge.

People with a poor scientific knowledge score below the EC average for all statements. Overall, they seem to be less optimistic about science and technology, but mainly on account of the high number of "don't knows" among their ranks. With regard to the statement that "new technology does not depend on basic scientific research", this percentage even reaches 55%.

b. the economy

Table 3.7: The importance of science and technology in practical terms, percentage of people agreeing strongly or to some extent to the statements, EC12, 1992, in per cent

statements	good scientific knowled.	average scientific knowled	poor scientific knowled.	EC 12
Scientific and technological research do not play an important role in industrial development.	12	16	16	14
Only by applying the most modern technology can our economy become more competitive.	73	66	45	68
Scientific research does not make industrial products cheaper.	49	48	30	47

People with a good scientific knowledge are slightly more than the average EC citizen convinced of science and technology's role in industrial development. They also tend to believe more that our economy's competitiveness depends on technological input.

People with a poor scientific knowledge are much less convinced of the role science and technology can play in the industrial and economical processes, but once again, this is mainly due to the high number of "don't knows" among their ranks; depending on the question somehere between 30 and 40 per cent.

c. information technology

Whereas throughout the European Community, almost two out of three citizens (65 per cent) do not agree with the statement that "on balance, computers and factory automation will create more jobs than they will eliminate", 68% of people with a good scientific knowledge do so, opposed to only 50% of people with a poor scientific knowledge.

This low belief in the job-generating powers of computers does not mean that the knowledgeable citizens do not see anything good coming from them. On the contrary, 60% of them disagree with the statement that "computers have made the use of bank services more complicated" (EC average: 52%, people with a poor scientific knowledge: 27%).

d. lucky numbers

Just under one in three people with a good scientific knowledge agrees that "some numbers are especially lucky for some people" (32 per cent, 3 points less than the Community average). The percentage for people with a poor scientific knowledge stands at 40%, while 27% of them do not know.

3.4.3. The standing of professional scientists

Where almost half of European citizens (45 per cent) choose medical doctors as the profession they respect most, 40 per cent of people with a good scientific knowledge do so. This percentage stands at 49 per cent for respondents with an average scientific knowledge and at 58 per cent for those with a poor scientific knowledge.

This pattern of diminishing respect according to respondents' scientific knowledge is reversed where Europe's second-most popular professional category is concerned: scientific researchers. Their popularity rises from eleven per cent among respondents with a poor scientific knowledge, over 20 per cent among those with an average scientific knowledge to 27 per cent among the people with a good scientific knowledge. The percentage for the Community as a whole stands at 23%.

With regard to judges, the Community's third-most respected professional category, no meaningful differences are found between the people with a different level of scientific knowledge.

CHAPTER 4

4. The status of European research

Introduction

Chapter 4 investigates whether European citizens think their continent is ahead, behind, or at the same level as the United States and Japan with regard to three scientific and/or technological fields: scientific discoveries, technological advances applied in industry and technological advances applied in everyday life.

Respondents were also asked whether, in their opinion, Europe, the United States or Japan is most ahead in the following four specific fields: "who has the best educated scientists?", "who spends the most on scientific research?", "who is most successful in turning scientific discoveries into useful products?" and "who is best at co-ordinating research carried out by different bodies?".

The main results of this chapter are summarized below.

- Many Europeans perceive the Japanese as superior only where the practical applications of scientific and technological research are concerned. Where the quality of the research, the money made available, and coordination efforts are concerned, the Americans are seen as more advanced.

- People with a good scientific knowledge tend to be a little more convinced than the average EC citizen that Europe is ahead of or at the same level of the United States, while those with a poor scientific knowledge are much less convinced of that.

- On the whole, the Germans and the French are most impressed by the European accomplishments in the field of scientific and technological research. Confidence runs especially low in Greece and Spain.

- Citizens with a good scientific knowledge are much more than the average Community citizen convinced that Europe is behind Japan where technological advances applied in industry and everyday life are concerned.

4.1. The condition of European research: comparison with the United States and Japan

Europeans were asked whether they think Europe is ahead, behind, or at the same level as the United States and Japan with regard to three scientific and/or technological fields: scientific discoveries, technological advances applied in industry and technological advances applied in everyday life. The results (for the European Community as a whole) are listed in the following table:

Table 4.1: Europe compared with USA and Japan, EC12, 1992, in per cent

	ahead	behind	same level
scientific discoveries			
USA	17	46	27
Japan	24	47	17
technological advances applied in industry			
USA	18	42	27
Japan	12	66	12
technological advances applied in everyday life			
USA	17	43	27
Japan	20	47	18

The United States

The comparison between Europe and the United States shows a remarkably similar pattern for all three fields: a little less than one in every five EC citizens is of the opinion that Europe is ahead of the Americans (17%-18%), a little less than half are convinced that Europe is behind (between 42% and 46%) and just over one in four (27%) thinks that Europe and the United States are at the same level.

In three Member States, over 50% of the people are of the opinion that Europe is lagging behind the United States for all three fields: Greece, Spain and Italy. Where "scientific discoveries" are concerned, these three are joined by Ireland (52%), and where "technological advances applied in everyday life" are concerned by the United Kingdom (55%).

For all three fields, a more than average number of French put Europe ahead of the United States, and a less than average put Europe behind the States. On top of that, France consistently has the highest number of respondents stating that Europe and the United States are at the same level (roughly 40% for all three questions).

However, Germany is the champion where confidence in the European research effort is concerned. It consistently shows the highest number of people who put Europe ahead of the United States, with percentages ranging from 24% where scientific discoveries and technological advances applied in everyday life are concerned, to 28% for technological advances applied in industry. Regarding the latter topic, West Germans putting Europe ahead of the States outnumber (30%) those putting the USA ahead (28%). That is the only situation where these roles

and figures are reversed. Spain is always the country to put the least trust into European research: only between 8% and 10% of te Spanish think that Europe is ahead of the United States.

Examining the socio-economic characteristics of respondents more closely, we find that those still studying are least conviced of Europe's supremacy over the USA in the field of scientific discoveries (13%). People who are of the opinion that Europe is ahead in the field of industrial applications of technological advances tend to be male rather than female, young rather than old, opinion leaders, avid media users and politically belonging to the right.

Supporters of the idea that Europe is lagging behind the United States where scientific discoveries are concerned are mainly to be found among older respondents and those who are still studying. Men and younger respondents tend to rather feel Europe is behind the USA in both fields that are related to practical applications of technological advances.

Opinion leaders, people enjoying a high income and people with a high level of education tend to be more inclined toward putting the United States and Europe on the same level for all three research-related fields.

People with a good scientific knowledge tend to be a little more convinced than the average EC citizen that Europe is ahead of or at the same level of the United States, while those with a poor scientific knowledge are much less convinced of that.

Finally, for all three questions, the number of "don't knows" is situated somewhere between 10% and 15% of the Community population. Each time, Portugal is the country with the highest percentage, ranging from 22% where "scientific discoveries" are concerned to 26% for "technological advances applied in everyday life". Among the people with a poor scientific knowledge, "don't knows" account for roughly one third of answers.

Compared with 1989, EC citizens are a bit more generous in their assessment of the European research effort as compared to that of the United States. The number of people putting Europe ahead in 1989 varied between 13% ("scientific discoveries" and "technological advances applied in daily life") and 15% ("technological advances applied in industry"), whereas these percentages are now between 17% and 18%.

The most important increases over that three year period are found in Germany (+9 points), Belgium and Luxembourg (both +7 points) where scientific discoveries are concerned; Denmark (+9 points) and the Netherlands (+7 points) where technological advances applied in industry are concerned; and Belgium (+9 points) and France and the Netherlands (both +7 points) where technological advances applied in daily life are concerned.

Japan

The comparison between Europe and Japan does not show the same pattern for all three aspects of science studied here, but contains some consistencies anyway. Between one in three and one in four Europeans think that Europe is ahead of Japan where scientific discoveries (24%) and technological advances applied in everyday life (20%) are concerned. With regard to technological advances applied in industry, this percentage drops to 12%.

In seven Member States (Denmark, Greece, Spain, Ireland, Italy, Luxembourg and the United Kingdom), over 50% of the people are of the opinion that Europe is behind Japan in the field of technological advances applied in everyday life. For the category of "scientific discoveries", they are joined by East Germany and the Netherlands, and for "technological advances applied in industry" by every single other Member State. For the latter question, percentages range between West Germany's 51% and the United Kingdom's 77%.

As was the case in the comparison with the United States, France shows a strong conviction that Europe and Japan are at the same level. Almost one out of every three French citizens put Europe ahead of Japan in the fields of "scientific discoveries" (29%) and "technological advances applied in everyday life" (29%).

French confidence only falters where industrial applications of technological advances are concerned (11% put Europe in the lead). Here, it is the Germans who are most impressed by the European research effort (18% are of the opinion that Europe is in the lead).

Overall, the Greeks are least convinced of Europe's dominance over Japan in research matters. Only 8% of Greeks put Europe ahead in the field of "technological advances applied in industry" (Spain: 7%), 12% in the field of "technological advances applied in evryday life" and 13% in the field of "scientific discoveries" (in both cases the Community's lowest result).

As was the case in the comparison with the United States, Portugal has, in all three cases, the highest number of "don't knows", with percentages ranging between 22% and 26%. In Greece, there are many respondents who don't know what to answer as well, and here percentages vary between 15% and 20%. People with a poor scientific knowledge count a lot of "don't knows" in their midst as well (with percentages ranging from 35 per cent to 39 per cent).

Taking a closer look at the socio-economic characteristics of respondents, we find that the feeling that Europe is ahead of Japan is, for all three fields, more widespread as respondents are more avid media users. The young, in all three cases, tend to put Europe behind Japan more often than the old. Where technological advances applied in industry and everyday life are concerned, they are joined by opinion leaders and respondents enjoying a high income.

Citizens with a good scientific knowledge are much more than the average Community citizen convinced that Europe is behind Japan where technological advances applied in industry (73 per cent compared with the Community average of 66) and everyday life (51 per cent against an EC-wide 47) are concerned.

Compared with 1989, the overall Community picture has not altered much. Europeans have become slightly less optimistic in their appraisal of European research where scientific discoveries are concerned (-3 points). In Germany, there was a 14% decrease (1989: 39% - 1992: 25%) in the number of people who put Europe ahead of Japan with regard to scientific discoveries.

Europeans have also become slightly less generous in their appreciation of European technological advances applied in industry (1% less put Europe ahead of Japan than in 1989), but percentages in the various Member States did not fluctuate by much.

There was a 1% increase in the appreciation of European technological advances applied in daily life, mainly due to increases in France (+11 points), Belgium (+8 points) and Portugal (+7 points).

4.2. The status of specific science-related issues: who is best at what?

Respondents were asked whether, in their opinion, Europe, the United States or Japan is most ahead in the following:

- who has the best educated scientists?
- who spends the most on scientific research?
- who is most successful in turning scientific discoveries into useful products?
- who is best at co-ordinating research carried out by different bodies such as private industry, universities, research laboratories?

Table 4.2: Europe compared with USA and Japan, EC12, 1992, in per cent

	Europe	USA	Japan	don't know	TOTAL
best educated scientists	26	37	21	17	101
most spent on research	11	47	23	20	101
best at developing useful products	12	19	49	20	100
best in coordinating research	17	33	23	28	101

What becomes quite apparent from the overview is that Europeans do not have a very high opinion of their own research effort. In this comparison with the United States and Japan, respondents never rank Europe first. In fact, there is only one occasion upon which Europe is ranked above any of the two others. It beats Japan for the question as to who has the best educated scientists.

The result for the United States of America is always better than that for Europe. And in three out of four cases, more people opt for the "don't know" category than for Europe. Europeans are least impressed by the financial muscle of European research programmes (only 11% put Europe in first place) and most convinced of the quality of their scientists' education (26% put it in first place).

The United States show the best EC-wide results for three of the four questions, with at least one out of every three Europeans putting them in the lead. Percentages range between 33%, where their coordinating skills are concerned, and 47% where the money spent on research is concerned. Only where the development of useful products is concerned succeed the Japanese in overtaking the Americans.

Taking a closer look at the country-by-country results, we find that 58% of the Spanish are of the opinion that the Americans have **the best educated scientists.** The lowest result for the European Community is found in the United Kingdom (23%). The French (36%) are most convinced of Europe's strength in this field, whereas only 9% of Spanish citizens share this sentiment. The East Germans, on the other hand, are most impressed by the Japanese scientists (36%).

Men, respondents with a high education, opinion leaders and avid media users tend to be more convinced of Europe's worth than their respective counterparts. People with a high income tend to favour the United States of America, while the young tend to favour Japan. Women, older respondents, the more poorly educated, people with a low income and those with a low score on the opinion leadership index all tend to come up with a higher than average number of "don't knows".

Compared with 1989, 1% less Europeans put their own continent in the lead (from 27% to 26%). Seven Member States, however, saw an increase in the positive appraisal of Europe, the main one being France (+9 points to the level of 36%). In five, a decrease is observed, the highest one in the United Kingdom (-9 points to the level of 33%).

In five Member States, over half of citizens are of the opinion that the United States of America **spend the most on research**: Italy (57%), Spain (55%), Ireland and Belgium (52%), and Portugal (50%). Only 29% of East Germans, the Community's lowest percentage, share this opinion. One in every five Community citizens (20%) does not make a choice and answers "don't know", with percentages ranging between Belgium's low of 15% and Portugal's high of 26%. Only Germany and France (17%) think that Europe spends the most on research. Among the Spanish, only 4% do so. The Japanese are considered to be the biggest spenders by the British (31%) and the Germans (29% in the East, 27% for the country as a whole).

Europe is supported more by the young, the United States by men and respondents still studying, and Japan by opinion leaders, respondents with a high income and the avid media users. Women, older respondents, the more poorly educated and the people with a low score on the opinion leadership index all tend to show a higher than average number of "don't knows".

In 1989, 10% of Europeans put their own continent in the lead where scientific research spending was concerned, against 11% three years later. Changes in the various Member States have been relatively small, the highest increase being France's (+5 points to the level of 17%) and the highest decrease the Germans' (-2 points to 17%).

Japan is seen as **most successful in turning scientific discoveries into useful products** by over 50% of the citizens in five Member States: percentages vary from Italy's 50% to the United Kingdom's 62%. In East Germany, there is a majority as well (58%). France is, with 38%, least convinced of Japan's supremacy in this particular field. The United States' staunchest supporters are the Spanish (28%), whereas only 7% of the East Germans share this view. Europe again receives less mentions than the "don't know" category. Least impressed are the Spanish (4%), whereas almost one out of every five French (20%), Dutch and Germans (both 18%) put the old continent in the lead.

Taking a closer look at the socio-economic characteristics of respondents, we see that Japan is seen as most successful in turning scientific discoveries into useful products by especially male and young Europeans, together with opinion leaders, avid media users, better educated citizens and those enjoying a high income. "Don't knows" are particularly widespread among women, older citizens, the poorly educated, people with a low income, a low score for the opinion leadership index and the citizens who do not make regular use of the media.

Compared with 1989, 1% more Community citizens put Europe in the lead for managing to produce useful products (12% as opposed to 11%). France again shows the principal increae (+7 points to the level of 20%) and Denmark now shows the highest decrease (-5 points to the level of 7%).

The last category **"who is best at coordinating research carried out by different bodies such as private industy, universities, research laboratories"** seems to have puzzled Europeans most: overall, 28% opt for the "don't know" answer, which percentage is higher than that for both Japan (23%) and Europe (17%). No less than 35% of East Germans state that they don't know, against only 23% of Belgians.

Furthermore, East Germans are especially impressed by the Japanese coordinating capacity (30%), and especially unimpressed by the Americans' (14%). The Community's highest result for the Americans (45%) is found in Italy, as is the Community's lowest result for Europe (7%). Over one in every five citizens in the Netherlands (27%), Denmark (23%), France (22%), Germany (21%), Luxembourg (20%) and the United Kingdom (20%) puts Europe in the lead where coordinating research is concerned.

Male and young Europeans, together with opinion leaders, the better educated and those enjoying a high income tend to think the Americans are best at coordinating research. Regular media users tend to rather opt for the Japanese. "Don't knows" are particularly widespread among women, older citizens, the poorly educated, people with a low income, a low score for the opinion leadership index and the citizens who do not make regular use of the media.

The overall Community result for this question has remained 17% since 1989. The biggest change in a positive sense took place in Denmark (from 12% in 1989 to 23% in 1992) and the biggest drop in Germany (from 28% in 1989 to 21% now).

Finally, it appears that people with a good scientific knowledge are especially impressed by the level of education of Europe's scientists (30% put it in first place, compared with an EC average of 26%) and Japan's ability to turn scientific discoveries into useful products (56% put it in first place, compared with an EC average of 49%). On the whole, however, it seems that people with a good scientific knowledge voice their opinion more often because they hardly ever have to resort to the "don't know" category: hence they usually outscore the EC average for all other answering options. This in stark contrast with the people with a poor scientific knowledge, of them between 40 and 50 per cent hide in the "don't knows".

CHAPTER 5

5. The awareness of the European research policy

Introduction

Chapter 5 looks into European citizens awareness of the European Community's activities in the field of research. Those people who know that the Community is active in the field of «science and technology» are further probes as to more specific topics (e.g. environmental research,...).

In a second part, this chapter assesses European citizens' attitudes toward research carried out at the national and European levels. Angles studied include the research's efficiency, impact on industrial competitiveness,...

The main results are:

· The research field most often picked by respondents is agriculture (58%).

· One fifth of the EC population (20 per cent, up 5 points from 1989) does not know in which research areas the Community is active.

· Almost one out of every three citizens (32 per cent) is under the impression that the European Community is active in defence matters.

· Most correct answers are found among well educated people, people who are still studying, opinion leaders, people who regularly use the media, and people who fit into the top categories of the European social grade.

· «Science and technology» is mentioned as an EC research activity by 35 per cent of Community citizens. Higher than average results are found among men, people with a higher education, people with a higher income, opinion leaders, and people with a positive European attitude.

· Of the 35% of citizens who are aware that the Community is active in the field of «science and technology», more than half (58%) name environmental research and telecommunications (54%), followed by the categories «agriculture» (45%) and «new techniques for industrial production» (38%).

· The overall impression people have of research carried out at the European level is rather positive. European citizens seem to be fully aware of the present and future importance of European research programmes.

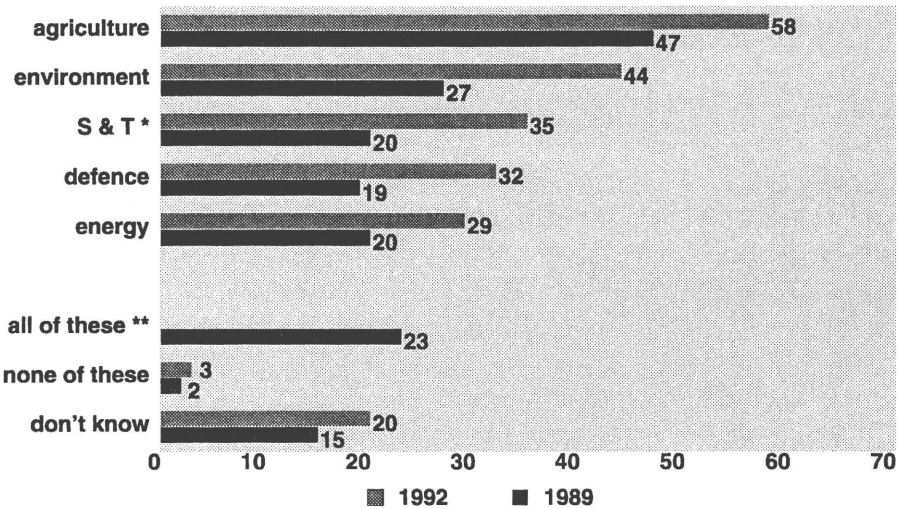
5.1. The knowledge of EC activities in the fields of science and technology

5.1.1. European Community activity in general

To find out what exactly European citizens know of the activities of the European Community in general, they were confronted with the following question:

Question: In which of the following areas is the European Community itself active?

Figure 5.1: Activities of the European Community, EC12+, 1992 and 1989, in per cent



several answers possible
* in 1992 "science"
** in 1992 not possible

More than half of European citizens think the EC is active in the fields of «agriculture» (58 per cent), followed by «environment» (44 per cent), «science and technology» (35 per cent), «defence» (32 per cent) and «energy» (29 per cent).

Still, one fifth of the population (20 per cent, up 5 percentage points from 1989) does not know in which areas the Community is active and almost one third (32 per cent) are under the impression that the European Community is active in defence matters. Overall, EC citizens do not show a very profound knowledge of the Community's research activities.

On a more positive note, we can state that compared with the results of the 1989 survey, the percentages for all different areas in which the Community is indeed active have increased by 9 to 17 points. However, this is also the case for the area of defence (+13 percentage points to the level of 32 per cent), where the Community is not at all active. A possible explanation for the higher percentages could be that, this time, respondents were not presented with the option «all of these (areas)». In 1989, the respondents had the possibility to answer that the Community is active in all listed areas, and 23 per cent opted for this answer. To prevent respondents again giving this convenient and simple answer, which does not distinguish between any of the categories, it was not included in the 1992 survey. (figure 5.1)

For all research areas except «defence», people with a positive **European attitude** show a significantly higher results than those people, whose attitude towards the European Community is ambivalent or negative. For example, 41 per cent of the people with a positive attitude towards the European Community think that the Community is active in science and technology, compared with only 28 per cent of those with a negative European attitude. This correlation between the attitude towards the European Community and the way people answer might be caused by two factors: (1) People with a positive European attitude actually know more about the activities of the Community (their result for the option «defence» which is not very high, could be interpreted as a hint) or (2) people with a positive European attitude assume that the Community - seen as a favourable political institution - simply must be active in areas which are regarded as important (e.g. environment).

The **most correct knowledge** of the Community's activties are found among well educated people or people who are still studying, opinion leaders, people who use the media often, and people who belong to the top categories of the European social grade.

A **lower level of knowledge** of the EC's activities is found among people aged over 55 years, people who finished their education before the age of 15 years, people who earn less than average, opinion followers, people who do not follow the news very regularly and people who belong to the bottom categories of the European social grade.

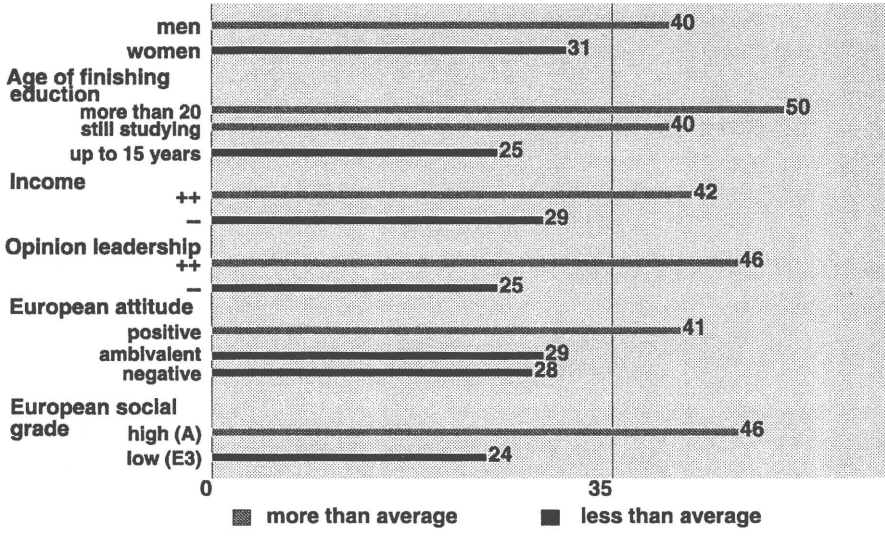
For the **country results**, the percentages for the various Member States were ranked for each of the fields. Denmark, Luxembourg and the Netherlands score very high for each of the fields (always among the first four countries) with the exception of science, where France takes the lead. For the area defence Great Britain scores second.

The people in Denmark (4 per cent), the Netherlands (6 per cent) and France (9 per cent) seem to know best what the Community does: in these countries the fewest people «don't know» what the Communitiy's activies are. In contrast, in Portugal (31 per cent), Spain (27 per cent) and Germany (26 per cent), the answer «don't know» is found most often.

Science and technology

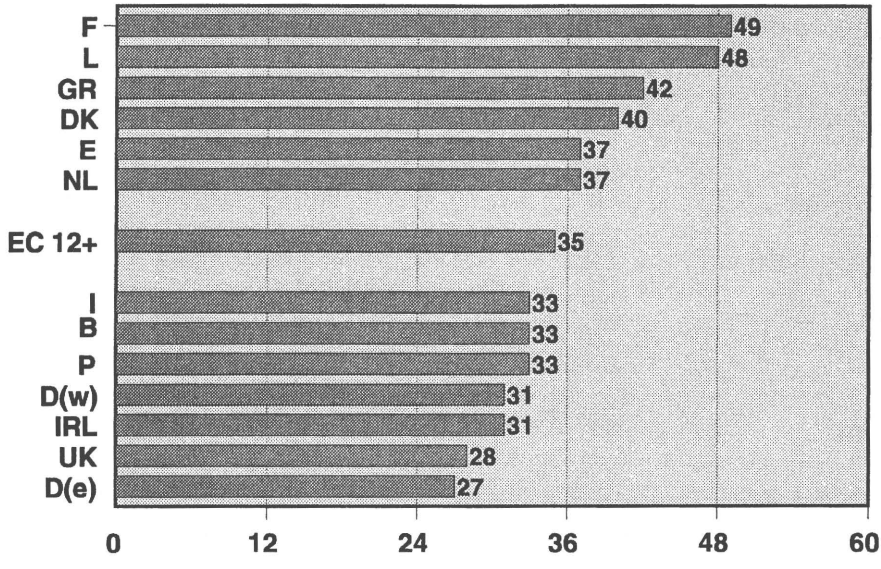
On average, «science and technology» is mentioned by 35 per cent of Europeans. There are, however, some remarkable differences according to the **socio-economic variables**. The following groups name «science and technology» as one of the activities of the Community more often than average: men, better educated people, people with a higher income, opinion leaders, people with a positive European attitude and people belonging to the highest social grade. The fact that their respective counterparts score lower than average goes without saying.

Figure 5.2: The socio-demographic groups and their scores for the item «science and technology», 1992, in per cent, EC average: 35 per cent



Where the different **country** results are concerned, almost half the people in France and Luxembourg see «science and technology» as an activity of the Community, whereas only a quarter of the people in Germany (East) and Great Britain do the same.

Figure 5.3: The item «science and technology» mentioned in the different countries, 1992, in per cent



5.1.2. Specific European Community research areas

After evaluating the knowledge of the areas in which the European Community is active, another question, about the various areas of research in which the Community is active, was presented only to those people who had said that «science and technology» is one of the activities of the Community. This was done under the assumption that these respondents, on account of their correct answer, had some more detailed knowledge of research activities than the average EC citizen:

Question: In which of the following areas of research is the European Community itself active?
Of the 35 per cent of EC citizens who were aware that the Community is active in

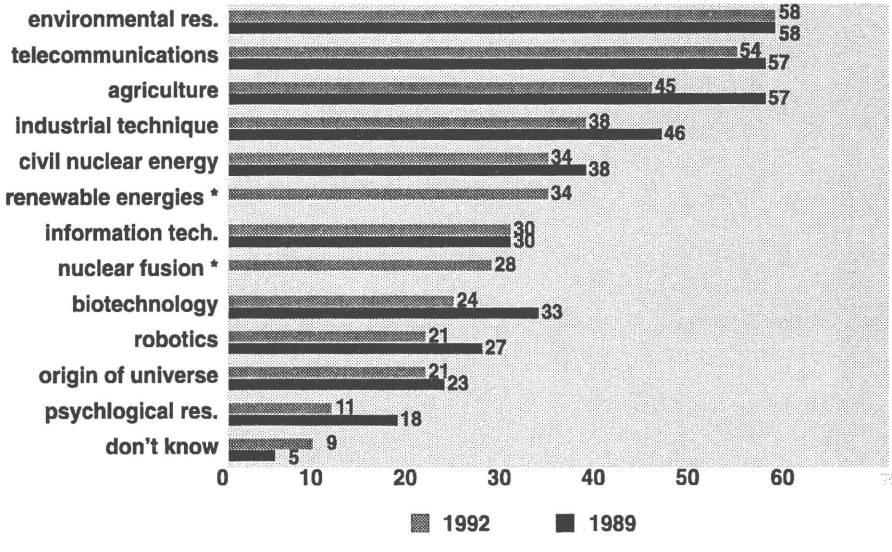
the field of «science and technology», more than half name **environmental research** (58 per cent) and **telecommunications** (54 per cent), followed by **agriculture** (45 per cent) and **new techniques for industrial production** (38 per cent).

The research fields least mentioned are **psychological research** (11 per cent), **research into the origin and the nature of the universe** (21 per cent) and **robotics** (21 per cent).

Compared with the results of the 1989 survey, when only 20 per cent said that «science» [1] was one of the Community's activities and 23 per cent answered «all of these» (and were therefore included in the reduced sample in order to study more detailed knowledge) all suggested research areas are mentioned less often (from -12 percentage points for agriculture, to -2 percentage points for research into the origin and the nature of the universe). Only for environmental research and information technology have the percentages remained the same (figure 5.4).

The **socio-demographic variables** hardly point out any significant differences. Where research areas like biotechnology, civil nuclear energy, information technology, nuclear fusion and renewable energies are concerned, better educated people tend to answer more often than the EC-average that the Community is active in them. The same trend is apparent for people with a better income (for telecommunication, biotechnology, environmental research, information technology, nuclear fusion and renewable energies).

Figure 5.4: Research activities of the European Community, EC12+, 1992 and 1989, in per cent



several answers possible
* in 1989 not possible

[1] In 1989, «science» was asked instead of «science and technology».

In order to compare the different **country** results, all Member States are ranked according to the percentage its citizens award to each listed area of research. Portugal, Luxembourg and Denmark are most often found among the four countries with the highest results. Ireland, France and Greece most often rank among the lowest four.

It is interesting to have a closer look at the people who answered «don't know» to the specific areas of research, even though they said that one of the activities of the Community was «science and technology», and they were presented with a showcard containing the different areas of research (for the percentage of people in the EC-countries answering «science and technology» see figure 5.3).

Throughout the Community, 9 per cent of people answer «don't know». High results are found in the United Kingdom (22 per cent), followed by Ireland (12 per cent), the Netherlands (11 per cent) and Spain (10 per cent).

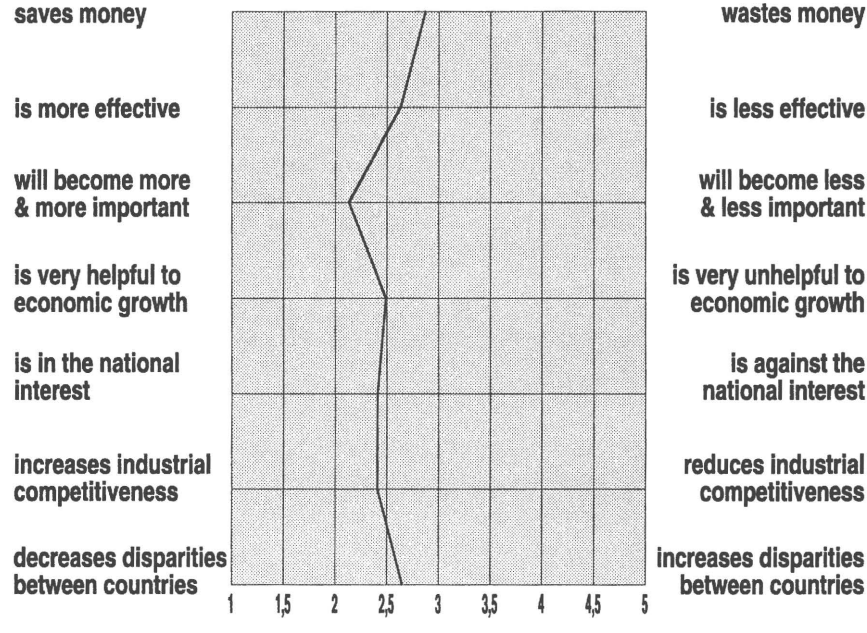
Apparently in the UK there is a lack of information concerning the Community's science and technology programmes, since even among the 28 per cent who state that «science and technology» constitutes one of the Communty's activities, one out of every five is not able to define any specific research areas.

5.2. Comparison between research carried out at the national level and the European level

The following question aims to compare research carried out at the national and European level.

Question: Now a comparison between seperate national and common European Community scientific research. If you fully agree with the statement on the left, please give a score of one. If you fully agree with the statement on the right, please give a score of five. The scores between allow you to say how close to either side you are. (On the showcard) Compared with research carried out at national level, research carried out at European level ...

Figure 5.5: **Compared with research carried out at national level, research at European level ..., EC12 average, 1992**



Interviewees had the possibility for each of the statements to give points on a 1-5 scale. The following analysis concentrates on the average score for all respondents.

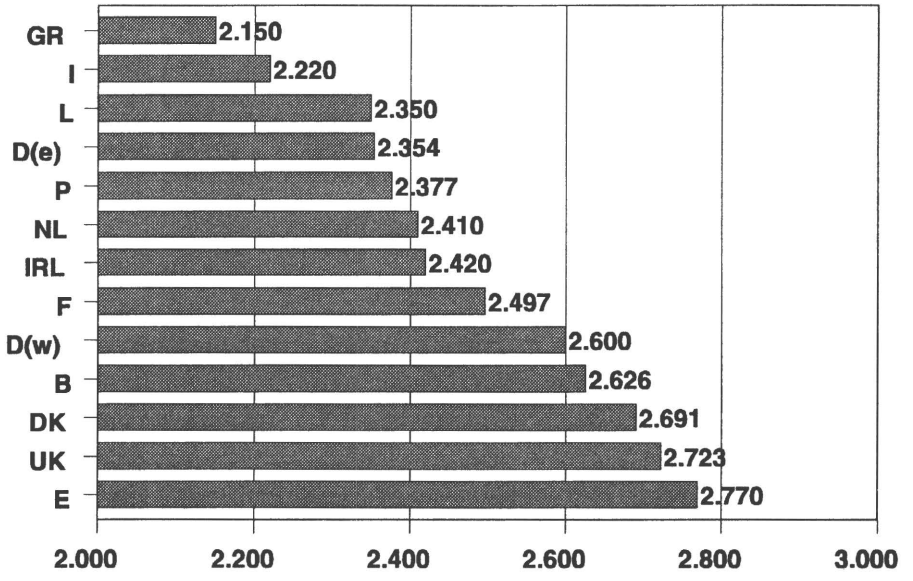
The overall result for European research is positive. European citizens are fully aware of the present and future importance of European research programmes. Figure 5.5 clearly shows that research carried out at the European level is considered as becoming more and more important, as helping to increase industrial competitiveness, and that research at the European level is - in the end - in the national interests of the various Member States. European research is also seen as helpful for economic growth and decreasing disparities between the different countries. The first given statement «(European research) ... saves money» meets with the least consent. Still, more Europeans think that research carried out on a European level is more effective.

For each statement, between 15 and 17 per cent of Europeans say that they «don't know», which illustrates the a sentiment of incertainty about the effects ofEuropean research. The insecurity of how to judge the advantages and for disadvantages of European research is most strongly expressed in Ireland, Greece, Spain and Portugal, where about one third of respondents could not decide for a score on the scale for each of the statements.

In order to get some indication for country-by-country comparision, we calculated the average score for all seven statements together by country. This artifical value can be interpreted as the level of confidence in European research. If the value on figure d is low, the overall result for European research was seen positive.

The North-South division becomes visible again, with the exception of Spain which even outscores Belgium, Denmark and the United Kingdom. The other southern countries (Greece, Italy and Portugal) are to be found among the first five countries, which have the strongest belief in European research. It also becomes apparent that the fact that a large section of the population of some Member States would not voice an opinion on European research does not give an indication of how European research is seen in those countries: Greece, Portugal, Ireland and Spain, where roughly a third of the population did not give its opinion, are found on the first, the fifth, the seventh and the last rank (figure 5.6).

Figure 5.6: Average value for the different statements about research activities of the European Community of countries, 1992



CHAPTER 6

6. Methodological chapter

This report is based upon the results of a EC-wide survey which was in the framework of wave 38.1 of the STANDARD EUROBAROMETER, carried out between November 3 and November 29, 1992 on request of the Commission of the European Communities.

The survey covers the population of the respective nationalities, aged 15 years and over, in each of the Member States of the European Community. Therefore, throughout the report "Europeans" stands for these people surveyed. The basic sample design applied in all Member States is a multi-stage, random (probability) one. In each EC country, a number of sampling points was drawn with probability proportional to population size (for a total coverage of the country) and to population density.

In this methododlogical chapter, we will in more detail explain the questionnaire, the split ballot issue and the basic socio-demographic variables which are used throughout the report to distinguish between groups of European citizens.

6.1. The questionnaire and the split ballot issue

The results of this survey are systematically compared with the survey the European Commission has held in the framework of Eurobarometer 31 in the Spring of 1989. A large part of the questions used then has remained unchanged in order to facilitate comparisons with the new material. Another part has been altered, for the reasons which are explained in this chapter.
In general, efforts have been made to as much as possible enable comparisons with the work of Miller. This, of course without wishing to jeopardize the specifically European nature of this research project.

· Interest and level of informedness:

Questions 50 and 51 have been changed since 1989. Then, "new films" were one of the fields of interest featured. In the present questionnaire, it has been replaced by "environmental pollution", because of the prominence this subject has in this survey. For all other fields of interest, a comparison with the situation in 1989 remains possible.

Reading/watching behaviour for scientific themes:

In 1989, people were only asked whether they read scientific magazines. Now, newspapers and television programmes dedicated to scientific issues are on purpose included.

· **Visits to a number of institutes:**

In 1989, people were asked how often they had visited a science and technology museum, zoo or aquarium or a natural history museum in the last 12 months. In order to place results in a slighly broader framework, public libraries and art museums have been added to the list. That way it is easier to detect the specific role the "science" aspect plays in attracting people.

· **Factual knowledge:**

The questions into people's factual scientific knowledge have largely remained unchanged since 1989. One statement (on the drifting continents) has been rephrased and now includes a little more explanation. Another has been added: "Human beings as we know them today developed from earlier species of animals", replacing a comparable 1989 question which did not fit into the same "quick quizz" approach.

· **The experimental method:**

In 1989, two versions of the same question were presented to half of respondents. One version was situated in the medical sector, the other in the sector of machine construction, but both intended to measure the same thing. The main reason for the two different settings lay in the suspicion that respondents' own experiences with the medical sector would influence answers.

The medical version was worded as follows:

"Suppose a drug used to treat high blood pressure is suspected of having no effect. There are three different ways scientists might use to investigate the problem. Which one do you think scientists would be more likely to use? (One answer only)

1. Talk to those patients that have used the drug to get their opinion
2. Use their own knowledge of medicine to decide how good the drug is
3. Give the drug to some patients but not to others. Then compute the results for each group.

As will be clear from the above, the various answering categories cannot be simply and categorically interpreted as right or wrong.

It does make sense for a doctor to ask patients about their experience with prescribed drugs (first category); it is also no luxury to take his/her professional knowledge into account (second category). One can say that a doctor does not act very scientifically when (s)he only depends on patient input or personal experience. For this reason, the 1992 survey includes two versions of the question, which are rooted in the world of machine construction and each put to half of respondents (for details: see questions 60 A and B in the questionnaire, the only difference being the word "only" which is added to the two first answering categories in version A). As a result of the new approach, the third answering category can indeed be interpreted as "right", and the others as "wrong".

· **Control group:**

In the context of the experimental method, one question (number 59 of the questionnaire) is added which specifically refers to the use of control groups.

· **Understanding the concept of "scientific study":**

After the American research model (Miller,...), the 1989 survey included an open-ended question ("Please tell me, in your own words, what does it mean to study something scientifically?"). As a result of extensive deliberations, this question and the introductory question that goes along with it, are no longer included in the new survey.

The 1989 experience with coding and interpretation have led to this decision. It is no surprise that processing the answers to such a question of 12,800 respondents in nine different languages should create many practical problems. The budgetary angle has also helped to arrive at the decision.

An important consideration favouring the inclusion of this question was the possibility to make comparisons with the aforementioned American research. The fact that the present questionnaire contains many other directly comparable questions has in the end considerably influenced the decision.

· **Attitude questions:**

A lot of attention is being paid to Europeans' opinions and attitudes concerning the importance and significance of science and technology (Questions 62 and 66). The results are described in detail in Chapter 3 of the report.

Methodologically, we should here discuss the scales used. To all statements contained in questions 62 and 66, the split ballot technique is applied. One half of respondents answers on a five-point scale, the other half on a four-point scale. Again, this is done to render possible comparisons with the situation in the United States of America. In the past, European and American research results have been compared, even though the European results were based on a five-point

scale, and the American ones on a four-point scale (**INCLUDE SPECIFIC REFERENCE TO STUDY**). A distortion, caused by the two different methods used, does exist and jeopardizes all direct comparisons.

On the basis of the results gathered in 1992, a comparison can now be made between the Americans and half of European respondents. This is not elaborated in the course of this descriptive report, but as usual, the European Commission makes the research results available for further scientific analysis.
In the report (Chapter 3), all analyses are based on the five-point scale. Here, a few examples are listed to illustrate the distortion mentioned above

As an indication of the above-mentioned process of distortion, we have, for two statements that are included in the questions treated in Chapter 3, recalculated the split ballot results to a common 100-point scale (the maximum therefore being 100).

For the statement "Science and technology are making our lives healthier, easier and more comfortable", the EC12 average for the half of respondents given four answering categories (excluding the neither...nor...option) is 71.1, compared with 73.6 for those respondents able to choose from five categories. For the statement "scientific and technological research cannot play an important role in protecting the environment and repairing it", the respective results are 32.5 (four-point scale results) and 33.3 (five-point scale).

It is not clear how important the 2.5, resp. 0.8 point differences are, and whether there always exists a pattern similar to the one described. Further research into each of the statments is required to fully appreciate the implications merely hinted at in this descriptive way.

· **Environment:**

An important difference with the 1989 report is that this one pays a lot of attention to environmental issues, ranging from respondents' level of awareness and knowledge of the issue to their opinions on the role scientific and technological developments can and do play. Results are featured in Chapter 5.

· **The role of the European Community:**

Most 1989 questions concerning the role the European Community plays in science and technology as well as those concerning the comparison between Europe, the United States and Japan have been kept, albeit with some small changes.

Question 67, on the EC's areas of activity, now specifically contains "science and technology" as a category, whereas in 1989 the term used was "science".

Question 68, on the EC's areas of research, has "nuclear fusion" and "renewable energies" added to the list of categories.

Question 69, comparing opinions on science at the national and international levels, contains a slightly different introduction, as well as two new dimensions: "increases/reduces industrial competitiveness" and "increases/reduces disparities between countries".

In questions 70 and 71, the answering category "technology and industry" has been changed into "technogical advances applied in industry" to create more consistency with the third category.

· **New questions:**

Two new questions remain that have not yet been presented. They are partly derived from **REFERENCE**.

Question 52 compares the status of scientific researchers with that of other professions. And question 58 studies the degrees to which various disciplines are considered to be scientific. Astrology features in this question, while in 1989, it was the subject of a separate question which did not allow for any comparisons with other disciplines.

The split ballot method is also applied to question 58. In one version, the disciplines are just listed, in the other they are accompanied by brief descriptions (e.g. history, that is the study of past events).

· **The order of the questions:**

This has been altered as well in comparison with 1989's questionnaire. Most importantly, the knowledge questions and those establishing the understanding of the scientific method have been asked before the attitude questions. Questions about the EC and the comparison with the United States and Japan were posed at the every end.

6.2. The socio-demographic variables used

Throughout the report, results are not only given on a country-by-country basis, but distinctions are made as well according to the respondents' socio-demographic characteristics. Some of those are very straightforward (sex, age, age of finishing education,...), and do not need any explanation, but others do.

The variable **opinion leadership** is based on the answers to the following two questions: (A) "When you get together with your friends, would you say you discuss political matters frequently, occasionally or never?" and (B) "When you, yourself hold a strong opinion, do you ever find yourself persuading your friends, relatives or fellow workers to share your views? If so, does this happen often, from time to time or rarely?". Labels are: ++, +, -, and --. Interviewees giving affirmative answers to both questions are labelled ++, and are in the text referred to as opinion

leaders. Interviewees giving negative answers to both questions are labelled --, and are in the text referred to as opinion followers. Middle categories are constituted correspondingly.

Self-placement on the political **left-right scale** is based on answers to the question: "In political matters, people talk of the "left" and the "right". How would you place your views on this scale? (Show card. Do not prompt. The 10 boxes of the card are numbered. Ring choice. If contact hesitates, ask him to try again)

LEFT 1 2 3 4 5 6 7 8 9 10 RIGHT

Those who reply are grouped in tertiles of the one third of respondents placing themselves most left, the one third most right and the centre third, for each Member State. The usual weighting according to each country's population aged 15 and more is applied.

The variable **media use** is based upon answers to the following question:

"About how often do you...

... watch the news on television?
... read the news in the daily papers?
... listen to news broadcasts on the radio?

Everyday, several times a week, once or twice a week, less often, never?"

+++	stands for	news on tv, radio and papers everyday or several times a week
++	stands for	two media everyday or several times a week; the third medium not more than once or twice a week
--	stands for	one of the three media everyday or several times a week; the two others, not more than once or twice a week
---	stands for	the three media no more than once or twice a week

The variable **typology of European attitudes** is based upon answers to the following questions:

(1) Generally speaking, do you think that (your country's) membership of the European Community is: a good thing, a bad thing or neither good nor bad? (= MEMBERSHIP)

(2) In general, are you for or against efforts being made to unify Western Europe? For very much, for to some extent, against to some extent, against very much (=UNIFICATION)

People are said to have a positive European attitude when they answer "good" to the membership question and "for, very much" or "for, to some extent" to the unification question. They are said to have a negative European attitude when they answer "bad" to the membership question and "against, to some extent" or "against, very much" to the unification question.

6.3 Sandard EUROBAROMETER 39.0 - Technical Specifications

Between November 3 and November 29 1992, INRA (EUROPE), a European Network of Market- and Public Opinion Research agencies, carried out wave XXXX of the STANDARD EUROBAROMETER, on request of the COMMISSION OF THE EUROPEAN COMMUNITIES.

The EUROBAROMETER 38.1 covers the population of the respective nationalities, aged 15 years and over, in each of the Member States of the European Community. The basic sample design applied in all Member States is a multi-stage, random (probability) one. In each EC country, a number of sampling points was drawn with probability proportional to population size (for a total coverage of the country) and to population density.

For doing so, the points were drawn systematically from all «administrative regional units», after stratification by individual unit and type of area. The thus represent the whole territory of the Member States according to the EUROSTAT-NUTS II and according to the distribution of the national, resident population in terms of metropolitan, urban and rural areas. In each of the selected sampling points, a starting address was drawn, at random. Further addresses were selected as every Nth address by standard random route procedures, from the initial address. In each household, the respondent was drawn, at random. All interviews were face-to-face in people's home and in the appropriate national language.

COUNTRIES	INSTITUTES	N° INTERVIEWS	FIELDWORK	DATES POPULATION 15+ (x000)
Belgium	MARKETING UNIT	1043	09/11 - 20/11	7 994.4
Denmark	GFK DANMARK	1000	05/11 - 24/11	4 160.4
Germany (East)	SAMPLE INSTITUT	1014	10/11 - 22/11	13 607.0
Germany (West)	SAMPLE INSTITUT	1018	10/11 - 24/11	51 708.0
Greece	KEME	1003	09/11 - 23/11	7 825.6
Spain	CIMEI	1021	06/11 - 22/11	29 427.2
France	TMO Consultants	1008	09/11 - 23/11	43 318.5
Ireland	LANSDOWNE Market Research	1000	10/11 - 30/11	2 583.0
Italy	PRAGMA	1021	10/11 - 23/11	45 902.8
Luxembourg	ILRES	500	02/11 - 27/11	302.6
The Netherlands	NIPO	1022	09/11 - 27/11	11 603.6
Portugal	NORMA	1000	09/11 - 23/11	7 718.7
Great Britain	NOP Corporate and Financial	1066	04/11 - 23/11	44 562.0
Northern Ireland	ULSTER MARKETING SERVICES	308	09/11 - 22/11	1 159.1

For each country a comparison between the sample and the universe was carried out. The Universe description was derived from EUROSTAT population data. For all EC member-countries a national weighting procedure, using marginal and intercellular weighting, was carried out based on this Universe description. As such in all countries, minimum sex, age, region NUTS II and size of locality were introduced in the iteration procedure. For international weighting (i.e. EC aver-

ages), INRA (EUROPE) applies the official population figures as published by EUROSTAT in the Regional Statistics Yearbook of 1989. The total population figures for input in this post-weighting procedure are listed above.
The results of the EUROBAROMETER studies are reported in the form of tables, datafiles and analyses. Per question a table of results is given with the full question text (English and French) on top; the results are expressed 1) as a percentage on total base and 2) as a percentage on the number of «valid» responses (i.e. «Don't Know» and «No Answer» excluded). All EUROBAROMETER datafiles are stored at the Zentral Archiv (Universität Köln, Bachemer Strasse, 40, D-5000 Köln 41). They are at the disposal of all institutes members of the European Consortium for Political Research (Essex), of the Inter-University Consortium for Political and Social Research (Michigan) and of all those interested in social science research.
Readers are reminded that survey results are estimations, the accuracy of which, everything being equal, rests upon the sample size and upon the observed percentage. With samples of about 1.000 interviews, the real percentages vary within the following confidence limits :

Observed percentages	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
Confidence limits	± 1.9%	± 2.5%	± 2.7%	± 3.0%	± 3.1%

APPENDIX

QUESTIONNAIRE EUROBAROMETER 38.1 - 1992

and

TABLES

QUESTIONNAIRE

Standard Eurobarometer 38.1
Field Questionnaire

Q.11
About how often do you ... (show card **)
a) watch the news on television ?
b) read the news in daily papers ?
c) listen to the news on the radio ?

Q.50
Let us talk now about those issues in the news which interest you. For each issue I read out, please tell me if you are very interested, moderately interested or not at all interested in it ?

VERY INTERESTED
MODERATELY INTERESTED
NOT AT ALL INTERESTED
DK

- Sports news
- Politics
- New medical discoveries
- Environmental pollution
- New inventions and technologies
- New scientific discoveries

Q.51
I would like you to tell me for each of the following issues in the news if you are very well informed, moderately well informed or poorly informed about it ?

VERY WELL
MODERATELY WELL
POORLY
DK

- Sports news
- Politics
- New medical discoveries
- Environmental pollution
- New inventions and technologies
- New scientific discoveries

Q.52
a) Which one of the following professions do you respect the most ?
b) And the second most ?
c) And which one do you respect the least ?

MOST
SECOND
LEAST

Judges
Medical doctors
Lawyers
Scientific researchers
Businessmen
Journalists
Bankers
Engineers
Architects
None (SPONTANEOUS)
DK

Q.53
a) Do you ever read articles on science in newspapers ? (IF YES) Is it regularly, occasionally or hardly ever ?
b) Do you watch TV programmes on Science & Technology such as (EXAMPLES FOR EACH MEMBER STATE). (IF YES) Is it regularly, occasionally or hardly ever ?
c) Do you read any scientific magazines, such as (EXAMPLES FOR EACH MEMBER STATE) ?
(IF YES) Is it regularly, occasionally or hardly ever ?

ARTICLES ON SCIENCE IN NEWSPAPERS
SCIENCE PROGRAMS ON TV
SCIENTIFIC MAGAZINES

Yes, regularly
Yes, occasionally
Yes, but hardly ever
No, never
DK

Q.54
Now, let me ask you about your visits to museums, zoos and other cultural institutions. Can you tell me how many times, in the last twelve months, you have visited each type of place that I am going to read out ? If you have never been there, say "none".

NONE
ONCE OR TWICE
THREE OR MORE TIMES
DK

- A science and technology museum
- A zoo or aquarium
- A natural history museum
- A public library
- An art museum

Q.55
Here is a quick quiz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.

TRUE
FALSE
DK

- The centre of the earth is very hot
- The oxygen we breath comes from plants
- Radioactive milk can be made safe by boiling it
- Electrons are smaller than atoms
- The continents on which we live have been moving their location for millions of years and will continue to move in the future
- It is the father's gene which decides whether the baby is a boy or a girl
- The earliest humans lived at the same time as the dinosaurs
- Antibiotics kill viruses as well as bacteria
- Lasers work by focusing sound waves
- All radioactivity is man-made
- Human beings, as we know them today, developed from earlier species of animals

Q.56
Does the earth go around the sun or does the sun go around the earth ?

- The earth goes around the sun
GO TO Q.57
- The sun goes around the earth
GO TO Q.58
- DK
GO TO Q.58

Q.57 (IF CODE 1 TO QUESTION 56)
How long does it take for the earth to go around the sun ?

- One day,
- One month,
- One year,
- Other answers,
- DK

Q.58 (SPLIT BALLOT A)

People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is "very scientific" and number 1 that it is "not at all scientific". The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.

- a) Biology, that is the study of life
- b) Astronomy, that is the study of the heavenly bodies
- c) History, that is the study of past events
- d) Physics, that is the study of properties and interactions of matter and energy
- e) Astrology, that is the study of occult influence of stars, planets etc. on human affairs
- f) Economics, that is the study of the production and distribution of wealth
- g) Medicine, that is the study of preserving and restoring health
- h) Psychology, that is the study of the human mind

Q.58 (SPLIT BALLOT B)
People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is "very scientific" and number 1 that it is "not at all scientific". The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.

- a) Biology,
- b) Astronomy,
- c) History,
- d) Physics,
- e) Astrology,
- f) Economics,
- g) Medicine,
- h) Psychology,

Q.59
Let us imagine that two scientists want to know if a certain drug is effective against high blood pressure.

A. The first scientist wants to give the drug to 1000 people with high blood pressure and see how many of them experience lower blood pressure levels.
B. The second scientist wants to give this drug to 500 people with high blood pressure, and not give this drug to another 500 people with high blood pressure, and see how many in both groups experience lower blood pressure levels.
In your opinion, which is the better way to test this drug ?

- A. First scientist - all 1000 get drug,
- B. Second scientist - 500 get drug, 500 don't get drug,
- DK

Q.60 (SPLIT BALLOT A)
Suppose a machine is breaking down repeatedly. It is suspected that the material from which a particular part is made, is responsible for the breakdowns. There are different ways of investigating this problem. Which one do you think scientists would be most likely to use ?

- Only talk to the machine operators and get their opinion
- Only use their own scientific knowledge to decide how good the material is
- Make the same part from different materials, put them in the machine, one after the other, and then compare what happens in each case
- DK

Q.60 (SPLIT BALLOT B)
Suppose a machine is breaking down repeatedly. It is suspected that the material from which a particular part is made, is responsible for the breakdowns. There are different ways of investigating this problem.
a) Which one do you think scientists would be most likely to use ?
b) And which next ?

FIRST
NEXT

- Talk to the machine operators and get their opinion
- Use their own scientific knowledge to decide how good the material is
- Make the same part from different materials, put them in the machine, one after the other, and then compare what happens in each case
- DK

Q.61
Suppose doctors tell a couple that their genetic make-up means that they've got a one in four chance of having a child with an inherited illness. Does this mean that...

- If they have only three children, none will have the illness,
- If their first child has the illness, the next three will not,
- Each of the couples' children has the same risk of suffering from the illness,
- If their first three children are healthy, the fourth will have the illness,
- DK

Q.62 (SPLIT BALLOT A)
I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree.

STRONGLY AGREE
AGREE TO SOME EXTENT
NEITHER AGREE NOR DISAGREE
DISAGREE TO SOME EXTENT
STRONGLY DISAGREE
DK

- a) Science and technology are making our lives healthier, easier and more comfortable.
- b) Thanks to scientific and technological advances, the Earth's natural resources will be inexhaustible.
- c) We depend too much on science and not enough on faith.
- d) Scientific and technological research cannot play an important role in protecting the environment and repairing it.
- e) Scientists should be allowed to do research that causes pain and injury to animals like dogs and chimpanzees if it can produce new information about serious human health problems.
- f) Technological progress will make possible higher levels of consumption and, at the same time, an unpolluted environment.
- g) Because of their knowledge, scientific researchers have a power that makes them dangerous.
- h) The application of science and new technology, will make work more interesting.
- i) For me, in my daily life, it is not important to know about science .
- j) Most scientists want to work on things that will make life better for the average person.
- k) Science makes our way of life change too fast.
- l) Thanks to science and technology, there will be more opportunities for the future generations.

Q.62 (SPLIT BALLOT B)
I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree.

STRONGLY AGREE
AGREE TO SOME EXTENT
DISAGREE TO SOME EXTENT
STRONGLY DISAGREE
DK

- a) Science and technology are making our lives healthier, easier and more comfortable.
- b) Thanks to scientific and technological advances, the Earth's natural resources will be inexhaustible.
- c) We depend too much on science and not enough on faith.
- d) Scientific and technological research cannot play an important role in protecting the environment and repairing it.
- e) Scientists should be allowed to do research that causes pain and injury to animals like dogs and chimpanzees if it can produce new information about serious human health problems.
- f) Technological progress will make possible higher levels of consumption and, at the same time, an unpolluted environment.
- g) Because of their knowledge, scientific researchers have a power that makes them dangerous.
- h) The application of science and new technology, will make work more interesting.
- i) For me, in my daily life, it is not important to know about science .
- j) Most scientists want to work on things that will make life better for the average person.
- k) Science makes our way of life change too fast.
- l) Thanks to science and technology, there will be more opportunities for the future generations.

Q.63
In recent years, newspapers and TV have sometimes talked about to the following issues.
For each of the following, could you tell me whether you have a clear understanding of what it means, a general sense of what it means or little understanding of what it means ?

CLEAR UNDERSTANDING
GENERAL SENSE
LITTLE UNDERSTANDING
DK

- a) Acid rain
- b) Air pollution
- c) Global warming
- d) The hole in the ozone layer
- e) The greenhouse effect

Q.64
Could you please tell me where you think the hole in the ozone layer is located ?

- Over the Amazonian forest,
- Over the Antarctic,
- Over the Arctic,
- Over the North Pole,

- Over the South Pole,
- Over the poles,
- Over the Sahara desert,
- Over Africa,
- Over Asia,
- Over the Sea,
- Other answers,
- DK

Q.65.Could you please tell me if you think the following statements are true or false ?

TRUE
FALSE
DK

- a) The hole in the ozone layer can cause skin cancer
- b) The greenhouse effect can reduce the deserts
- c) The greenhouse effect can raise the sea level
- d) Acid rain can cause damage to the forests
- e) Car exhausts have nothing to do with acid rain

Q.66 (SPLIT BALLOT A)
Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree ?

STRONGLY AGREE
AGREE TO SOME EXTENT
NEITHER AGREE NOR DISAGREE
DISAGREE TO SOME EXTENT
STRONGLY DISAGREE
DK

- a. New technology does not depend on basic scientific research.
- b. On balance, computers and factory automation will create more jobs than they will eliminate.
- c. Even if it brings no immediate benefits, scientific research which advances the frontiers of knowledge is necessary and should be supported by the government.
- d. Scientific and technological research do not play an important role in industrial development.
- e. Some numbers are especially lucky for some people.
- f. New inventions will always be found to counteract any harmful consequences of scientific and technological development.
- g. Scientific research does not make industrial products cheaper.
- h. Only by applying the most modern technology can our economy become more competitive.
- i. Computers have made the use of bank services more complicated .

- j. Scientific and technological progress will help to cure illnesses such as AIDS, cancer,...
- k. The benefits of science are greater than any harmful effects it may have.

Q.66 (SPLIT BALLOT B)
Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree ?

STRONGLY AGREE
AGREE TO SOME EXTENT
DISAGREE TO SOME EXTENT
STRONGLY DISAGREE
DK

- a. New technology does not depend on basic scientific research.
- b. On balance, computers and factory automation will create more jobs than they will eliminate.
- c. Even if it brings no immediate benefits, scientific research which advances the frontiers of knowledge is necessary and should be supported by the government.
- d. Scientific and technological research do not play an important role in industrial development.
- e. Some numbers are especially lucky for some people.
- f. New inventions will always be found to counteract any harmful consequences of scientific and technological development.
- g. Scientific research does not make industrial products cheaper.
- h. Only by applying the most modern technology can our economy become more competitive.
- i. Computers have made the use of bank services more complicated .
- j. Scientific and technological progress will help to cure illnesses such as AIDS, cancer,...
- k. The benefits of science are greater than any harmful effects it may have.

Q. 67
In which of the following areas is the European Community itself active?

- Agriculture
- Energy
- Science and technology
- Environment
- Defence
- None of these
- DK

Q.68 (IF SCIENCE AND TECHNOLOGY : CODE 3 IN Q.67)
In which of the following areas of research is the European Community itself active ?

- Telecommunications,
- New techniques of industrial production,
- New agricultural techniques,
- Civil nuclear energy,
- Biotechnology,
- Psychological research,
- Environmental research,
- Information technology,
- Robotics,
- Research into the origin and nature of the universe,
- Nuclear fusion,
- Renewable energies,
- DK

Q.69
Now a comparison between separate national and common European Community scientific research. If you fully agree with the statement on the left, please give a score of one.
If you fully agree with the statement on the right, please give a score of five.
The scores in between allow you to say how close to either side you are.

- Wastes money 1/2/3/4/5 Saves money

- Is more effective Is less effective

- Will become less and less important Will become more and more important

- Is very helpful to economic growth Is very unhelpful to economic growth

- Is against the national interest Is in the national interest

- Increases industrial competitiveness Reduces industrial competitiveness

- Increases disparities between countries Decreases disparities between countries

Q.70
For each of the following fields, could you tell me whether you think Europe is ahead of, behind, or at the same level as the United States ?

AHEAD
BEHIND
SAME LEVEL
DK

- Scientific discoveries
- Technological advances applied in industry
- Technological advances applied in everyday life

Q.71
For the same fields, could you tell me whether you think Europe is ahead of, behind, or at the same level as Japan ?

AHEAD
BEHIND
SAME LEVEL
DK

- Scientific discoveries
- Technological advances applied in industry
- Technological advances applied in everyday life

Q.72
I am now going to ask you whether, in your opinion, Europe, the United States or Japan is most ahead in each of the following. If you have no particular view on an issue, please tell me and we will move onto the following one. In your opinion, ... ?

EUROPE
U.S.A.
JAPAN
DK

- Who has the best educated scientists ?
- Who spends the most on scientific research ?
- Who is most successful in turning scientific discoveries into useful products ?
- Who is best at co-ordinating research carried out by different bodies such as private industry, universities, research laboratories ?

TABLES

Chapter 1 - Table 1

Question 11: **About how often do you ...**
... watch the news on television?
... read the news in the daily papers?
... listen to the news on the radio?

(% of people keeping up with the news on a daily basis)

	TELEVISION	DAILY PAPERS	RADIO
COUNTRY			
Belgium	60	35	47
Denmark	62	63	72
Germany	75	69	62
Greece	70	26	28
Spain	63	28	36
France	55	30	40
Ireland	69	48	65
Italy	79	31	24
Luxembourg	67	65	68
the Netherlands	77	65	55
Portugal	58	17	31
United Kingdom	76	58	49
SEX			
male	71	51	46
female	70	42	43
AGE			
15-24 years	50	29	36
25-39 years	64	42	44
40-54 years	76	53	47
55 years & over	84	55	49
AGE OF FINISHING EDUCATION			
up to 15 years	77	45	41
16-19 years	71	51	49
20+ years	68	50	51
still studying	50	27	33
INCOME			
++ high	72	57	54
+	69	46	46
-	71	44	44
-- low	72	42	43
EC12+	70	46	45
OPINION LEADERSHIP			
++ high	79	60	55
+	72	48	47
-	68	45	43
-- low	64	34	36

Chapter 1 - Table 2a

Question 50: **Let us talk now about those issues in the news which interest you. For each issue I read out, please tell me if you are very interested, moderately interested or not at all interested in it?**
The non-scientific issues
(% of people who say that they are very interested in the issues)

	SPORTS	POLITICS
COUNTRY		
Belgium	26	21
Denmark	32	41
Germany	32	41
Greece	27	50
Spain	27	14
France	26	25
Ireland	39	20
Italy	29	22
Luxembourg	28	34
the Netherlands	31	35
Portugal	18	12
United Kingdom	28	24
SEX		
male	48	35
female	11	21
AGE		
15-24 years	37	19
25-39 years	29	26
40-54 years	29	35
55 years & over	23	30
AGE OF FINISHING EDUCATION		
up to 15 years	25	21
16-19 years	30	27
20+ years	27	46
still studying	38	24
INCOME		
++ high	31	42
+	31	30
-	30	25
-- low	22	21
EC12+	29	28
OPINION LEADERSHIP		
++ high	33	69
+	33	32
-	27	19
-- low	21	7

Chapter 1 - Table 2b

Question 50: **Let us talk now about those issues in the news which interest you. For each issue I read out, please tell me if you are very interested, moderately interested or not at all interested in it?**
The scientific issues
(% of people who say that they are very interested in the issues)

	MEDICAL DISCO-VERIES	NEW INVENTIONS AND TECH-NOLOGIES	NEW SCIENTIFIC DISCOVERIES	ENVIRON-MENTAL POLLUTION
COUNTRY				
Belgium	36	28	29	42
Denmark	39	36	39	61
Germany	35	25	26	55
Greece	55	44	46	74
Spain	39	33	37	50
France	58	42	46	59
Ireland	37	30	29	39
Italy	45	39	45	65
Luxembourg	46	36	37	63
the Netherlands	57	44	41	63
Portugal	29	21	22	37
United Kingdom	51	39	41	50
SEX				
male	39	43	42	54
female	50	27	34	57
AGE				
15-24 years	39	37	40	57
25-39 years	46	38	40	59
40-54 years	48	36	38	59
55 years & over	45	29	33	50
AGE OF FINISHING EDUCATION				
up to 15 years	40	26	27	48
16-19 years	47	35	38	57
20+ years	54	49	53	66
still studying	40	40	47	61
INCOME				
++ high	49	44	47	62
+	48	39	41	59
-	44	33	36	55
-- low	40	26	29	49
EC12+	45	35	38	56
OPINION LEADERSHIP				
++ high	55	49	50	70
+	47	38	43	61
--- low	44	31	34	53
	35	24	25	42

Chapter 1 - Table 3a

Question 51: **I would like you to tell me for each of the following issues in the news if you are very well informed, moderatly well informed or poorly informed about it?**

(% of people very well informed about non-scientific issues)

	SPORTS	POLITICS
COUNTRY		
Belgium	24	15
Denmark	31	31
Germany	26	24
Greece	21	32
Spain	27	11
France	21	20
Ireland	34	22
Italy	25	15
Luxembourg	29	23
the Netherlands	25	21
Portugal	11	5
United Kingdom	35	27
SEX		
male	42	28
female	12	13
AGE		
15-24 years	34	15
25-39 years	27	20
40-54 years	26	23
55 years & over	20	21
AGE OF FINISHING EDUCATION		
up to 15 years	23	15
16-19 years	28	21
20+ years	23	32
still studying	35	17
INCOME		
++ high	29	30
+	28	21
-	26	18
-- low	20	15
EC12+	26	20
OPINION LEADERSHIP		
++ high	30	48
+	30	22
-	24	14
-- low	20	8

Chapter 1 - Table 3b

Question 51: **I would like you to tell me for each of the following issues in the news if you are very well informed, moderatly well informed or poorly informed about it?**

(% of people very well informed about scientific & technological issues)

	NEW MEDICAL DISCOVERIES	NEW INVENTIONS AND TECHNOLOGIES	NEW SCIENTIFIC DISCOVERIES	ENVIRONMENTAL POLLUTION
COUNTRY				
Belgium	14	11	9	24
Denmark	11	12	11	27
Germany	10	7	7	26
Greece	11	8	8	29
Spain	7	7	6	16
France	20	14	16	30
Ireland	8	8	7	14
Italy	11	9	9	28
Luxembourg	16	13	13	34
the Netherlands	15	12	10	31
Portugal	6	4	4	14
United Kingdom	13	11	10	23
SEX				
male	10	13	12	25
female	14	6	7	25
AGE				
15-24 years	11	11	11	29
25-39 years	12	10	9	26
40-54 years	11	9	10	23
55 years & over	15	8	9	24
AGE OF FINISHING EDUCATION				
up to 15 years	10	6	6	19
16-19 years	13	9	9	26
20+ years	16	16	16	32
still studying	10	11	12	32
INCOME				
++ high	14	12	12	30
+	12	10	10	26
-	12	9	9	23
-- low	12	7	8	21
EC12+	12	9	9	25
OPINION LEADERSHIP				
++ high	18	14	14	35
+	13	10	11	28
-	12	8	8	24
-- low	9	7	6	15

Chapter 1 - Table 4

Question 53:

A - **Do you ever read articles on science in in newpapers?**

B - **Do you ever watch TV-programmes on Science & Technology, such as (examples for each Member State)?**

C - **Do you read any scientific magazines, such as (examples for each Member State)?**

(% of people regularly reading/watching)

	A	B	C
COUNTRY			
Belgium	11	12	6
Denmark	14	16	14
Germany	8	12	5
Greece	9	12	4
Spain	13	11	7
France	11	17	7
Ireland	8	13	2
Italy	10	17	5
Luxembourg	13	11	7
the Netherlands	23	24	7
Portugal	7	8	4
United Kingdom	13	29	4
SEX			
male	15	19	7
female	8	15	4
AGE			
15-24 years	10	15	7
25-39 years	12	16	6
40-54 years	12	18	6
55 years & over	10	17	4
AGE OF FINISHING EDUCATION			
up to 15 years	6	13	2
16-19 years	10	17	4
20+ years	23	25	13
still studying	13	16	10
INCOME			
++ high	18	23	9
+	12	15	5
-	9	18	5
-- low	7	13	3
EC12+	11	17	6
OPINION LEADERSHIP			
++ high	20	25	11
+	13	17	6
-	9	15	4
-- low	6	12	3

Chapter 1 - Table 5

Question 54: Now, let me ask you about your visits to museums, zoos and other cultural institutions. Can you tell me how many times, in the last twelve months, you have visited each type of place that I am going to read out?

(% of people having visited each type at least once in the last twelve months)

A - science and technology museum
B - zoo/aquarium
C - natural history museum
D - public library
E - art museum

		A	B	C	D	E
COUNTRY						
	Belgium	20	33	21	40	30
	Denmark	25	40	22	73	40
	Germany	19	47	24	36	24
	Greece	10	27	8	19	17
	Spain	19	33	16	42	32
	France	21	43	21	39	34
	Ireland	11	30	20	50	21
	Italy	14	24	15	33	30
	Luxembourg	19	34	23	25	30
	the Netherlands	17	45	26	58	32
	Portugal	9	29	12	23	17
	United Kingdom	19	37	21	67	25
SEX						
	male	21	36	20	41	28
	female	15	39	20	44	28
AGE						
	15-24 years	25	41	24	62	33
	25-39 years	20	49	21	47	30
	40-54 years	18	38	22	40	31
	55 years & over	11	24	15	28	21
AGE OF FINISHING EDUCATION						
	up to 15 years	8	25	12	25	14
	16-19 years	17	34	21	44	26
	20+ years	31	45	30	55	49
	still studying	32	40	28	76	45
INCOME						
	++ high	28	47	29	53	42
	+	19	42	19	44	29
	-	14	36	17	40	23
	-- low	11	30	14	32	20
EC12+		18	35	20	43	28
OPINION LEADERSHIP						
	++ high	26	38	27	52	42
	+	21	40	23	47	32
	-	15	38	18	41	25
	-- low	11	29	12	30	16

Chapter 2 - Table 1a

Question 58: **People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is «very scientific» and number 1 that it is «not at all scientific». The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.**

(average value on a five point scale)

	BIOLOGY	BIOLOGY (with explanation)
COUNTRY		
Belgium	4.31	4.33
Denmark	4.05	4.20
Germany	4.42	4.36
Greece	4.62	4.68
Spain	4.20	4.28
France	4.29	4.27
Ireland	4.12	4.08
Italy	4.37	4.48
Luxembourg	4.17	4.26
the Netherlands	3.85	4.17
Portugal	4.24	4.23
United Kingdom	3.89	4.02
SEX		
male	4.32	4.29
female	4.16	4.29
AGE		
15-24 years	4.16	4.24
25-39 years	4.29	4.22
40-54 years	4.27	4.33
55 years & over	4.21	4.36
AGE OF FINISHING EDUCATION		
up to 15 years	4.10	4.21
16-19 years	4.22	4.23
20+ years	4.49	4.51
still studying	4.29	4.37
INCOME		
++ high	4.41	4.39
+	4.30	4.36
-	4.20	4.22
-- low	4.14	4.23
EC12+	4.24	4.29
OPINION LEADERSHIP		
++ high	4.46	4.54
+	4.28	4.36
-	4.18	4.21
-- low	4.07	4.10

Chapter 2 - Table 1b

Question 58: **People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is «very scientific» and number 1 that it is «not at all scientific». The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.**

(average value on a five point scale)

	ASTRONOMY	ASTRONOMY (with explanation)
COUNTRY		
Belgium	4.04	4.21
Denmark	4.31	4.45
Germany	4.16	4.27
Greece	4.53	4.51
Spain	4.10	4.28
France	4.14	4.22
Ireland	3.88	3.84
Italy	4.16	4.27
Luxembourg	4.12	4.09
the Netherlands	4.01	4.30
Portugal	4.16	4.11
United Kingdom	3.80	3.69
SEX		
male	4.11	4.19
female	4.06	4.15
AGE		
15-24 years	4.13	4.17
25-39 years	4.10	4.11
40-54 years	4.04	4.22
55 years & over	4.08	4.18
AGE OF FINISHING EDUCATION		
up to 15 years	3.52	3.95
16-19 years	4.04	4.15
20+ years	4.37	4.46
still studying	4.24	4.38
INCOME		
++ high	4.20	4.27
+	4.12	4.21
-	4.04	4.13
-- low	3.99	4.10
EC12+	4.09	4.16
OPINION LEADERSHIP		
++ high	4.28	4.36
+	4.14	4.25
-	4.06	4.10
-- low	3.86	3.94

Chapter 2 - Table 1c

Question 58: **People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is «very scientific» and number 1 that it is «not at all scientific». The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.**

(average value on a five point scale)

	HISTORY	HISTORY (with explanation)
COUNTRY		
Belgium	2.68	2.95
Denmark	2.95	3.19
Germany	3.41	3.62
Greece	3.92	3.96
Spain	2.39	2.75
France	2.21	2.40
Ireland	1.96	2.03
Italy	2.15	2.37
Luxembourg	3.51	3.50
the Netherlands	2.82	3.32
Portugal	3.32	3.47
United Kingdom	1.93	2.18
SEX		
male	2.59	2.84
female	2.59	2.83
AGE		
15-24 years	2.51	2.72
25-39 years	2.56	2.71
40-54 years	2.58	2.98
55 years & over	2.67	2.91
AGE OF FINISHING EDUCATION		
up to 15 years	2.58	2.84
16-19 years	2.53	2.80
20+ years	2.73	2.99
still studying	2.57	2.68
INCOME		
++ high	2.68	2.87
+	2.58	2.91
-	2.53	2.89
-- low	2.73	2.95
EC12+	2.59	2.83
OPINION LEADERSHIP		
++ high	2.86	2.99
+	2.53	2.86
-	2.56	2.80
-- low	2.54	2.72

Chapter 2 - Table 1d

Question 58: **People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is «very scientific» and number 1 that it is «not at all scientific». The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.**

(average value on a five point scale)

	PHYSICS	PHYSICS (with explanation)
COUNTRY		
Belgium	4.42	4.49
Denmark	4.57	4.62
Germany	4.61	4.56
Greece	4.73	4.75
Spain	4.51	4.63
France	4.51	4.59
Ireland	4.29	4.42
Italy	4.41	4.56
Luxembourg	4.35	4.31
the Netherlands	4.52	4.54
Portugal	4.39	4.39
United Kingdom	4.45	4.57
SEX		
male	4.53	4.59
female	4.49	4.55
AGE		
15-24 years	4.54	4.56
25-39 years	4.51	4.55
40-54 years	4.54	4.62
55 years & over	4.46	4.55
AGE OF FINISHING EDUCATION		
up to 15 years	4.33	4.44
16-19 years	4.53	4.60
20+ years	4.71	4.73
still studying	4.63	4.62
INCOME		
++ high	4.70	4.70
+	4.55	4.62
-	4.45	4.50
-- low	4.36	4.50
EC12+	4.51	4.57
OPINION LEADERSHIP		
++ high	4.69	4.70
+	4.57	4.64
-	4.45	4.52
-- low	4.36	4.42

Chapter 2 - Table 1e

Question 58: **People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is «very scientific» and number 1 that it is «not at all scientific». The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.**

(average value on a five point scale)

	ASTROLOGY	ASTROLOGY (with explanation)
COUNTRY		
Belgium	3.27	3.16
Denmark	3.36	3.25
Germany	3.11	3.27
Greece	3.72	3.65
Spain	3.43	3.43
France	2.71	2.90
Ireland	3.37	3.34
Italy	2.63	2.57
Luxembourg	3.16	3.18
the Netherlands	2.98	2.89
Portugal	3.68	3.59
United Kingdom	2.70	2.62
SEX		
male	2.85	2.91
female	3.07	3.08
AGE		
15-24 years	2.93	2.99
25-39 years	2.88	2.87
40-54 years	2.91	3.07
55 years & over	3.11	3.06
AGE OF FINISHING EDUCATION		
up to 15 years	3.18	3.22
16-19 years	3.01	3.03
20+ years	2.60	2.59
still studying	2.79	2.89
INCOME		
++ high	2.71	2.74
+	2.93	2.97
-	2.99	3.13
-- low	3.22	3.23
EC12+	2.96	2.99
OPINION LEADERSHIP		
++ high	2.68	2.82
+	2.88	2.94
-	3.07	3.04
-- low	3.17	3.15

Chapter 2 - Table 1f

Question 58: **People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is «very scientific» and number 1 that it is «not at all scientific». The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.**

(average value on a five point scale)

	ECONOMICS	ECONOMICS (with explanation)
COUNTRY		
Belgium	2.93	3.02
Denmark	2.74	2.88
Germany	3.60	3.40
Greece	4.09	4.04
Spain	2.39	2.75
France	2.36	2.55
Ireland	2.17	2.16
Italy	2.48	2.73
Luxembourg	3.31	3.31
the Netherlands	3.24	3.34
Portugal	3.25	3.30
United Kingdom	2.19	2.20
SEX		
male	2.76	2.87
female	2.80	2.85
AGE		
15-24 years	2.60	2.72
25-39 years	2.72	2.74
40-54 years	2.86	3.01
55 years & over	2.89	2.95
AGE OF FINISHING EDUCATION		
up to 15 years	2.74	2.84
16-19 years	2.70	2.79
20+ years	2.99	3.09
still studying	2.78	2.77
INCOME		
++ high	2.92	2.90
+	2.76	2.87
-	2.76	2.92
-- low	2.85	3.01
EC12+	2.78	2.86
OPINION LEADERSHIP		
++ high	3.06	3.06
+	2.78	2.94
-	2.69	2.82
-- low	2.72	2.62

Chapter 2 - Table 1g

Question 58: **People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is «very scientific» and number 1 that it is «not at all scientific». The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.**

(average value on a five point scale)

	MEDICINE	MEDICINE (with explanation)
COUNTRY		
Belgium	4.44	4.51
Denmark	4.59	4.56
Germany	4.69	4.58
Greece	4.90	4.87
Spain	4.47	4.59
France	4.39	4.41
Ireland	4.49	4.39
Italy	4.48	4.54
Luxembourg	4.52	4.53
the Netherlands	4.49	4.53
Portugal	4.47	4.38
United Kingdom	4.43	4.63
SEX		
male	4.51	4.55
female	4.53	4.55
AGE		
15-24 years	4.48	4.47
25-39 years	4.53	4.56
40-54 years	4.53	4.59
55 years & over	4.53	4.57
AGE OF FINISHING EDUCATION		
up to 15 years	4.51	4.58
16-19 years	4.54	4.56
20+ years	4.52	4.54
still studying	4.46	4.47
INCOME		
++ high	4.54	4.58
+	4.56	4.57
-	4.52	4.56
-- low	4.48	4.52
EC12+	4.52	4.55
OPINION LEADERSHIP		
++ high	4.63	4.62
+	4.51	4.56
-	4.51	4.53
-- low	4.46	4.53

Chapter 2 - Table 1h

Question 58: **People can have different opinions about what is scientific and what is not. I am going to read out a list of subjects. For each one tell me how scientific you think it is by the scale on this card. Number 5 means that you think it is «very scientific» and number 1 that it is «not at all scientific». The other numbers mean somewhere in between. Just tell me for each subject the number you think best describes how scientific the subject is. If you have never heard of the subject don't hesitate to say so.**

(average value on a five point scale)

	PSYCHOLOGY	PSYCHOLOGY (with explanation)
COUNTRY	3.38	3.48
Belgium	3.55	3.82
Denmark	4.02	4.02
Germany	4.50	4.42
Greece	3.22	3.54
Spain	3.02	3.02
France	3.59	3.76
Ireland	3.07	3.40
Italy	3.98	3.99
Luxembourg	3.68	3.79
the Netherlands	3.88	3.72
Portugal	2.97	3.39
United Kingdom		
SEX	3.37	3.48
male	3.43	3.65
female		
AGE	3.29	3.46
15-24 years	3.38	3.44
25-39 years	3.39	3.66
40-54 years	3.52	3.68
55 years & over		
AGE OF FINISHING EDUCATION	3.57	3.75
up to 15 years	3.36	3.52
16-19 years	3.27	3.47
20+ years	3.20	3.33
still studying		
INCOME	3.35	3.46
++ high	3.35	3.60
+	3.33	3.52
-	3.59	3.79
-- low		
EC12+	3.40	3.57
OPINION LEADERSHIP	3.52	3.60
++ high	3.32	3.57
+	3.46	3.54
-	3.38	3.57
-- low		

Chapter 2 - Table 2a

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: **The centre of the earth is very hot.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	90	3	7
Denmark	91	3	6
Germany	93	4	4
Greece	75	3	22
Spain	81	4	15
France	87	5	7
Ireland	82	6	12
Italy	82	4	15
Luxembourg	84	4	12
the Netherlands	87	4	10
Portugal	71	7	22
United Kingdom	88	4	8
SEX			
male	91	3	6
female	82	5	13
AGE			
15-24 years	89	5	6
25-39 years	88	4	8
40-54 years	87	3	10
55 years & over	83	4	14
AGE OF FINISHING EDUCATION			
up to 15 years	78	5	17
16-19 years	89	4	7
20+ years	95	3	3
still studying	92	4	5
INCOME			
++ high	93	3	4
+	89	4	7
-	85	5	11
-- low	81	5	14
EC12+	86	4	10
OPINION LEADERSHIP			
++ high	92	3	5
+	90	4	7
-	85	4	11
-- low	78	5	16

Chapter 2 - Table 2b

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: **The oxygen we breathe comes from plants.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	72	20	9
Denmark	89	8	4
Germany	82	12	5
Greece	85	8	7
Spain	73	17	11
France	79	15	7
Ireland	68	19	14
Italy	82	13	6
Luxembourg	85	7	7
the Netherlands	84	11	6
Portugal	86	5	9
United Kingdom	81	12	6
SEX			
male	83	12	5
female	78	14	9
AGE			
15-24 years	83	13	4
25-39 years	79	15	6
40-54 years	82	13	5
55 years & over	78	11	10
AGE OF FINISHING EDUCATION			
up to 15 years	78	11	11
16-19 years	80	14	6
20+ years	82	15	3
still studying	84	14	3
INCOME			
++ high	82	14	4
+	82	13	4
-	81	12	7
-- low	77	13	10
EC12+	80	13	7
OPINION LEADERSHIP			
++ high	84	12	4
+	81	14	5
-	81	13	7
-- low	75	13	12

Chapter 2 - Table 2c

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: **Radioactive milk can be made safe by boiling it.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	15	59	26
Denmark	8	68	24
Germany	13	72	14
Greece	11	54	35
Spain	11	64	26
France	8	66	26
Ireland	19	59	22
Italy	9	61	30
Luxembourg	12	64	23
the Netherlands	5	77	18
Portugal	17	36	47
United Kingdom	12	67	21
SEX			
male	10	69	21
female	12	62	26
AGE			
15-24 years	12	67	21
25-39 years	8	73	19
40-54 years	10	68	21
55 years & over	14	56	30
AGE OF FINISHING EDUCATION			
up to 15 years	15	54	30
16-19 years	10	69	21
20+ years	5	79	16
still studying	10	70	21
INCOME			
++ high	7	78	15
+	9	70	21
-	11	63	26
-- low	17	56	27
EC12+	11	66	23
OPINION LEADERSHIP			
++ high	9	75	16
+	9	70	21
-	12	64	23
-- low	14	52	35

Chapter 2 - Table 2d

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: **Electrons are smaller than atoms.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	44	19	37
Denmark	38	35	26
Germany	39	32	29
Greece	37	10	54
Spain	42	14	45
France	48	17	35
Ireland	33	24	43
Italy	48	10	42
Luxembourg	45	25	30
the Netherlands	39	33	28
Portugal	30	13	57
United Kingdom	37	28	35
SEX			
male	49	23	28
female	35	20	45
AGE			
15-24 years	58	20	21
25-39 years	46	24	30
40-54 years	40	22	38
55 years & over	28	20	51
AGE OF FINISHING EDUCATION			
up to 15 years	24	19	57
16-19 years	42	26	32
20+ years	62	20	19
still studying	68	18	14
INCOME			
++ high	54	25	21
+	46	22	31
-	38	22	40
-- low	31	20	50
EC12+	42	22	37
OPINION LEADERSHIP			
++ high	48	26	26
+	48	23	29
-	40	20	39
-- low	28	18	54

Chapter 2 - Table 2e

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: **The continents on which we live have been moving their location for millions of years and will continue to move in the future.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	82	7	11
Denmark	91	3	7
Germany	84	7	9
Greece	58	6	36
Spain	73	5	23
France	91	2	7
Ireland	66	9	26
Italy	80	4	17
Luxembourg	79	5	16
the Netherlands	86	4	10
Portugal	56	7	36
United Kingdom	87	4	10
SEX			
male	86	5	10
female	79	5	16
AGE			
15-24 years	86	6	8
25-39 years	86	5	9
40-54 years	84	4	13
55 years & over	75	5	20
AGE OF FINISHING EDUCATION			
up to 15 years	70	6	25
16-19 years	86	4	10
20+ years	94	3	3
still studying	91	5	5
INCOME			
++ high	92	3	5
+	87	4	9
-	81	5	14
-- low	72	7	21
EC12+	82	5	13
OPINION LEADERSHIP			
++ high	91	3	6
+	87	4	9
-	80	6	15
-- low	70	6	24

Chapter 2 - Table 2f

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: **It is the father's gene which decides whether the baby is a boy or a girl.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	44	35	21
Denmark	40	41	20
Germany	44	34	22
Greece	53	16	32
Spain	38	26	36
France	56	25	19
Ireland	58	20	22
Italy	51	26	23
Luxembourg	41	37	22
the Netherlands	42	37	20
Portugal	40	20	40
United Kingdom	56	25	19
SEX			
male	45	30	24
female	52	26	22
AGE			
15-24 years	45	38	17
25-39 years	55	30	16
40-54 years	53	26	21
55 years & over	43	22	35
AGE OF FINISHING EDUCATION			
up to 15 years	44	21	35
16-19 years	53	29	18
20+ years	55	31	15
still studying	43	42	15
INCOME			
++ high	51	32	17
+	51	29	20
-	50	24	26
-- low	44	25	30
EC12+	49	28	23
OPINION LEADERSHIP			
++ high	51	31	18
+	50	31	19
-	49	26	25
-- low	45	24	32

Chapter 2 - Table 2g

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: **The earliest humans lived at the same time as the dinosaurs.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	34	44	22
Denmark	24	59	18
Germany	20	61	18
Greece	30	27	43
Spain	26	39	34
France	27	54	19
Ireland	36	37	27
Italy	36	37	27
Luxembourg	22	56	22
the Netherlands	18	56	26
Portugal	28	24	48
United Kingdom	28	57	16
SEX			
male	27	53	20
female	27	47	26
AGE			
15-24 years	26	60	14
25-39 years	26	56	18
40-54 years	26	51	23
55 years & over	28	38	34
AGE OF FINISHING EDUCATION			
up to 15 years	31	35	34
16-19 years	27	54	19
20+ years	21	65	15
still studying	21	63	16
INCOME			
++ high	22	64	15
+	27	53	19
-	28	47	25
-- low	29	41	30
EC12+	27	50	23
OPINION LEADERSHIP			
++ high	26	58	16
+	26	55	19
-	27	47	25
-- low	29	38	33

Chapter 2 - Table 2h

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: **Antibiotics kill viruses as well as bacteria.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	67	19	14
Denmark	41	47	12
Germany	47	31	22
Greece	67	15	19
Spain	42	25	33
France	56	28	16
Ireland	54	28	18
Italy	72	13	16
Luxembourg	77	12	11
the Netherlands	47	38	15
Portugal	62	12	26
United Kingdom	49	39	12
SEX			
male	54	28	18
female	54	27	19
AGE			
15-24 years	55	28	17
25-39 years	54	30	15
40-54 years	54	30	16
55 years & over	53	22	25
AGE OF FINISHING EDUCATION			
up to 15 years	56	18	26
16-19 years	56	29	15
20+ years	46	42	12
still studying	55	29	16
INCOME			
++ high	48	38	14
+	56	29	15
-	55	26	19
-- low	56	19	25
EC12+	54	27	19
OPINION LEADERSHIP			
++ high	54	35	11
+	54	30	16
-	54	25	21
-- low	53	21	26

Chapter 2 - Table 2i

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: Lasers work by focusing sound waves.

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	24	34	41
Denmark	32	41	27
Germany	33	40	27
Greece	21	12	67
Spain	16	30	54
France	30	36	34
Ireland	33	28	39
Italy	26	31	43
Luxembourg	31	34	36
the Netherlands	22	47	31
Portugal	19	20	61
United Kingdom	24	45	31
SEX			
male	25	46	29
female	28	28	44
AGE			
15-24 years	25	40	35
25-39 years	24	45	30
40-54 years	29	38	33
55 years & over	28	25	48
AGE OF FINISHING EDUCATION			
up to 15 years	26	23	51
16-19 years	30	39	31
20+ years	23	54	24
still studying	23	44	33
INCOME			
++ high	24	51	25
+	29	41	30
-	27	35	39
-- low	28	26	46
EC12+	26	36	37
OPINION LEADERSHIP			
++ high	27	47	26
+	28	41	31
-	27	34	39
-- low	23	24	53

Chapter 2 - Table 2j

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: All radioactivity is man-made.

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	22	52	26
Denmark	25	66	10
Germany	39	47	13
Greece	27	34	40
Spain	29	40	32
France	22	60	18
Ireland	26	50	25
Italy	18	58	24
Luxembourg	25	53	23
the Netherlands	26	62	13
Portugal	28	32	40
United Kingdom	21	65	14
SEX			
male	25	61	14
female	28	46	26
AGE			
15-24 years	24	59	17
25-39 years	26	59	15
40-54 years	28	54	18
55 years & over	28	44	28
AGE OF FINISHING EDUCATION			
up to 15 years	31	37	32
16-19 years	29	55	16
20+ years	18	75	8
still studying	17	68	15
INCOME			
++ high	21	70	10
+	26	58	16
-	29	50	21
-- low	35	39	26
EC12+	27	53	20
OPINION LEADERSHIP			
++ high	22	68	10
+	25	60	15
-	30	49	21
-- low	27	38	35

Chapter 2 - Table 2k

Question 55: **Here is a quick quizz. For each thing I say, please tell me if it is true or false. If you don't know, say so, and we will skip to the next.**

Statement: Human beings, as we know them today, developed from earlier species of animals.

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	70	15	16
Denmark	76	14	10
Germany	58	26	16
Greece	48	25	27
Spain	70	11	19
France	71	15	14
Ireland	67	16	18
Italy	63	17	21
Luxembourg	66	11	23
the Netherlands	49	30	21
Portugal	57	13	30
United Kingdom	75	14	11
SEX			
male	69	18	14
female	62	18	20
AGE			
15-24 years	75	14	11
25-39 years	70	16	14
40-54 years	65	20	16
55 years & over	55	21	24
AGE OF FINISHING EDUCATION			
up to 15 years	58	18	25
16-19 years	67	19	14
20+ years	70	19	10
still studying	76	13	11
INCOME			
++ high	71	18	11
+	67	19	14
-	63	20	17
-- low	58	19	23
EC12+	65	18	17
OPINION LEADERSHIP			
++ high	70	19	11
+	67	19	14
-	64	19	18
-- low	61	15	24

Chapter 2 - Table 3a

Question 56: Does the earth go around the sun or does the sun go around the earth?

	The earth goes around the sun	The sun goes around the earth	Don't know
COUNTRY			
Belgium	84	10	6
Denmark	77	19	4
Germany	86	8	6
Greece	84	6	10
Spain	86	6	8
France	78	18	5
Ireland	71	18	11
Italy	89	5	5
Luxembourg	87	7	6
the Netherlands	76	18	6
Portugal	82	9	9
United Kingdom	69	21	10
SEX			
male	85	10	5
female	78	13	9
AGE			
15-24 years	84	12	4
25-39 years	83	11	6
40-54 years	85	10	6
55 years & over	75	14	11
AGE OF FINISHING EDUCATION			
up to 15 years	73	15	12
16-19 years	82	12	6
20+ years	91	7	2
still studying	91	7	2
INCOME			
++ high	89	8	3
+	86	10	4
-	80	12	8
-- low	72	17	11
EC12+	81	12	7
OPINION LEADERSHIP			
++ high	86	11	3
+	85	10	4
-	81	12	7
-- low	71	15	13

Chapter 2 - Table 3b

Question 57: **How long does it take for the earth to go around the sun?**

(% of people who answered Question 56 correctly; the answer categories «other answers» and «don't know» are not listed)

	ONE DAY	ONE MONTH	ONE YEAR
COUNTRY			
Belgium	22	3	61
Denmark	24	1	60
Germany	24	5	59
Greece	10	1	72
Spain	15	1	75
France	17	1	69
Ireland	19	3	58
Italy	19	2	66
Luxembourg	12	2	74
the Netherlands	29	1	55
Portugal	23	3	56
United Kingdom	28	1	53
SEX			
male	22	2	67
female	20	2	59
AGE			
15-24 years	17	2	71
25-39 years	20	2	66
40-54 years	21	2	63
55 years & over	25	2	54
AGE OF FINISHING EDUCATION			
up to 15 years	25	3	50
16-19 years	24	3	61
20+ years	15	1	78
still studying	14	1	78
INCOME			
++ high	20	1	69
+	21	1	67
-	23	3	60
-- low	24	4	54
EC12+	21	2	63
OPINION LEADERSHIP			
++ high	20	1	70
+	20	2	67
-	22	3	60
-- low	23	3	54

Chapter 2 - Table 4

Number of correctly answered knowledge statements and questions

(average score on a 12 point scale)

COUNTRY	
Belgium	6.60
Denmark	7.52
Germany	7.01
Greece	5.56
Spain	6.39
France	7.31
Ireland	6.14
Italy	6.64
Luxembourg	6.84
the Netherlands	7.08
Portugal	5.10
United Kingdom	7.33
SEX	
male	7.36
female	6.44
AGE	
15-24 years	7.50
25-39 years	7.43
40-54 years	7.04
55 years & over	5.88
AGE OF FINISHING EDUCATION	
up to 15 years	5.55
16-19 years	7.12
20+ years	8.14
still studying	7.97
INCOME	
++ high	8.06
+	7.29
-	6.66
-- low	5.83
EC12+	6.88
OPINION LEADERSHIP	
++ high	7.81
+	7.37
-	6.66
-- low	5.68

Chapter 2 - Table 5a

Question 60: (Split ballot A)

Suppose a machine is breaking down repeatedly. It is suspected that the material from which a particular part is made, is responsible for the breakdowns. There are different ways of investigating this problem. Which one do you think scientists would be most likely to use?

A - Only talk to the machine operators and get their opinion.
B - Only use their own scientific knowledge to decide how good the material is.
C - Make the same part from different materials, put them in the machine, one after the other, and then compare what happens in each case.

	A	B	C	DK
COUNTRY				
Belgium	20	21	48	12
Denmark	17	20	56	7
Germany	26	22	42	10
Greece	31	15	34	21
Spain	25	18	46	10
France	20	29	44	7
Ireland	24	19	40	17
Italy	20	23	42	15
Luxembourg	22	15	48	15
the Netherlands	19	24	49	8
Portugal	42	24	19	16
United Kingdom	14	17	58	11
SEX				
male	23	22	48	7
female	21	22	43	15
AGE				
15-24 years	22	20	50	8
25-39 years	20	23	50	7
40-54 years	22	22	47	9
55 years & over	23	23	37	17
AGE OF FINISHING EDUCATION				
up to 15 years	25	22	36	17
16-19 years	22	23	46	9
20+ years	16	20	59	5
still studying	19	23	52	6
INCOME				
++ high	17	22	56	5
+	22	23	47	7
-	24	22	44	10
-- low	24	23	36	16
EC12+	22	22	45	11
OPINION LEADERSHIP				
++ high	19	24	51	5
+	19	21	52	8
-	24	22	43	11
-- low	25	22	32	20

Chapter 2 - Table 5b

Question 60: (Split ballot B)
Suppose a machine is breaking down repeatedly. It is suspected that the material from which a particular part is made, is responsible for the breakdowns. There are different ways of investigating this problem. Which one do you think scientists would be most likely to use?

A - Talk to the machine operators and get their opinion.
B - Use their own scientific knowledge to decide how good the material is.
C - Make the same part from different materials, put them in the machine, one after the other, and then compare what happens in each case.

	A	B	C	DK
COUNTRY				
Belgium	32	30	28	9
Denmark	24	29	46	2
Germany	36	29	30	6
Greece	37	19	25	20
Spain	40	24	25	12
France	33	31	31	5
Ireland	34	18	33	15
Italy	29	28	31	12
Luxembourg	33	19	38	10
the Netherlands	22	36	37	5
Portugal	50	26	11	14
United Kingdom	28	27	41	4
SEX				
male	35	28	33	5
female	32	28	30	11
AGE				
15-24 years	30	29	37	4
25-39 years	32	30	33	5
40-54 years	33	28	32	7
55 years & over	35	25	26	14
AGE OF FINISHING EDUCATION				
up to 15 years	36	23	27	14
16-19 years	34	30	32	5
20+ years	30	31	37	3
still studying	26	32	38	4
INCOME				
++ high	29	31	37	3
+	34	28	33	5
-	36	28	31	6
-- low	34	28	26	12
EC12+	33	28	31	8
OPINION LEADERSHIP				
++ high	31	29	35	5
+	32	30	33	5
-	33	27	32	9
-- low	36	25	25	13

Chapter 2 - Table 5c

Question 60: (Split ballot B)
Suppose a machine is breaking down repeatedly. It is suspected that the material from which a particular part is made, is responsible for the breakdowns. There are different ways of investigating this problem. And which next?

A - Talk to the machine operators and get their opinion.
B - Use their own scientific knowledge to decide how good the material is.
C - Make the same part from different materials, put them in the machine, one after the other, and then compare what happens in each case.

	A	B	C	DK
COUNTRY				
Belgium	13	29	32	25
Denmark	27	39	29	6
Germany	22	34	28	6
Greece	18	27	30	24
Spain	19	33	29	20
France	22	36	31	12
Ireland	20	31	27	22
Italy	18	32	30	7
Luxembourg	17	24	25	33
the Netherlands	22	36	35	8
Portugal	15	33	28	10
United Kingdom	21	39	34	6
SEX				
male	21	38	33	8
female	20	33	29	12
AGE				
15-24 years	23	38	31	6
25-39 years	20	35	33	7
40-54 years	21	35	31	9
55 years & over	18	31	28	15
AGE OF FINISHING EDUCATION				
up to 15 years	20	31	28	13
16-19 years	20	34	33	10
20+ years	22	40	30	6
still studying	22	38	32	6
INCOME				
++ high	23	37	31	6
+	20	38	32	6
-	20	36	31	10
-- low	20	31	30	12
EC12+	20	34	31	10
OPINION LEADERSHIP				
++ high	23	38	29	7
+	21	35	33	8
-	21	34	29	11
-- low	17	31	30	15

Chapter 2 - Table 6

Question 59: Let us imagine that two scientists want to know if a certain drug is effective against high blood pressure.

A - The first scientist wants to give the drug to 1000 people with high blood pressure and see how many of them experience lower blood pressure levels.
B - The second scientist wants to give this drug to 500 people with high blood pressure, and not give this drug to another 500 people wiht high blood pressure, and see how many in both groups experience lower blood pressure levels.

	A	B	DON'T KNOW
COUNTRY			
Belgium	19	70	10
Denmark	12	84	5
Germany	30	55	15
Greece	22	57	22
Spain	19	59	22
France	19	70	11
Ireland	12	68	20
Italy	23	64	13
Luxembourg	20	70	11
the Netherlands	12	79	10
Portugal	27	53	20
United Kingdom	13	79	8
SEX			
male	23	66	12
female	19	65	15
AGE			
15-24 years	19	72	9
25-39 years	20	69	11
40-54 years	23	65	12
55 years & over	22	58	20
AGE OF FINISHING EDUCATION			
up to 15 years	22	57	21
16-19 years	22	68	10
20+ years	21	71	8
still studying	16	77	7
INCOME			
++ high	21	72	7
+	23	66	10
-	24	62	14
-- low	23	58	19
EC12+	21	65	14
OPINION LEADERSHIP			
++ high	21	68	10
+	21	70	9
-	22	63	15
-- low	20	57	22

Chapter 2 - Table 7

Question 61: Suppose doctors tell a couple that their genetic make-up means that they've got a one in four chance of having a child wiht an inherited illness. Does this mean that...

A - If they have only three children, none will have the illness
B - If their first child has the illness, the next three will not
C - Each of the couples' children has the same risk of suffering from the illness
D - If their first three children are healthy, the fourth will have the illness

	A	B	C	D	DK
COUNTRY					
Belgium	3	7	72	4	14
Denmark	3	3	76	5	13
Germany	2	5	79	4	10
Greece	2	7	61	6	26
Spain	4	6	63	7	22
France	4	7	71	7	11
Ireland	3	7	64	4	22
Italy	3	8	66	7	17
Luxembourg	1	3	74	6	16
the Netherlands	1	5	79	4	11
Portugal	8	12	45	9	27
United Kingdom	2	6	74	6	12
SEX					
male	3	6	72	6	14
female	3	7	70	6	15
AGE					
15-24 years	2	7	76	6	9
25-39 years	2	6	78	5	9
40-54 years	3	6	73	5	13
55 years & over	4	7	60	7	23
AGE OF FINISHING EDUCATION					
up to 15 years	4	7	59	7	23
16-19 years	3	7	75	6	10
20+ years	1	4	83	4	7
still studying	2	6	80	5	8
INCOME					
++ high	2	4	84	5	6
+	3	6	77	5	11
-	4	8	67	7	15
-- low	4	9	61	6	19
EC12+	3	6	71	6	14
OPINION LEADERSHIP					
++ high	2	6	78	5	9
+	3	6	76	6	10
-	3	7	70	6	15
-- low	5	7	58	6	24

Chapter 2 - Table 8

Number of correctly answered questions about methods

	0	1	2	3
COUNTRY				
Belgium	10	24	41	25
Denmark	5	17	41	37
Germany	11	29	42	19
Greece	22	27	34	17
Spain	18	26	37	19
France	9	26	42	23
Ireland	16	23	39	23
Italy	14	28	37	22
Luxembourg	10	21	41	28
the Netherlands	6	20	43	32
Portugal	26	42	27	6
United Kingdom	7	20	37	36
SEX				
male	11	26	39	25
female	12	26	39	23
AGE				
15-24 years	7	23	42	28
25-39 years	8	24	39	28
40-54 years	11	25	41	24
55 years & over	18	30	35	16
AGE OF FINISHING EDUCATION				
up to 15 years	19	31	34	16
16-19 years	9	25	42	24
20+ years	5	21	42	32
still studying	6	20	42	32
INCOME				
++ high	5	20	44	31
+	8	25	42	25
-	12	29	39	20
-- low	18	30	34	17
EC12+	12	26	39	24
OPINION LEADERSHIP				
++ high	7	25	39	29
+	8	23	41	28
-	12	27	39	22
-- low	20	31	34	15

Chapter 2 - Table 9a

Question 63: In recent year, newspapers and TV have sometimes talked about the following issues. For each of the following, could you tell me whether you have a clear understanding of what it means, a general sense of what it means or little understanding of what it means?

A - clear understanding
B - general sense
C - little understanding

Acid rain

	A	B	C	DK
COUNTRY				
Belgium	46	34	15	4
Denmark	55	26	17	2
Germany	49	39	9	2
Greece	20	33	17	30
Spain	20	32	28	19
France	34	30	29	8
Ireland	30	39	26	6
Italy	43	29	18	10
Luxembourg	45	34	19	3
the Netherlands	64	30	6	1
Portugal	15	24	30	31
United Kingdom	45	34	19	2
SEX				
male	49	31	15	5
female	33	35	22	10
AGE				
15-24 years	45	33	16	6
25-39 years	42	36	17	5
40-54 years	46	31	17	7
55 years & over	33	32	23	12
AGE OF FINISHING EDUCATION				
up to 15 years	26	32	26	15
16-19 years	42	36	18	5
20+ years	59	30	9	2
still studying	53	31	12	4
INCOME				
++ high	53	34	11	3
+	45	32	17	6
-	36	35	21	9
-- low	30	32	25	13
EC12+	41	33	19	8
OPINION LEADERSHIP				
++ high	58	29	11	3
+	46	35	15	5
-	38	34	20	9
-- low	23	31	30	16

Chapter 2 - Table 9b

Question 63: In recent year, newspapers and TV have sometimes talked about the following issues. For each of the following, could you tell me whether you have a clear understanding of what it means, a general sense of what it means or little understanding of what it means?

A - clear understanding
B - general sense
C - little understanding

Air Pollution

	A	B	C	DK
COUNTRY				
Belgium	58	34	8	1
Denmark	66	28	7	-
Germany	68	28	4	-
Greece	47	38	12	4
Spain	38	43	14	5
France	55	35	10	1
Ireland	40	43	15	2
Italy	65	28	6	1
Luxembourg	55	31	12	1
the Netherlands	74	23	2	1
Portugal	37	33	24	7
United Kingdom	51	39	10	-
SEX				
male	63	29	7	1
female	52	36	10	2
AGE				
15-24 years	62	31	6	1
25-39 years	59	34	6	1
40-54 years	61	31	8	1
55 years & over	51	35	12	3
AGE OF FINISHING EDUCATION				
up to 15 years	44	38	15	3
16-19 years	60	33	6	1
20+ years	71	25	3	-
still studying	69	27	4	1
				-
INCOME				
++ high	69	27	4	-
+	62	32	6	1
-	53	36	10	1
-- low	49	34	14	3
EC12+	57	33	8	1
OPINION LEADERSHIP				
++ high	71	26	4	1
+	64	30	5	-
-	54	36	9	1
-- low	41	37	17	4

Chapter 2 - Table 9c

Question 63: In recent year, newspapers and TV have sometimes talked about the following issues. For each of the following, could you tell me whether you have a clear understanding of what it means, a general sense of what it means or little understanding of what it means?

A - clear understanding
B - general sense
C - little understanding

Global warming

	A	B	C	DK
COUNTRY				
Belgium	38	36	21	5
Denmark	32	32	28	9
Germany	36	38	19	6
Greece	28	33	18	21
Spain	26	33	26	15
France	42	35	21	2
Ireland	27	37	29	7
Italy	40	32	19	10
Luxembourg	39	36	19	6
the Netherlands	48	31	17	5
Portugal	22	28	27	23
United Kingdom	43	38	17	2
SEX				
male	45	34	16	5
female	30	37	23	10
AGE				
15-24 years	42	35	19	4
25-39 years	40	40	16	5
40-54 years	41	34	19	6
55 years & over	30	33	25	13
AGE OF FINISHING EDUCATION				
up to 15 years	23	35	28	14
16-19 years	39	38	18	4
20+ years	56	33	10	2
still studying	50	32	15	3
INCOME				
++ high	49	35	13	3
+	41	37	17	5
-	34	37	23	7
-- low	26	34	26	13
EC12+	37	35	20	7
OPINION LEADERSHIP				
++ high	54	30	13	3
+	43	36	16	4
-	33	38	21	8
-- low	24	32	29	15

Chapter 2 - Table 9d

Question 63: In recent year, newspapers and TV have sometimes talked about the following issues. For each of the following, could you tell me whether you have a clear understanding of what it means, a general sense of what it means or little understanding of what it means?

A - clear understanding
B - general sense
C - little understanding

The hole in the ozone layer

	A	B	C	DK
COUNTRY				
Belgium	43	34	19	4
Denmark	48	36	15	1
Germany	49	38	12	1
Greece	35	39	16	10
Spain	33	39	19	10
France	43	32	20	5
Ireland	30	39	26	6
Italy	51	30	12	7
Luxembourg	46	35	16	3
the Netherlands	59	32	8	2
Portugal	23	26	27	24
United Kingdom	42	38	17	2
SEX				
male	50	33	14	3
female	39	37	18	7
AGE				
15-24 years	54	34	10	2
25-39 years	48	37	13	3
40-54 years	46	36	15	3
55 years & over	33	34	23	10
AGE OF FINISHING EDUCATION				
up to 15 years	28	37	24	11
16-19 years	47	37	14	2
20+ years	59	33	8	1
still studying	63	29	7	2
INCOME				
++ high	55	34	9	1
+	51	34	13	3
-	40	37	18	5
-- low	33	34	22	11
EC12+	44	35	16	5
OPINION LEADERSHIP				
++ high	61	30	8	2
+	43	36	12	3
-	41	37	17	5
-- low	29	34	27	11

Chapter 2 - Table 9e

Question 63: In recent year, newspapers and TV have sometimes talked about the following issues. For each of the following, could you tell me whether you have a clear understanding of what it means, a general sense of what it means or little understanding of what it means?

A - clear understanding
B - general sense
C - little understanding

The greenhouse effect

	A	B	C	DK
COUNTRY				
Belgium	36	32	23	8
Denmark	47	35	16	2
Germany	44	37	17	3
Greece	23	27	19	32
Spain	23	28	28	22
France	33	26	26	14
Ireland	28	41	24	7
Italy	48	28	14	10
Luxembourg	40	31	20	9
the Netherlands	57	31	9	3
Portugal	20	25	25	30
United Kingdom	44	38	17	2
SEX				
male	47	31	16	7
female	33	33	22	12
AGE				
15-24 years	47	31	15	8
25-39 years	43	35	17	6
40-54 years	43	32	18	7
55 years & over	30	30	25	16
AGE OF FINISHING EDUCATION				
up to 15 years	24	31	27	18
16-19 years	42	34	18	6
20+ years	57	31	10	2
still studying	56	29	10	5
INCOME				
++ high	51	33	12	4
+	45	31	17	7
-	35	34	21	10
-- low	28	31	25	16
EC12+	40	32	19	10
OPINION LEADERSHIP				
++ high	58	27	11	4
+	46	33	16	6
-	35	35	20	10
-- low	23	29	29	19

Chapter 2 - Table 10

Question 64: Could you please tell me where you think the hole in the ozone layer is located? (Do not prompt - Code accordingly - Several answers possible)

(selection of the correct answers and of the answer «don't know»)

	ANTARCTIC	SOUTH POLE	DON'T KNOW
COUNTRY			
Belgium	18	17	28
Denmark	16	26	24
Germany	34	17	15
Greece	12	5	46
Spain	31	8	37
France	14	6	38
Ireland	12	6	41
Italy	12	10	35
Luxembourg	26	15	25
the Netherlands	19	20	26
Portugal	11	4	56
United Kingdom	15	10	30
SEX			
male	23	14	22
female	18	9	39
AGE			
15-24 years	22	12	25
25-39 years	21	11	25
40-54 years	23	12	28
55 years & over	17	10	42
AGE OF FINISHING EDUCATION			
up to 15 years	15	8	45
16-19 years	21	11	26
20+ years	27	17	18
still studying	25	13	19
INCOME			
++ high	25	15	18
+	24	12	24
-	18	10	33
-- low	16	9	43
EC12+	20	11	31
OPINION LEADERSHIP			
++ high	26	15	21
+	21	13	25
-	21	11	32
-- low	14	7	47

Chapter 2 - Table 11a

Question 65: **Could you please tell me if you think the following statements are true or false**

Statement: **The hole in the ozone layer can cause skin cancer.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	79	7	14
Denmark	89	5	6
Germany	92	3	5
Greece	87	1	12
Spain	82	2	16
France	67	15	18
Ireland	88	3	9
Italy	76	5	19
Luxembourg	92	2	6
the Netherlands	89	4	7
Portugal	78	2	20
United Kingdom	78	9	13
SEX			
male	82	6	12
female	79	6	14
AGE			
15-24 years	83	8	9
25-39 years	85	6	9
40-54 years	83	6	12
55 years & over	74	5	20
AGE OF FINISHING EDUCATION			
up to 15 years	76	5	19
16-19 years	82	7	11
20+ years	85	7	9
still studying	86	7	8
INCOME			
++ high	87	6	7
+	84	6	11
-	80	6	14
-- low	75	7	18
EC12+	81	6	13
OPINION LEADERSHIP			
++ high	87	6	7
+	84	5	11
-	80	6	14
-- low	72	7	20

Chapter 2 - Table 11b

Question 65: **Could you please tell me if you think the following statements are true or false**

Statement: **The greenhouse effect can reduce the deserts.**

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	20	50	31
Denmark	20	63	17
Germany	31	49	20
Greece	13	26	60
Spain	20	38	43
France	21	48	31
Ireland	35	34	31
Italy	22	46	33
Luxembourg	28	47	25
the Netherlands	13	63	24
Portugal	28	30	42
United Kingdom	28	52	21
SEX			
male	23	55	22
female	26	40	35
AGE			
15-24 years	19	57	24
25-39 years	21	53	24
40-54 years	26	50	24
55 years & over	28	32	39
AGE OF FINISHING EDUCATION			
up to 15 years	27	32	41
16-19 years	27	48	25
20+ years	19	65	16
still studying	16	63	22
INCOME			
++ high	22	61	17
+	24	52	23
-	28	44	29
-- low	26	37	38
EC12+	24	47	29
OPINION LEADERSHIP			
++ high	25	57	19
+	23	54	24
-	26	44	30
-- low	24	32	44

Chapter 2 - Table 11c

Question 65: **Could you please tell me if you think the following statements are true or false**

Statement : The greenhouse effect can raise the sea level.

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	55	13	31
Denmark	70	15	15
Germany	73	12	16
Greece	34	8	58
Spain	48	10	42
France	54	18	28
Ireland	60	9	30
Italy	45	18	37
Luxembourg	67	8	25
the Netherlands	77	9	14
Portugal	44	11	45
United Kingdom	70	12	19
SEX			
male	67	13	20
female	53	14	34
AGE			
15-24 years	60	17	23
25-39 years	63	15	23
40-54 years	62	13	25
55 years & over	54	10	35
AGE OF FINISHING EDUCATION			
up to 15 years	50	12	38
16-19 years	62	14	24
20+ years	72	12	16
still studying	62	18	21
INCOME			
++ high	72	13	16
+	63	14	24
-	58	13	28
-- low	51	15	34
EC12+	59	13	27
OPINION LEADERSHIP			
++ high	71	13	16
+	63	13	23
-	58	13	28
-- low	46	13	41

Chapter 2 - Table 11d

Question 65: **Could you please tell me if you think the following statements are true or false**

Statement: Acid rain can cause damage to the forests.

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	92	2	6
Denmark	97	1	1
Germany	96	2	3
Greece	68	2	30
Spain	78	2	20
France	90	4	6
Ireland	86	2	12
Italy	85	2	13
Luxembourg	92	3	6
the Netherlands	98	1	2
Portugal	75	2	23
United Kingdom	95	1	4
SEX			
male	91	2	7
female	88	2	10
AGE			
15-24 years	93	3	5
25-39 years	93	2	6
40-54 years	90	2	9
55 years & over	85	2	13
AGE OF FINISHING EDUCATION			
up to 15 years	82	2	16
16-19 years	93	2	6
20+ years	96	1	3
still studying	94	2	3
INCOME			
++ high	96	1	3
+	93	1	7
-	89	2	9
-- low	83	4	13
EC12+	90	2	9
OPINION LEADERSHIP			
++ high	95	1	4
+	93	2	6
-	89	2	9
-- low	80	3	17

Chapter 2 - Table 11e

Question 65: **Could you please tell me if you think the following statements are true or false**

Statement: Car exhausts have nothing to do with acid rain.

	TRUE	FALSE	DON'T KNOW
COUNTRY			
Belgium	17	67	16
Denmark	22	66	12
Germany	21	67	12
Greece	13	41	46
Spain	26	40	35
France	23	60	17
Ireland	19	58	24
Italy	19	54	27
Luxembourg	22	67	12
the Netherlands	14	81	6
Portugal	29	35	36
United Kingdom	17	67	17
SEX			
male	20	65	15
female	21	55	25
AGE			
15-24 years	19	66	15
25-39 years	19	65	16
40-54 years	23	60	17
55 years & over	21	50	29
AGE OF FINISHING EDUCATION			
up to 15 years	22	46	30
16-19 years	21	63	16
20+ years	18	69	13
still studying	16	70	15
INCOME			
++ high	20	68	12
+	20	63	17
-	21	58	21
-- low	22	53	26
EC12+	20	59	20
OPINION LEADERSHIP			
++ high	17	70	13
+	20	64	16
-	20	58	22
-- low	24	46	30

Chapter 3 - Table 1a

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Science and technology are making our lives healthier, easier and more comfortable.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	3.01	3.81
Denmark	3.09	3.91
Germany	3.23	4.00
Greece	3.22	3.94
Spain	3.19	3.99
France	3.12	3.91
Ireland	3.10	3.95
Italy	3.04	3.94
Luxembourg	3.09	3.88
the Netherlands	3.03	3.84
Portugal	3.20	3.97
United Kingdom	3.04	3.91
SEX		
male	3.18	4.02
female	3.08	3.86
AGE		
15-24 years	3.11	3.90
25-39 years	3.10	3.94
40-54 years	3.15	4.00
55 years & over	3.15	3.93
AGE OF FINISHING EDUCATION		
up to 15 years	3.08	3.89
16-19 years	3.12	3.96
20+ years	3.21	3.98
still studying	3.13	3.99
INCOME		
++ high	3.24	4.05
+	3.17	3.94
-	3.08	3.97
-- low	3.05	3.85
EC12+	3.13	3.94
OPINION LEADERSHIP		
++ high	3.20	3.98
+	3.14	4.02
-	3.11	3.89
-- low	3.08	3.85

Chapter 3 - Table 1b

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Thanks to scientific and technological advances, the Earth's natural resources will be inexhaustible.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY	1.90	2.34
Belgium	1.67	2.04
Denmark	2.16	2.73
Germany	2.20	2.76
Greece	2.03	2.37
Spain	1.72	2.13
France	2.13	2.65
Ireland	2.02	2.55
Italy	1.80	2.16
Luxembourg	1.83	2.09
the Netherlands	2.17	2.57
Portugal	1.90	2.32
United Kingdom		
SEX	1.93	2.44
male	2.02	2.44
female		
AGE	1.94	2.41
15-24 years	1.93	2.34
25-39 years	1.98	2.39
40-54 years	2.04	2.60
55 years & over		
AGE OF FINISHING EDUCATION	2.10	2.65
up to 15 years	1.99	2.47
16-19 years	1.81	2.10
20+ years	1.86	2.25
still studying		
INCOME	1.91	2.23
++ high	1.89	2.40
+	2.01	2.55
-	2.15	2.57
-- low		
	1.98	2.44
EC12+		
OPINION LEADERSHIP	1.82	2.40
++ high	1.95	2.36
+	2.00	2.45
-	2.11	2.64
-- low		

Chapter 3 - Table 1c

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **We depend too much on science and not enough on faith.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.27	2.98
Denmark	2.41	2.98
Germany	2.50	3.17
Greece	2.89	3.62
Spain	2.72	3.31
France	2.39	3.04
Ireland	2.53	3.12
Italy	2.43	3.16
Luxembourg	2.51	2.83
the Netherlands	2.33	2.88
Portugal	2.88	3.56
United Kingdom	2.47	3.04
SEX		
male	2.39	3.02
female	2.59	3.25
AGE		
15-24 years	2.32	2.93
25-39 years	2.37	2.94
40-54 years	2.44	3.18
55 years & over	2.77	3.43
AGE OF FINISHING EDUCATION		
up to 15 years	2.71	3.48
16-19 years	2.45	3.04
20+ years	2.35	2.85
still studying	2.25	2.89
INCOME		
++ high	2.30	2.87
+	2.41	3.06
-	2.60	3.26
-- low	2.68	3.40
EC12+	2.50	3.14
OPINION LEADERSHIP		
++ high	2.34	2.98
+	2.42	3.04
-	2.56	3.19
-- low	2.65	3.36

Chapter 3 - Table 1d

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Scientific and technological research cannot play an important role in protecting the environment and repairing it.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	1.84	2.38
Denmark	1.56	1.96
Germany	1.91	2.36
Greece	2.23	2.68
Spain	2.06	2.38
France	1.83	2.19
Ireland	2.16	2.67
Italy	1.97	2.18
Luxembourg	2.14	2.26
the Netherlands	1.87	2.18
Portugal	2.09	2.62
United Kingdom	2.12	2.43
SEX		
male	1.93	2.22
female	2.00	2.41
AGE		
15-24 years	1.94	2.26
25-39 years	1.87	2.21
40-54 years	1.90	2.29
55 years & over	2.12	2.47
AGE OF FINISHING EDUCATION		
up to 15 years	2.19	2.60
16-19 years	1.94	2.30
20+ years	1.70	1.98
still studying	1.82	2.09
INCOME		
++ high	1.69	2.02
+	1.91	2.28
-	2.08	2.40
-- low	2.16	2.55
EC12+	1.96	2.32
OPINION LEADERSHIP		
++ high	1.83	2.14
+	1.85	2.19
-	2.04	2.40
-- low	2.19	2.55

Chapter 3 - Table 1e

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Scientists should be allowed to do research that causes pain and injury to animals like dogs and chimpanzees if it can produce new information about serious human health problems.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.06	2.64
Denmark	2.23	2.55
Germany	2.00	2.36
Greece	2.59	3.28
Spain	2.26	2.72
France	1.84	2.23
Ireland	2.00	2.39
Italy	2.04	2.39
Luxembourg	2.19	2.53
the Netherlands	2.32	2.90
Portugal	2.60	3.19
United Kingdom	2.09	2.31
SEX		
male	2.20	2.64
female	1.95	2.29
AGE		
15-24 years	2.01	2.30
25-39 years	2.07	2.44
40-54 years	2.11	2.58
55 years & over	2.10	2.49
AGE OF FINISHING EDUCATION		
up to 15 years	2.10	2.49
16-19 years	2.03	2.43
20+ years	2.16	2.56
still studying	2.00	2.27
INCOME		
++ high	2.14	2.57
+	2.12	2.44
-	2.05	2.54
-- low	2.05	2.44
EC12+	2.07	2.46
OPINION LEADERSHIP		
++ high	2.14	2.68
+	2.12	2.49
-	2.04	2.41
-- low	2.00	2.31

Chapter 3 - Table 1f

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Technological progress will make possible higher levels of consumption and, at the same time, an unpolluted environment.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.30	2.89
Denmark	2.33	2.74
Germany	2.19	2.74
Greece	2.28	3.00
Spain	2.30	2.78
France	2.27	2.86
Ireland	2.43	3.08
Italy	2.32	2.84
Luxembourg	2.07	2.44
the Netherlands	2.40	2.89
Portugal	2.54	2.92
United Kingdom	2.40	3.00
SEX		
male	2.31	2.94
female	2.29	2.75
AGE		
15-24 years	2.23	2.82
25-39 years	2.25	2.79
40-54 years	2.34	2.83
55 years & over	2.37	2.94
AGE OF FINISHING EDUCATION		
up to 15 years	2.35	2.91
16-19 years	2.35	2.87
20+ years	2.18	2.73
still studying	2.19	2.78
INCOME		
++ high	2.25	2.77
+	2.27	2.80
-	2.30	2.95
-- low	2.34	2.88
EC12+	2.30	2.85
OPINION LEADERSHIP		
++ high	2.16	2.74
+	2.29	2.87
-	2.34	2.83
-- low	3.36	2.91

Chapter 3 - Table 1g

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Because of their knowledge, scientific researchers have a power that makes them dangerous.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.85	3.48
Denmark	3.03	3.74
Germany	3.11	3.91
Greece	2.83	3.66
Spain	2.62	3.27
France	2.99	3.70
Ireland	2.81	3.58
Italy	2.58	3.21
Luxembourg	3.19	3.77
the Netherlands	2.96	3.74
Portugal	2.98	3.63
United Kingdom	2.84	3.44
SEX		
male	2.83	3.52
female	2.93	3.62
AGE		
15-24 years	2.68	3.35
25-39 years	2.79	3.54
40-54 years	2.94	3.67
55 years & over	3.05	3.69
AGE OF FINISHING EDUCATION		
up to 15 years	2.99	3.69
16-19 years	2.90	3.60
20+ years	2.82	3.46
still studying	2.61	3.31
INCOME		
++ high	2.83	3.47
+	2.83	3.62
-	2.96	3.65
-- low	2.97	3.65
EC12+	2.88	3.57
OPINION LEADERSHIP	2.94	3.60
++ high	2.87	3.52
+	2.86	3.59
-	2.88	3.63
-- low		

Chapter 3 - Table 1h

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **The application of science and new technology, will make work more interesting.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.72	3.45
Denmark	2.74	3.25
Germany	2.96	3.72
Greece	3.08	3.92
Spain	2.92	3.57
France	2.63	3.25
Ireland	2.88	3.52
Italy	2.88	3.65
Luxembourg	2.90	3.74
the Netherlands	2.85	3.46
Portugal	2.95	3.78
United Kingdom	2.70	3.31
SEX		
male	2.84	3.58
female	2.81	3.47
AGE		
15-24 years	2.88	3.61
25-39 years	2.81	3.48
40-54 years	2.80	3.57
55 years & over	2.83	3.47
AGE OF FINISHING EDUCATION		
up to 15 years	2.80	3.48
16-19 years	2.83	3.56
20+ years	2.84	3.43
still studying	2.88	3.70
INCOME		
++ high	2.87	3.50
+	2.82	3.53
-	2.78	3.58
-- low	2.84	3.50
EC12+	2.83	3.53
OPINION LEADERSHIP	2.81	3.57
++ high	2.86	3.58
+	2.83	3.46
-	2.78	3.50
-- low		

Chapter 3 - Table 1i

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **For me, in my daily life, it is not important to know about science.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.44	2.99
Denmark	2.00	2.45
Germany	2.32	2.92
Greece	2.18	2.66
Spain	2.10	2.56
France	2.43	2.84
Ireland	2.47	3.13
Italy	2.13	2.63
Luxembourg	2.57	3.07
the Netherlands	2.28	2.77
Portugal	2.38	2.99
United Kingdom	2.28	2.71
SEX		
male	2.16	2.59
female	2.36	2.94
AGE		
15-24 years	2.06	2.46
25-39 years	2.12	2.51
40-54 years	2.24	2.71
55 years & over	2.58	3.25
AGE OF FINISHING EDUCATION		
up to 15 years	2.59	3.29
16-19 years	2.30	2.70
20+ years	1.89	2.26
still studying	1.84	2.18
INCOME		
++ high	2.02	2.40
+	2.14	2.67
-	2.38	2.92
-- low	2.50	3.12
EC12+	2.27	2.77
OPINION LEADERSHIP		
++ high	1.98	2.43
+	2.15	2.55
-	2.39	2.85
-- low	2.53	3.30

Chapter 3 - Table 1j

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Most scientists want to work on things that will make life better for the average person.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.79	3.45
Denmark	2.89	3.49
Germany	2.73	3.50
Greece	3.12	3.98
Spain	2.93	3.63
France	2.85	3.64
Ireland	3.13	3.95
Italy	3.00	3.74
Luxembourg	2.86	3.54
the Netherlands	2.71	3.38
Portugal	3.18	4.04
United Kingdom	2.99	3.75
SEX		
male	2.87	3.66
female	2.92	3.62
AGE		
15-24 years	2.83	3.63
25-39 years	2.87	3.58
40-54 years	2.90	3.63
55 years & over	2.94	3.72
AGE OF FINISHING EDUCATION		
up to 15 years	2.98	3.75
16-19 years	2.88	3.66
20+ years	2.82	3.42
still studying	2.83	3.60
INCOME		
++ high	2.83	3.53
+	2.90	3.58
-	2.99	3.76
-- low	2.89	3.73
EC12+	2.89	3.64
OPINION LEADERSHIP		
++ high	2.89	3.54
+	2.88	3.63
-	2.91	3.64
-- low	2.89	3.74

Chapter 3 - Table 1k

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Science makes our way of life change too fast.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.63	3.34
Denmark	2.82	3.61
Germany	2.72	3.50
Greece	3.63	4.59
Spain	3.07	3.83
France	2.60	3.27
Ireland	2.52	3.25
Italy	2.75	3.48
Luxembourg	3.08	3.64
the Netherlands	2.81	3.57
Portugal	3.16	4.03
United Kingdom	2.62	3.26
SEX		
male	2.74	3.46
female	2.79	3.53
AGE		
15-24 years	2.60	3.30
25-39 years	2.68	3.41
40-54 years	2.78	3.51
55 years & over	2.95	3.70
AGE OF FINISHING EDUCATION		
up to 15 years	2.93	3.73
16-19 years	2.75	3.48
20+ years	2.63	3.29
still studying	2.55	3.19
INCOME		
++ high	2.63	3.29
+	2.74	3.54
-	2.85	3.65
-- low	2.82	3.57
EC12+	2.76	3.50
OPINION LEADERSHIP		
++ high	2.74	3.46
+	2.72	3.38
-	2.77	3.51
-- low	2.87	3.75

Chapter 3 - Table 1l

Question 62: **I would like to read you now some statements that people have made about science, technology or the environment. For each statement, please, tell me how much you agree or disagree. (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Thanks to science and technology, there will be more opportunities for the future generations.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.78	3.52
Denmark	3.16	3.76
Germany	3.03	3.83
Greece	3.29	4.18
Spain	3.07	3.82
France	2.81	3.52
Ireland	2.85	3.56
Italy	2.99	3.84
Luxembourg	3.14	3.98
the Netherlands	3.18	3.97
Portugal	3.17	4.04
United Kingdom	2.94	3.62
SEX		
male	2.99	3.78
female	2.98	3.73
AGE		
15-24 years	2.98	3.69
25-39 years	2.96	3.73
40-54 years	2.00	3.79
55 years & over	3.01	3.79
AGE OF FINISHING EDUCATION		
up to 15 years	2.98	3.71
16-19 years	2.96	3.74
20+ years	3.00	3.81
still studying	3.04	3.84
INCOME		
++ high	3.06	3.80
+	3.02.	3.76
-	2.92	3.75
-- low	2.96	3.72
EC12+	2.99	3.75
OPINION LEADERSHIP		
++ high	3.01	3.83
+	3.01	3.76
-	2.96	3.75
-- low	2.96	3.70

Chapter 3 - Table 2a

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **New technology does not depend on basic scientific research.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	1.88	2.47
Denmark	1.87	2.12
Germany	2.03	2.43
Greece	1.84	2.07
Spain	1.97	2.68
France	1.94	2.36
Ireland	2.04	2.36
Italy	1.86	2.23
Luxembourg	2.08	2.52
the Netherlands	1.92	2.39
Portugal	2.20	2.55
United Kingdom	2.02	2.22
SEX		
male	1.94	2.29
female	2.01	2.43
AGE		
15-24 years	1.94	2.29
25-39 years	1.95	2.30
40-54 years	1.94	2.32
55 years & over	2.04	2.51
AGE OF FINISHING EDUCATION		
up to 15 years	2.12	2.64
16-19 years	1.99	2.36
20+ years	1.78	2.06
still studying	1.86	2.13
INCOME		
++ high	1.81	2.05
+	1.95	2.44
-	2.02	2.48
-- low	2.10	2.60
EC12+	1.97	2.36
OPINION LEADERSHIP		
++ high	1.81	2.20
+	1.94	2.25
-	1.98	2.42
-- low	2.20	2.65

Chapter 3 - Table 2b

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **On balance, computers and factory automation will create more jobs than they will eliminate.**

(average on a 4 resp. 5 point scale)

		4 point	5 point
COUNTRY			
	Belgium	1.84	2.09
	Denmark	1.60	1.78
	Germany	1.95	2.23
	Greece	1.97	2.35
	Spain	1.74	2.13
	France	1.62	1.95
	Ireland	1.68	2.04
	Italy	1.82	2.20
	Luxembourg	1.90	2.03
	the Netherlands	1.76	1.89
	Portugal	1.92	2.12
	United Kingdom	1.79	2.03
SEX			
	male	1.80	2.12
	female	1.81	2.09
AGE			
	15-24 years	1.91	2.17
	25-39 years	1.80	2.12
	40-54 years	1.83	2.10
	55 years & over	1.71	2.06
AGE OF FINISHING EDUCATION			
	up to 15 years	1.75	2.06
	16-19 years	1.78	2.09
	20+ years	1.87	2.18
	still studying	1.92	2.19
INCOME			
	++ high	1.87	2.13
	+	1.76	2.14
	-	1.81	2.11
	-- low	1.79	2.13
EC12+		1.80	2.11
OPINION LEADERSHIP			
	++ high	1.71	2.12
	+	1.83	2.09
	-	1.81	2.12
	-- low	1.79	2.10

Chapter 3 - Table 2c

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Even if it brings no immediate benefits, scientific research which advances the frontiers of knowledge is necessary and should be supported by the government.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	3.11	3.92
Denmark	3.22	3.99
Germany	3.07	3.89
Greece	3.50	4.47
Spain	3.32	4.13
France	3.38	4.21
Ireland	3.21	4.09
Italy	3.29	4.10
Luxembourg	3.22	3.98
the Netherlands	3.27	4.08
Portugal	3.22	3.98
United Kingdom	3.22	4.07
SEX		
male	3.25	4.13
female	3.23	4.00
AGE		
15-24 years	3.13	3.99
25-39 years	3.26	4.12
40-54 years	3.29	4.12
55 years & over	3.25	4.03
AGE OF FINISHING EDUCATION		
up to 15 years	3.16	3.95
16-19 years	3.22	4.06
20+ years	3.39	4.24
still studying	3.24	4.15
INCOME		
++ high	3.35	4.22
+	3.29	4.07
-	3.22	4.04
-- low	3.07	3.97
EC12+	3.24	4.06
OPINION LEADERSHIP		
++ high	3.37	4.23
+	3.28	4.14
-	3.18	4.01
-- low	3.13	3.88

Chapter 3 - Table 2d

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Scientific and technological research do not play an important role in industrial development.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	1.85	2.24
Denmark	1.55	1.65
Germany	1.74	2.09
Greece	1.73	2.14
Spain	1.62	1.95
France	1.75	2.07
Ireland	1.79	2.16
Italy	1.75	2.00
Luxembourg	1.84	2.18
the Netherlands	1.66	1.86
Portugal	1.90	2.18
United Kingdom	1.79	2.00
SEX		
male	1.71	1.95
female	1.78	2.11
AGE		
15-24 years	1.75	1.99
25-39 years	1.68	1.98
40-54 years	1.75	1.97
55 years & over	1.80	2.17
AGE OF FINISHING EDUCATION		
up to 15 years	1.90	2.26
16-19 years	1.73	2.06
20+ years	1.57	1.72
still studying	1.64	1.80
INCOME		
++ high	1.57	1.75
+	1.67	2.02
-	1.78	2.13
-- low	1.91	2.23
EC12+	1.74	2.03
OPINION LEADERSHIP		
++ high	1.53	1.82
+	1.69	1.90
-	1.80	2.14
-- low	1.94	2.28

Chapter 3 - Table 2e

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Some numbers are especially lucky for some people.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.34	2.89
Denmark	2.15	2.93
Germany	2.36	3.00
Greece	2.54	3.20
Spain	2.20	2.65
France	2.22	2.78
Ireland	2.68	3.36
Italy	2.70	3.23
Luxembourg	2.02	2.41
the Netherlands	1.80	2.07
Portugal	2.69	3.41
United Kingdom	2.11	2.53
SEX		
male	2.24	2.75
female	2.38	2.96
AGE		
15-24 years	2.29	2.81
25-39 years	2.27	2.76
40-54 years	2.28	2.84
55 years & over	2.40	3.00
AGE OF FINISHING EDUCATION		
up to 15 years	2.52	3.11
16-19 years	2.32	2.84
20+ years	2.03	2.45
still studying	2.12	2.80
INCOME		
++ high	2.08	2.52
+	2.25	2.85
-	2.35	2.91
-- low	2.51	3.14
EC12+	2.31	2.86
OPINION LEADERSHIP		
++ high	2.04	2.60
+	2.28	2.76
-	2.39	2.96
-- low	2.45	3.07

Chapter 3 - Table 2f

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **New inventions will always be found to counteract any harmful consequenses of scientific and technological development.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.80	3.58
Denmark	1.85	2.12
Germany	2.98	3.76
Greece	2.88	3.52
Spain	2.60	3.30
France	2.53	3.15
Ireland	2.45	3.08
Italy	2.76	3.43
Luxembourg	2.89	3.41
the Netherlands	3.19	3.84
Portugal	2.84	3.43
United Kingdom	2.35	2.79
SEX		
male	2.68	3.38
female	2.71	3.33
AGE		
15-24 years	2.61	3.30
25-39 years	2.60	3.25
40-54 years	2.78	3.40
55 years & over	2.79	3.47
AGE OF FINISHING EDUCATION		
up to 15 years	2.74	3.46
16-19 years	2.75	3.39
20+ years	2.63	3.15
still studying	2.54	3.30
INCOME		
++ high	2.72	3.22
+	2.70	3.40
-	2.67	3.43
-- low	2.75	3.45
EC12+	2.70	3.36
OPINION LEADERSHIP		
++ high	2.66	3.31
+	2.70	3.37
-	2.70	3.35
-- low	2.71	3.38

Chapter 3 - Table 2g

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Scientific research does not make industrial products cheaper.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.95	3.58
Denmark	2.60	3.18
Germany	2.77	3.49
Greece	2.44	3.00
Spain	2.41	2.96
France	2.79	3.41
Ireland	2.76	3.47
Italy	2.55	3.20
Luxembourg	2.88	3.41
the Netherlands	2.91	3.67
Portugal	2.71	3.35
United Kingdom	2.69	3.21
SEX		
male	2.60	3.25
female	2.79	3.40
AGE		
15-24 years	2.55	3.25
25-39 years	2.67	3.28
40-54 years	2.72	3.37
55 years & over	2.78	3.39
AGE OF FINISHING EDUCATION		
up to 15 years	2.78	3.42
16-19 years	2.76	3.36
20+ years	2.53	3.17
still studying	2.47	3.22
INCOME		
++ high	2.57	3.24
+	2.71	3.36
-	2.73	3.37
-- low	2.80	3.37
EC12+	2.69	3.33
OPINION LEADERSHIP		
++ high	2.53	3.21
+	2.68	3.29
-	2.72	3.35
-- low	2.78	3.44

Chapter 3 - Table 2h

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Only by applying the most modern technology can our economy become more competitive.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.95	3.65
Denmark	2.99	3.74
Germany	3.33	4.24
Greece	3.41	4.34
Spain	3.11	3.92
France	2.98	3.71
Ireland	3.11	3.87
Italy	3.17	3.97
Luxembourg	3.08	3.97
the Netherlands	3.21	3.86
Portugal	3.36	4.14
United Kingdom	2.96	3.73
SEX		
male	3.19	4.02
female	3.09	3.87
AGE		
15-24 years	3.04	3.91
25-39 years	3.09	3.88
40-54 years	3.24	4.00
55 years & over	3.18	4.00
AGE OF FINISHING EDUCATION		
up to 15 years	3.11	3.95
16-19 years	3.17	3.95
20+ years	3.17	3.97
still studying	3.07	3.90
INCOME		
++ high	3.25	4.07
+	3.15	3.96
-	3.17	3.95
-- low	3.05	3.92
EC12+	3.14	3.95
OPINION LEADERSHIP		
++ high	3.24	4.09
+	3.17	3.98
-	3.11	3.91
-- low	3.03	3.84

Chapter 3 - Table 2i

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **Computers have made the use of bank services more complicated.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.16	2.65
Denmark	1.99	2.28
Germany	2.31	2.81
Greece	2.06	2.49
Spain	2.01	2.32
France	1.93	2.39
Ireland	2.09	2.56
Italy	1.83	2.34
Luxembourg	2.19	2.33
the Netherlands	2.17	2.68
Portugal	1.69	1.96
United Kingdom	2.55	3.11
SEX		
male	2.07	2.51
female	2.22	2.71
AGE		
15-24 years	1.90	2.32
25-39 years	2.03	2.39
40-54 years	2.17	2.65
55 years & over	2.39	2.99
AGE OF FINISHING EDUCATION		
up to 15 years	2.43	3.00
16-19 years	2.15	2.62
20+ years	1.85	2.17
still studying	1.76	2.10
INCOME		
++ high	1.94	2.36
+	2.07	2.48
-	2.21	2.68
-- low	2.40	2.88
EC12+	2.14	2.61
OPINION LEADERSHIP		
++ high	2.03	2.49
+	2.04	2.41
-	2.23	2.72
-- low	2.30	2.92

Chapter 3 - Table 2j

Question 66: Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)

Statement: Scientific and technological progress will help to cure illnesses such as AIDS, cancer, ...

(average on a 4 resp. 5 point scale)

		4 point	5 point
COUNTRY			
	Belgium	3.36	4.22
	Denmark	3.57	4.45
	Germany	3.31	4.25
	Greece	3.72	4.76
	Spain	3.56	4.50
	France	3.46	4.35
	Ireland	3.40	4.18
	Italy	3.37	4.23
	Luxembourg	3.37	4.15
	the Netherlands	3.63	4.56
	Portugal	3.45	4.39
	United Kingdom	3.27	4.19
SEX			
	male	3.43	4.35
	female	3.37	4.28
AGE			
	15-24 years	3.39	4.28
	25-39 years	3.39	4.32
	40-54 years	3.44	4.39
	55 years & over	3.38	4.28
AGE OF FINISHING EDUCATION			
	up to 15 years	3.34	4.23
	16-19 years	3.40	4.30
	20+ years	3.46	4.40
	still studying	3.46	4.41
INCOME			
	++ high	3.50	4.43
	+	3.40	4.36
	-	3.39	4.34
	-- low	3.29	4.21
EC12+		3.40	4.31
OPINION LEADERSHIP			
	++ high	3.48	4.35
	+	3.42	4.38
	-	3.37	4.29
	-- low	3.33	4.20

Chapter 3 - Table 2k

Question 66: **Now, I would like to read you some other statements. For each statement, would you please tell me how much you agree or disagree? (1 = strongly agree, 4 resp. 5 = strongly disagree; split ballot)**

Statement: **The benefits of science are greater than any harmful effects it may have.**

(average on a 4 resp. 5 point scale)

	4 point	5 point
COUNTRY		
Belgium	2.70	3.29
Denmark	3.01	3.59
Germany	2.93	3.63
Greece	3.04	3.78
Spain	3.21	3.99
France	2.85	3.57
Ireland	3.03	3.57
Italy	2.99	3.66
Luxembourg	2.93	3.56
the Netherlands	2.55	3.02
Portugal	3.01	3.81
United Kingdom	2.81	3.44
SEX		
male	2.94	3.64
female	2.89	3.56
AGE		
15-24 years	2.79	3.40
25-39 years	2.84	3.53
40-54 years	2.99	3.74
55 years & over	3.03	3.71
AGE OF FINISHING EDUCATION		
up to 15 years	2.99	3.64
16-19 years	2.86	3.61
20+ years	2.98	3.59
still studying	2.81	3.44
INCOME		
++ high	3.03	3.60
+	2.91	3.60
-	2.90	3.64
-- low	2.87	3.62
EC12+	2.92	3.60
OPINION LEADERSHIP		
++ high	3.02	3.66
+	2.94	3.60
-	2.87	3.58
-- low	2.87	3.59

Chapter 3 - Table 3a

Question 52 a: Which one of the following professions do you respect the most?

A - Judges
B - Medical doctors
C - Lawyers
D - Scientific researchers
E - Businessmen

	A	B	C	D	E
COUNTRY					
Belgium	4	46	3	23	5
Denmark	28	27	5	20	2
Germany	13	41	4	19	2
Greece	5	43	3	23	6
Spain	29	36	3	18	1
France	3	47	1	36	1
Ireland	11	60	2	10	3
Italy	13	32	2	33	3
Luxembourg	11	54	1	15	1
the Netherlands	13	44	1	15	5
Portugal	9	61	3	10	4
United Kingdom	4	65	3	13	1
SEX					
male	11	40	3	23	3
female	11	50	3	22	1
AGE					
15-24 years	13	39	4	23	3
25-39 years	12	43	2	23	2
40-54 years	10	42	3	27	3
55 years & over	10	53	3	19	1
AGE OF FINISHING EDUCATION					
up to 15 years	12	54	3	16	1
16-19 years	10	46	3	23	2
20+ years	10	33	2	32	3
still studying	15	31	4	27	4
INCOME					
++ high	11	38	3	26	3
+	11	43	2	26	3
-	12	47	2	22	1
-- low	11	50	3	18	2
EC12+	11	45	3	23	2
OPINION LEADERSHIP					
++ high	9	37	2	28	3
+	11	41	2	26	3
-	12	47	3	21	2
-- low	12	55	3	16	1

Chapter 3 - Table 3b

Question 52 a: Which one of the following professions do you respect the most?

F - Journalists
G - Bankers
H - Engineers
I - Architects
J - None

	F	G	H	I	J
COUNTRY					
Belgium	4	1	4	2	5
Denmark	2	1	3	2	8
Germany	2	1	5	2	7
Greece	5	1	2	3	6
Spain	2	1	2	1	5
France	2	-	4	2	3
Ireland	2	2	4	1	5
Italy	1	1	5	4	4
Luxembourg	2	1	4	1	7
the Netherlands	3	1	3	2	9
Portugal	4	1	3	2	2
United Kingdom	1	1	7	1	3
SEX					
male	2	1	6	3	5
female	2	1	3	1	5
AGE					
15-24 years	4	2	4	2	4
25-39 years	2	1	4	2	6
40-54 years	1	1	5	2	6
55 years & over	2	1	5	1	4
AGE OF FINISHING EDUCATION					
up to 15 years	1	1	4	1	4
16-19 years	2	1	4	2	5
20+ years	2	1	6	3	5
still studying	4	2	6	3	4
INCOME					
++ high	2	1	7	2	5
+	2	1	4	2	5
-	2	1	4	2	4
-- low	2	1	4	2	4
EC12+	2	1	4	2	5
OPINION LEADERSHIP					
++ high	3	1	7	3	6
+	2	1	5	2	5
-	2	1	4	2	4
-- low	1	-	3	1	5

Chapter 3 - Table 3c

Question 52 b: Which one of the following professions do you respect the second most?

A - Judges
B - Medical doctors
C - Lawyers
D - Scientific researchers
E - Businessmen

	A	B	C	D	E
COUNTRY					
Belgium	7	20	8	26	6
Denmark	15	22	14	13	2
Germany	13	21	10	20	4
Greece	7	19	11	16	6
Spain	17	27	11	17	2
France	7	26	6	31	2
Ireland	19	18	8	18	6
Italy	18	26	6	21	4
Luxembourg	14	16	7	22	4
the Netherlands	16	17	5	20	4
Portugal	25	18	10	14	6
United Kingdom	11	16	13	29	3
SEX					
male	13	22	8	22	4
female	13	22	10	24	3
AGE					
15-24 years	14	22	11	21	4
25-39 years	14	20	8	26	4
40-54 years	13	23	8	21	4
55 years & over	12	22	9	22	3
AGE OF FINISHING EDUCATION					
up to 15 years	13	21	10	22	4
16-19 years	14	22	9	24	4
20+ years	12	24	6	23	4
still studying	13	22	10	21	5
INCOME					
++ high	14	22	8	23	4
+	13	24	8	22	3
-	13	22	9	25	3
-- low	14	23	10	21	4
EC12+	13	22	9	23	4
OPINION LEADERSHIP					
++ high	13	23	7	23	4
+	13	23	8	23	4
-	14	22	9	22	3
-- low	13	19	12	22	4

Chapter 3 - Table 3d

Question 52 b: Which one of the following professions do you respect the second most?

F - Journalists
G - Bankers
H - Engineers
I - Architects
J - None

	F	G	H	I	J
COUNTRY					
Belgium	7	3	8	3	7
Denmark	3	8	6	2	8
Germany	4	3	8	4	7
Greece	10	2	4	8	10
Spain	4	2	5	3	5
France	5	3	11	4	3
Ireland	5	6	6	4	5
Italy	4	2	8	3	8
Luxembourg	7	3	8	4	8
the Netherlands	7	2	6	4	11
Portugal	6	4	7	5	4
United Kingdom	2	4	12	3	3
SEX					
male	4	3	11	4	6
female	4	3	7	3	6
AGE					
15-24 years	5	4	8	4	4
25-39 years	4	2	8	3	7
40-54 years	3	3	10	5	7
55 years & over	4	3	9	4	6
AGE OF FINISHING EDUCATION					
up to 15 years	4	3	8	4	6
16-19 years	4	3	8	3	6
20+ years	5	1	11	4	7
still studying	6	3	9	4	5
INCOME					
++ high	3	2	10	4	6
+	5	3	9	4	6
-	5	3	8	4	5
-- low	4	4	7	3	5
EC12+	4	3	9	4	6
OPINION LEADERSHIP					
++ high	5	2	9	5	7
+	4	3	9	3	6
-	4	3	9	4	5
-- low	4	3	7	3	7

Chapter 3 - Table 3e

Question 52 c: Which one of the following professions do you respect the least?

A - Judges
B - Medical doctors
C - Lawyers
D - Scientific researchers
E - Businessmen

	A	B	C	D	E
COUNTRY	9	2	13	4	13
Belgium	2	2	5	2	11
Denmark	7	4	8	4	12
Germany	12	5	14	3	8
Greece	6	3	7	4	17
Spain	14	1	12	2	20
France	9	1	12	2	14
Ireland	9	4	17	1	19
Italy	7	2	11	2	17
Luxembourg	3	1	8	3	16
the Netherlands	9	2	14	6	5
Portugal	10	2	6	1	8
United Kingdom					
SEX	10	3	12	2	13
male	8	3	9	3	15
female					
AGE	8	4	7	3	16
15-24 years	9	3	10	2	15
25-39 years	9	3	12	2	14
40-54 years	9	3	12	3	12
55 years & over					
AGE OF FINISHING EDUCATION	10	2	11	3	11
up to 15 years	8	3	10	3	15
16-19 years	8	3	11	2	16
20+ years	7	4	7	3	17
still studying					
INCOME	7	3	9	2	14
++ high	8	3	13	3	16
+	9	3	11	3	14
-	10	2	10	3	15
-- low					
EC12+	9	3	10	3	14
OPINION LEADERSHIP	8	3	13	2	14
++ high	9	3	10	2	17
+	9	3	10	3	12
-	9	2	10	4	13
-- low					

Chapter 3 - Table 3f

Question 52 c: Which one of the following professions do you respect the least?

F - Journalists
G - Bankers
H - Engineers
I - Architects
J - None

	F	G	H	I	J
COUNTRY					
Belgium	9	16	2	3	20
Denmark	45	12	1	4	6
Germany	21	14	4	5	10
Greece	8	7	4	5	24
Spain	17	20	3	3	12
France	14	24	2	2	7
Ireland	22	15	3	4	10
Italy	16	11	2	2	10
Luxembourg	12	10	2	2	23
the Netherlands	16	15	1	5	21
Portugal	9	9	3	4	28
United Kingdom	42	18	1	4	3
SEX					
male	21	17	2	3	10
female	21	16	2	4	11
AGE					
15-24 years	22	16	2	5	9
25-39 years	21	19	2	3	10
40-54 years	20	17	2	3	10
55 years & over	21	14	2	4	12
AGE OF FINISHING EDUCATION					
up to 15 years	20	14	3	4	12
16-19 years	22	18	2	4	9
20+ years	20	17	2	3	12
still studying	23	15	3	4	9
INCOME					
++ high	28	17	1	4	9
+	19	17	3	3	10
-	20	17	3	4	9
-- low	18	17	3	4	10
EC12+	21	16	2	4	10
OPINION LEADERSHIP					
++ high	22	19	3	3	7
+	20	17	2	4	10
-	22	16	3	4	10
-- low	20	15	2	3	12

Chapter 4 - Table 1a

Question 70: **For each of the following fields, could you tell me whether you think Europe is ahead of, behind, or at the same level as the United States?**

Field: **Scientific discoveries**

	Ahead	Behind	Same level	DK
COUNTRY				
Belgium	21	44	25	10
Denmark	9	47	38	5
Germany	24	37	29	10
Greece	13	59	11	16
Spain	8	66	14	12
France	22	31	41	6
Ireland	12	52	19	16
Italy	11	53	22	13
Luxembourg	15	49	25	11
the Netherlands	15	46	30	9
Portugal	13	49	16	22
United Kingdom	17	48	26	9
SEX				
male	18	48	28	6
female	17	44	25	15
AGE				
15-24 years	16	50	26	7
25-39 years	18	46	29	8
40-54 years	18	45	27	10
55 years & over	17	43	25	15
AGE OF FINISHING EDUCATION				
up to 15 years	17	46	21	16
16-19 years	19	45	28	8
20+ years	18	42	35	6
still studying	13	53	27	8
INCOME				
++ high	18	46	31	5
+	17	45	28	9
-	17	45	28	10
-- low	19	44	23	15
EC12+	17	46	27	11
OPINION LEADERSHIP				
++ high	18	45	30	7
+	18	45	30	8
-	17	48	25	10
-- low	16	44	21	19

Chapter 4 - Table 1b

Question 70: **For each of the following fields, could you tell me whether you think Europe is ahead of, behind, or at the same level as the United States?**

Field: **Technological advances applied in industry**

	Ahead	Behind	Same level	DK
COUNTRY				
Belgium	16	44	27	13
Denmark	18	36	38	7
Germany	28	29	32	11
Greece	13	55	13	20
Spain	9	60	16	16
France	17	33	40	9
Ireland	14	44	24	18
Italy	10	53	19	18
Luxembourg	13	44	29	15
the Netherlands	25	32	29	14
Portugal	12	49	17	23
United Kingdom	19	45	25	11
SEX				
male	21	44	28	8
female	15	40	26	19
AGE				
15-24 years	20	46	24	10
25-39 years	18	42	30	10
40-54 years	18	41	28	13
55 years & over	17	40	25	18
AGE OF FINISHING EDUCATION				
up to 15 years	17	42	22	19
16-19 years	19	41	30	11
20+ years	19	41	32	8
still studying	16	48	25	10
INCOME				
++ high	21	41	31	7
+	17	43	29	11
-	17	42	29	12
-- low	20	40	24	17
EC12+	18	42	27	13
OPINION LEADERSHIP				
++ high	22	40	29	9
+	18	43	29	10
-	17	43	26	14
-- low	16	40	23	22

Chapter 4 - Table 1c

Question 70: **For each of the following fields, could you tell me whether you think Europe is ahead of, behind, or at the same level as the United States?**

Field: **Technological advances applied in everyday life**

	Ahead	Behind	Same level	DK
COUNTRY				
Belgium	19	40	28	12
Denmark	13	43	36	8
Germany	24	30	33	13
Greece	11	56	14	20
Spain	10	56	18	16
France	22	31	37	9
Ireland	12	46	23	19
Italy	11	53	18	18
Luxembourg	16	39	31	14
the Netherlands	21	37	29	14
Portugal	16	40	19	26
United Kingdom	12	55	22	11
SEX				
male	17	47	27	9
female	17	40	26	18
AGE				
15-24 years	18	46	26	9
25-39 years	15	47	27	10
40-54 years	17	43	27	14
55 years & over	18	38	26	19
AGE OF FINISHING EDUCATION				
up to 15 years	17	40	24	20
16-19 years	19	43	28	11
20+ years	15	46	30	8
still studying	15	50	25	10
INCOME				
++ high	18	46	29	8
+	17	44	27	12
-	17	43	28	12
-- low	19	38	25	19
EC12+	17	43	27	14
OPINION LEADERSHIP				
++ high	20	45	26	10
+	16	45	29	10
-	16	44	26	14
-- low	17	37	23	22

Chapter 4 - Table 2a

Question 71: **For the same fields, could you tell me whether you think Europe is ahead of, behind or at the same level as Japan?**

Field: **Scientific discoveries**

	Ahead	Behind	Same level	DK
COUNTRY				
Belgium	25	46	18	11
Denmark	21	56	17	6
Germany	25	40	24	11
Greece	13	62	7	18
Spain	17	59	10	14
France	29	35	27	10
Ireland	17	55	10	18
Italy	24	50	11	15
Luxembourg	20	50	19	11
the Netherlands	24	51	15	10
Portugal	15	45	17	22
United Kingdom	23	56	11	10
SEX				
male	27	49	18	7
female	21	46	16	17
AGE				
15-24 years	21	54	16	9
25-39 years	26	46	18	9
40-54 years	25	47	16	12
55 years & over	22	45	17	17
AGE OF FINISHING EDUCATION				
up to 15 years	19	49	14	18
16-19 years	26	47	19	9
20+ years	29	42	21	8
still studying	23	53	15	9
INCOME				
++ high	29	48	18	6
+	24	48	19	10
-	23	47	19	12
-- low	22	47	16	16
EC12+	24	47	17	12
OPINION LEADERSHIP				
++ high	29	49	16	6
+	27	45	19	10
-	20	51	17	12
-- low	20	44	15	20

Chapter 4 - Table 2b

Question 71: **For the same fields, could you tell me whether you think Europe is ahead of, behind or at the same level as Japan?**

Field: **Technological advances applied in industry**

	Ahead	Behind	Same level	DK
COUNTRY				
Belgium	14	63	13	9
Denmark	10	76	10	4
Germany	18	54	18	9
Greece	8	68	5	20
Spain	7	73	6	14
France	11	62	19	9
Ireland	9	64	8	19
Italy	10	71	7	13
Luxembourg	11	65	13	12
the Netherlands	9	71	9	11
Portugal	10	53	15	22
United Kingdom	9	77	6	9
SEX				
male	11	71	12	6
female	12	61	12	16
AGE				
15-24 years	11	73	9	7
25-39 years	11	70	12	7
40-54 years	12	65	12	10
55 years & over	12	58	13	17
AGE OF FINISHING EDUCATION				
up to 15 years	11	60	11	18
16-19 years	13	66	13	8
20+ years	9	72	12	6
still studying	9	76	8	6
INCOME				
++ high	10	75	11	5
+	12	68	12	8
-	11	66	13	11
-- low	13	57	14	16
EC12+	12	66	12	11
OPINION LEADERSHIP				
++ high	12	71	11	6
+	11	70	12	8
-	11	65	12	11
-- low	13	55	11	21

Chapter 4 - Table 2c

Question 71: **For the same fields, could you tell me whether you think Europe is ahead of, behind or at the same level as Japan?**

Field: **Technological advances applied in everyday life**

	Ahead	Behind	Same level	DK
COUNTRY				
Belgium	22	47	20	12
Denmark	17	56	20	8
Germany	23	37	27	13
Greece	12	62	5	21
Spain	13	60	11	17
France	29	35	25	12
Ireland	14	53	12	21
Italy	18	53	11	18
Luxembourg	15	53	18	14
the Netherlands	20	44	19	17
Portugal	16	42	17	26
United Kingdom	16	58	14	12
SEX				
male	21	51	19	9
female	19	44	18	20
AGE				
15-24 years	20	53	18	9
25-39 years	20	50	19	11
40-54 years	21	46	18	15
55 years & over	19	42	18	21
AGE OF FINISHING EDUCATION				
up to 15 years	18	44	17	22
16-19 years	21	47	20	12
20+ years	21	49	20	10
still studying	21	55	16	8
INCOME				
++ high	22	51	18	9
+	22	47	19	12
-	19	47	20	14
-- low	19	44	18	19
EC12+	20	47	18	15
OPINION LEADERSHIP				
++ high	23	51	17	10
+	21	48	20	11
-	20	47	19	15
-- low	18	43	15	24

Chapter 4 - Table 3a

Question 72: **I am now going to ask you whether, in your opinion, Europe, the United Stated or Japan is most ahead in each of the following. If you have no particular view on an issue, please tell me and we will move onto the following one.**

Who has the best educated scientists?

	Europe	USA	Japan	DK
COUNTRY				
Belgium	30	41	17	13
Denmark	21	37	22	20
Germany	26	36	21	17
Greece	13	41	27	20
Spain	9	58	19	15
France	36	31	17	16
Ireland	21	30	31	19
Italy	23	43	17	17
Luxembourg	16	41	23	20
the Netherlands	23	30	22	25
Portugal	12	42	23	22
United Kingdom	33	23	26	18
SEX				
male	29	38	20	13
female	23	36	21	21
AGE				
15-24 years	24	37	25	14
25-39 years	28	37	21	15
40-54 years	26	38	20	16
55 years & over	24	36	18	23
AGE OF FINISHING EDUCATION				
up to 15 years	22	36	20	22
16-19 years	26	36	23	15
20+ years	31	38	16	15
still studying	26	38	23	13
INCOME				
++ high	28	40	20	12
+	26	37	22	15
-	25	37	21	17
-- low	24	34	21	20
EC12+	26	37	21	17
OPINION LEADERSHIP				
++ high	31	35	21	13
+	29	38	19	15
-	23	38	21	18
-- low	19	34	22	25

Chapter 4 - Table 3b

Question 72: **I am now going to ask you whether, in your opinion, Europe, the United Stated or Japan is most ahead in each of the following. If you have no particular view on an issue, please tell me and we will move onto the following one.**

Who spends the most in scientific research?

	Europe	USA	Japan	DK
COUNTRY				
Belgium	12	52	21	15
Denmark	8	45	26	21
Germany	17	38	27	19
Greece	6	49	21	24
Spain	4	55	22	20
France	17	44	17	23
Ireland	5	52	23	20
Italy	7	57	17	19
Luxembourg	10	42	26	23
the Netherlands	14	40	24	23
Portugal	8	50	17	26
United Kingdom	5	46	31	18
SEX				
male	11	50	24	15
female	10	44	22	25
AGE				
15-24 years	14	46	23	16
25-39 years	11	47	25	17
40-54 years	10	49	23	18
55 years & over	9	44	21	26
AGE OF FINISHING EDUCATION				
up to 15 years	10	44	21	25
16-19 years	12	47	24	17
20+ years	9	48	26	17
still studying	12	50	22	15
INCOME				
++ high	11	47	27	15
+	11	49	23	17
-	11	47	23	19
-- low	12	43	23	23
EC12+	11	47	23	20
OPINION LEADERSHIP				
++ high	9	45	29	17
+	11	49	23	17
-	11	47	21	20
-- low	11	42	21	27

Chapter 4 - Table 3c

Question 72: **I am now going to ask you whether, in your opinion, Europe, the United Stated or Japan is most ahead in each of the following. If you have no particular view on an issue, please tell me and we will move onto the following one.**

Who is most successful in turning scientific discoveries into useful products?

	Europe	USA	Japan	DK
COUNTRY				
Belgium	11	27	45	17
Denmark	7	18	55	19
Germany	18	13	49	20
Greece	5	26	43	27
Spain	4	28	47	21
France	20	20	38	23
Ireland	6	23	52	19
Italy	6	24	50	20
Luxembourg	9	22	50	19
the Netherlands	18	12	46	24
Portugal	9	26	41	25
United Kingdom	7	16	62	15
SEX				
male	12	20	54	14
female	12	18	45	25
AGE				
15-24 years	13	19	51	17
25-39 years	12	18	53	17
40-54 years	11	21	51	18
55 years & over	11	20	42	27
AGE OF FINISHING EDUCATION				
up to 15 years	11	22	41	27
16-19 years	14	18	51	17
20+ years	19	15	47	16
still studying	10	19	55	16
INCOME				
++ high	10	18	58	14
+	11	20	53	16
-	14	20	47	19
-- low	15	18	42	25
EC12+	12	19	50	20
OPINION LEADERSHIP				
++ high	10	17	59	14
+	13	19	52	17
-	11	20	48	21
-- low	12	20	39	29

Chapter 4 - Table 3d

Question 72: **I am now going to ask you whether, in your opinion, Europe, the United Stated or Japan is most ahead in each of the following. If you have no particular view on an issue, please tell me and we will move onto the following one.**

Who is best at co-ordinating research carried out by different bodies such as private industry, universities, research laboratories?

	Europe	USA	Japan	DK
COUNTRY				
Belgium	19	35	24	23
Denmark	23	26	21	31
Germany	21	22	26	31
Greece	10	36	22	32
Spain	9	42	23	26
France	22	33	20	25
Ireland	13	34	24	29
Italy	7	45	21	28
Luxembourg	20	24	26	30
the Netherlands	27	19	21	33
Portugal	14	37	18	31
United Kingdom	20	30	24	26
SEX				
male	17	36	26	22
female	17	30	20	33
AGE				
15-24 years	18	35	23	24
25-39 years	18	35	25	22
40-54 years	17	33	24	25
55 years & over	15	29	20	36
AGE OF FINISHING EDUCATION				
up to 15 years	15	29	22	36
16-19 years	19	33	24	25
20+ years	18	37	23	22
still studying	16	38	24	22
INCOME				
++ high	18	35	25	23
+	18	34	27	21
-	17	33	24	26
-- low	17	27	21	35
EC12+	17	33	23	28
OPINION LEADERSHIP				
++ high	15	36	27	22
+	18	35	23	24
-	16	32	23	29
-- low	16	26	22	36

Chapter 5 - Table 1

Question 67: **In which of the following areas is the European Community itself active?**

Answer: Science and Technology

		SCIENCE AND TECHNOLOGY
COUNTRY		
	Belgium	33
	Denmark	40
	Germany	30
	Greece	42
	Spain	37
	France	49
	Ireland	31
	Italy	33
	Luxembourg	48
	the Netherlands	37
	Portugal	33
	United Kingdom	28
SEX		
	male	40
	female	31
AGE		
	15-24 years	37
	25-39 years	38
	40-54 years	39
	55 years & over	28
AGE OF FINISHING EDUCATION		
	up to 15 years	25
	16-19 years	36
	20+ years	50
	still studying	40
INCOME		
	++ high	42
	+	38
	-	36
	-- low	29
EC12+		35
OPINION LEADERSHIP		
	++ high	46
	+	41
	-	30
	-- low	25

Chapter 5 - Table 2a

Question 68: **In which of the following areas of research is the European Community itself active?**

A - Telecommunications
B - New techniques of industrial production
C - New agricultural techniques
D - Civil nuclear energy

(% of people who answered «Science and Technology»; question 67)

	A	B	C	D
COUNTRY				
Belgium	64	40	48	34
Denmark	62	45	55	30
Germany	49	32	43	43
Greece	56	51	52	22
Spain	64	48	53	29
France	56	31	29	33
Ireland	48	42	51	23
Italy	58	41	50	33
Luxembourg	60	44	51	48
the Netherlands	57	39	48	33
Portugal	72	64	64	34
United Kingdom	41	36	50	32
SEX				
male	57	39	46	35
female	52	37	44	33
AGE				
15-24 years	51	36	40	32
25-39 years	59	40	44	34
40-54 years	52	38	45	35
55 years & over	53	37	49	34
AGE OF FINISHING EDUCATION				
up to 15 years	53	41	47	31
16-19 years	50	38	42	34
20+ years	62	37	47	39
still studying	54	33	42	83
INCOME				
++ high	58	38	50	35
+	55	40	44	31
-	56	42	47	38
-- low	50	34	41	32
EC12+	54	38	45	34
OPINION LEADERSHIP				
++ high	58	35	45	33
+	55	38	44	33
-	55	40	45	35
-- low	46	40	47	36

Chapter 5 - Table 2b

Question 68: **In which of the following areas of research is the European Community itself active?**

E - Biotechnology
F - Psychological research
G - Environmental research
H - Information technology

(% of people who answered «Science and Technology»; question 67)

	E	F	G	H
COUNTRY				
Belgium	25	12	63	27
Denmark	38	12	69	45
Germany	32	13	71	28
Greece	15	12	44	48
Spain	26	13	62	29
France	16	4	44	20
Ireland	18	13	50	26
Italy	19	9	56	32
Luxembourg	38	23	65	46
the Netherlands	39	12	70	36
Portugal	36	26	59	41
United Kingdom	25	17	59	39
SEX				
male	26	11	60	32
female	22	12	56	27
AGE				
15-24 years	23	11	57	31
25-39 years	26	11	58	30
40-54 years	26	10	59	30
55 years & over	22	13	58	30
AGE OF FINISHING EDUCATION				
up to 15 years	21	12	57	26
16-19 years	23	12	58	28
20+ years	30	11	60	34
still studying	24	9	55	35
INCOME				
++ high	31	10	65	37
+	22	11	59	27
-	27	13	59	28
-- low	20	12	54	28
EC12+	24	11	58	30
OPINION LEADERSHIP				
++ high	30	8	57	35
+	24	10	60	30
-	22	13	58	29
-- low	24	17	54	28

Chapter 5 - Table 2c

Question 68: **In which of the following areas of research is the European Community itself active?**

I - Robotics
J - Research into the origin and nature of the universe
K - Nuclear fusion
L - Renewable energies

(% of people who answered «Science and Technology»; question 67)

	I	J	K	L
COUNTRY				
Belgium	29	22	34	39
Denmark	20	23	24	45
Germany	15	35	30	35
Greece	20	9	9	26
Spain	25	23	29	39
France	26	14	24	27
Ireland	9	11	19	25
Italy	19	12	31	36
Luxembourg	27	27	41	39
the Netherlands	19	22	45	35
Portugal	29	28	24	40
United Kingdom	20	21	31	36
SEX				
male	23	23	30	37
female	19	19	27	29
AGE				
15-24 years	24	18	28	37
25-39 years	22	20	28	35
40-54 years	18	24	28	34
55 years & over	20	22	30	29
AGE OF FINISHING EDUCATION				
up to 15 years	20	23	25	28
16-19 years	20	20	27	32
20+ years	22	21	33	39
still studying	22	20	31	41
INCOME				
++ high	21	24	33	40
+	19	21	27	35
-	26	25	28	32
-- low	18	17	25	24
EC12+	21	21	28	34
OPINION LEADERSHIP				
++ high	20	23	30	36
+	20	20	29	35
-	22	21	26	32
-- low	24	23	29	29

Chapter 5 - Table 3a

Question 69: **Now a comparison between separate national and common European Community scientific research. If you fully agree with the statement on the left, please give a score of one. If you fully agree with the statement on the right, please give a score of five. The scores in between allow you to say how close to either side you are.**

1 = wastes money
5 = saves money

(average score on a five point scale)

COUNTRY	
Belgium	2.99
Denmark	3.42
Germany	2.90
Greece	3.70
Spain	2.96
France	3.08
Ireland	3.44
Italy	3.53
Luxembourg	3.07
the Netherlands	3.09
Portugal	3.52
United Kingdom	3.08
SEX	
male	3.17
female	3.09
AGE	
15-24 years	3.21
25-39 years	3.15
40-54 years	3.31
55 years & over	3.05
AGE OF FINISHING EDUCATION	
up to 15 years	2.98
16-19 years	3.12
20+ years	3.13
still studying	3.32
INCOME	
++ high	3.28
+	3.16
-	3.16
-- low	2.97
EC12+	3.13
OPINION LEADERSHIP	
++ high	3.26
+	3.19
-	3.10
-- low	2.93

Chapter 5 - Table 3b

Question 69: **Now a comparison between separate national and common European Community scientific research. If you fully agree with the statement on the left, please give a score of one. If you fully agree with the statement on the right, please give a score of five. The scores in between allow you to say how close to either side you are.**

1 = is more effective
5 = is less effective

(average score on a five point scale)

COUNTRY	
Belgium	2.80
Denmark	2.70
Germany	2.65
Greece	2.03
Spain	2.91
France	2.61
Ireland	2.63
Italy	2.22
Luxembourg	2.42
the Netherlands	2.45
Portugal	2.48
United Kingdom	3.03
SEX	
male	2.63
female	2.63
AGE	
15-24 years	2.60
25-39 years	2.59
40-54 years	2.64
55 years & over	2.68
AGE OF FINISHING EDUCATION	
up to 15 years	2.73
16-19 years	2.62
20+ years	2.52
still studying	2.55
INCOME	
++ high	2.58
+	2.61
-	2.61
-- low	2.66
EC12+	2.63
OPINION LEADERSHIP	
++ high	2.57
+	2.57
-	2.66
-- low	2.73

Chapter 5 - Table 3c

Question 69: **Now a comparison between separate national and common European Community scientific research. If you fully agree with the statement on the left, please give a score of one. If you fully agree with the statement on the right, please give a score of five. The scores in between allow you to say how close to either side you are.**

1 = will become less important
5 = will become more and more important

(average score on a five point scale)

COUNTRY		
	Belgium	3.80
	Denmark	3.29
	Germany	3.85
	Greece	4.19
	Spain	3.27
	France	4.06
	Ireland	3.95
	Italy	4.24
	Luxembourg	3.97
	the Netherlands	3.98
	Portugal	3.86
	United Kingdom	3.65
SEX		
	male	3.88
	female	3.86
AGE		
	15-24 years	3.76
	25-39 years	3.87
	40-54 years	3.95
	55 years & over	3.85
AGE OF FINISHING EDUCATION		
	up to 15 years	3.79
	16-19 years	3.84
	20+ years	4.02
	still studying	3.92
INCOME		
	++ high	3.97
	+	3.87
	-	3.86
	-- low	3.74
EC12+		3.87
OPINION LEADERSHIP		
	++ high	4.02
	+	3.93
	-	3.83
	-- low	3.67

Chapter 5 - Table 3d

Question 69: **Now a comparison between separate national and common European Community scientific research. If you fully agree with the statement on the left, please give a score of one. If you fully agree with the statement on the right, please give a score of five. The scores in between allow you to say how close to either side you are.**

1 = is very helpful to economic growth
5 = is very unhelpful to economic growth

(average score on a five point scale)

COUNTRY		
	Belgium	2.67
	Denmark	2.98
	Germany	2.46
	Greece	1.97
	Spain	2.77
	France	2.53
	Ireland	2.46
	Italy	2.17
	Luxembourg	2.11
	the Netherlands	2.25
	Portugal	2.42
	United Kingdom	2.76
SEX		
	male	2.44
	female	2.54
AGE		
	15-24 years	2.49
	25-39 years	2.48
	40-54 years	2.51
	55 years & over	2.48
AGE OF FINISHING EDUCATION		
	up to 15 years	2.58
	16-19 years	2.47
	20+ years	2.39
	still studying	2.47
INCOME		
	++ high	2.38
	+	2.44
	-	2.52
	-- low	2.57
EC12+		2.49
OPINION LEADERSHIP		
	++ high	2.37
	+	2.43
	-	2.53
	-- low	2.65

Chapter 5 - Table 3e

Question 69: **Now a comparison between separate national and common European Community scientific research. If you fully agree with the statement on the left, please give a score of one. If you fully agree with the statement on the right, please give a score of five. The scores in between allow you to say how close to either side you are.**

1 = is against the national interest
5 = is in the national interest

(average score on a five point scale)

COUNTRY		
	Belgium	3.49
	Denmark	3.44
	Germany	3.41
	Greece	4.01
	Spain	3.65
	France	3.58
	Ireland	3.91
	Italy	3.78
	Luxembourg	3.84
	the Netherlands	3.63
	Portugal	3.98
	United Kingdom	3.52
SEX		
	male	3.62
	female	3.55
AGE		
	15-24 years	3.60
	25-39 years	3.58
	40-54 years	3.62
	55 years & over	3.56
AGE OF FINISHING EDUCATION		
	up to 15 years	3.56
	16-19 years	3.55
	20+ years	3.66
	still studying	3.67
INCOME		
	++ high	3.67
	+	3.54
	-	3.57
	-- low	3.53
EC12+		3.59
OPINION LEADERSHIP		
	++ high	3.71
	+	3.61
	-	3.54
	-- low	3.51

Chapter 5 - Table 3f

Question 69: **Now a comparison between separate national and common European Community scientific research. If you fully agree with the statement on the left, please give a score of one. If you fully agree with the statement on the right, please give a score of five. The scores in between allow you to say how close to either side you are.**

1 = increases industrial competitiveness
5 = reduces industrial competitiveness

(average score on a five point scale)

COUNTRY		
	Belgium	2.55
	Denmark	2.29
	Germany	2.27
	Greece	2.46
	Spain	2.43
	France	2.42
	Ireland	2.37
	Italy	2.36
	Luxembourg	1.96
	the Netherlands	2.52
	Portugal	2.50
	United Kingdom	2.65
SEX		
	male	2.37
	female	2.45
AGE		
	15-24 years	2.44
	25-39 years	2.44
	40-54 years	2.34
	55 years & over	2.42
AGE OF FINISHING EDUCATION		
	up to 15 years	2.50
	16-19 years	2.41
	20+ years	2.27
	still studying	2.41
INCOME		
	++ high	2.32
	+	2.41
	-	2.43
	-- low	2.49
EC12+		2.41
OPINION LEADERSHIP		
	++ high	2.33
	+	2.36
	-	2.45
	-- low	2.52

Chapter 5 - Table 3g

Question 69: **Now a comparison between separate national and common European Community scientific research. If you fully agree with the statement on the left, please give a score of one. If you fully agree with the statement on the right, please give a score of five. The scores in between allow you to say how close to either side you are.**

1 = increases disparities between countries
5 = decreases disparities between countries

(average score on a five point scale)

COUNTRY		
	Belgium	3.36
	Denmark	2.98
	Germany	3.38
	Greece	3.51
	Spain	2.84
	France	3.36
	Ireland	3.22
	Italy	3.66
	Luxembourg	3.16
	the Netherlands	3.65
	Portugal	3.40
	United Kingdom	3.16
SEX		
	male	3.38
	female	3.32
AGE		
	15-24 years	3.31
	25-39 years	3.36
	40-54 years	3.41
	55 years & over	3.32
AGE OF FINISHING EDUCATION		
	up to 15 years	3.26
	16-19 years	3.34
	20+ years	3.47
	still studying	3.41
INCOME		
	++ high	3.48
	+	3.34
	-	3.30
	-- low	3.31
EC12+		3.35
OPINION LEADERSHIP		
	++ high	3.46
	+	3.41
	-	3.32
	-- low	3.17