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EUROPEAN COMMISSION

Europeans and biotechnology in 2010

Winds of change?

A report to the European Commission's Directorate-General for Research

by

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Overview of key findings

The latest Eurobarometer survey on the Life Sciences and Biotechnology, based on representative samples from 32 European countries and conducted in February 2010, points to a new era in the relations between science and society. While entrenched views about GM food are still evident, the crisis of confidence in technology and regulation that characterised the 1990s – a result of BSE, contaminated blood and other perceived regulatory failures – is no longer the dominant perspective. In 2010 we see a greater focus on technologies themselves: are they safe? Are they useful? And are there 'technolite' alternatives with more acceptable ethical-moral implications? Europeans are also increasingly concerned about energy and sustainability. There is no rejection of the impetus towards innovation: Europeans are in favour of appropriate regulation to balance the market, and wish to be involved in decisions about new technologies when social values are at stake.

Technological optimism

A majority of Europeans are optimistic about biotechnology (53 per cent optimistic; 20 per cent say 'don't know'). In comparison, they are more optimistic about brain and cognitive enhancement (59; 20), computers and information technology (77; 6), wind energy (84; 6) and solar energy (87; 4), but are less optimistic about space exploration (47; 12), nanotechnology (41; 40) and nuclear energy (39; 13). Time series data on an index of optimism show that energy technologies – wind energy, solar energy and nuclear power – are on an upward trend – what we call the 'Copenhagen effect'. While both biotechnology and nanotechnology had seen increasing optimism since 1999 and 2002 respectively, in 2010 both show a similar decline – with support holding constant but increases in the percentages of people saying they 'make things worse'. With the exception of Austria, the index for biotechnology is positive in all countries in 2010, indicating more optimists than pessimists – Germany joining Austria in being the least optimistic about biotechnology. But in only three countries (Finland, Greece and Cyprus) do we see an increase in the index from 2005 to 2010.

Nanotechnology

Only 45 per cent of Europeans say they have heard of nanotechnology, which in the survey is described in the context of consumer products. Six out of ten EU citizens who expressed an opinion support such applications of nanotechnology, with support varying from over 70 per cent in Poland, Cyprus, Czech Republic, Finland and Iceland to less than 50 per cent in Greece, Austria and Turkey. For the opponents of nanotechnology, safety is the pressing concern followed by the perceived absence of benefits.

Biofuels

A comparison of crop based (first generation) biofuels with sustainable (second generation) biofuels made from non-edible material shows that overall, Europeans are positive towards both types. 78 per cent of Europeans support crop based biofuels and 89 per cent support sustainable biofuels. It would appear that debates about the downsides of crop based biofuels – on food security, food prices and destruction of forests for crop cultivation –have had only a marginal impact on the public's perceptions.

Synthetic biology

Following a description of synthetic biology respondents in the survey were asked – *'Suppose there was a referendum about synthetic biology and you had to make up your mind whether to vote for or against. Among the following, what would be the most important issue on which you would like to know more?'* Our respondents were asked to select three from the list of seven issues of interest. 73 per cent selected 'possible risks'; 61 per cent 'claimed benefits' and 47 per cent 'who will benefit and who will bear the risks'. Information about social and ethical issues was the least frequent choice at 19 per cent. Asked about their views on whether, and under what conditions, synthetic biology should be approved, of those respondents who expressed a view 17 per cent said that they do not approve under any circumstances; 21 per cent do not approve except under very special circumstances; 36 per cent approve as long as synthetic biology is regulated by strict laws and only 3 per cent approve without any special laws. Overall, Europeans consider synthetic biology a sensitive technology that demands precaution and special regulations, but an outright ban would not find overwhelming support.

GM food

GM food is still the Achilles' heel of biotechnology. The wider picture is of declining support across many of the EU Member States – on average opponents outnumber supporters by three to one, and in no country is there a majority of supporters. What is driving the continued opposition to GM food? Public concerns about safety are paramount, followed by the perceived absence of benefits and worry – GM food is seen as unnatural and makes many Europeans 'uneasy'. Across the period 1996-2010, we see, albeit with fluctuations, a downward trend in the percentage of supporters. Denmark and the UK, at the higher end of the distribution of support, are exceptions, as is Austria, at the lower end. Those among the 'old' EU countries with a ban on GM crops in place consistently show low values of support, with Italy joining the group. In contrast, Member States where GM crops are grown tend to show among the highest values, suggesting a link between private attitudes and public policies.

Animal cloning for food products

Cloning animals for food products is even less popular than GM food with 18 per cent of Europeans in support. In only two countries – Spain and the Czech Republic – does animal cloning attract the support of three in ten. This contrasts with 14 countries in which support for GM food is above 30 per cent. Is this an indication of broader public anxieties about biotechnology and food? The idea of the 'natural superiority of the natural' captures many of the trends in European food production, such as enthusiasm for organic food, local food, and worries about food-miles. And if 'unnaturalness' is one of the problems associated with GM food, it appears to be an even greater concern in the case of animal cloning and food products.

Cisgenics

Cisgenics is the genetic modification of crops adding only genes from the same species or from plants that are crossable in conventional breeding programmes. It could be employed, for example, in the cultivation of apples to provide resistance to the common apple diseases and thereby reduce pesticide use. In all EU countries, cisgenic production of apples receives higher support (55 per cent) than

transgenic apples (33 per cent), with the former attracting majority support in 24 countries (including Austria).

GM food and transgenic apples are both seen to be unnatural by three out of four respondents. However, support for GM food (27 per cent) is a little lower than for transgenic apples (33 per cent). Transgenic apples are more likely to be perceived as safe and not to harm the environment. It is likely that the preamble in the survey describing transgenic apples as a technique that would '*limit use of pesticides, and so pesticide residues on the apples would be minimal*" suggested an attractive benefit both to food safety and the environment. Cisgenics might be seen as a hypothetical example of the so-called 'second generation' of GM crops. Here, the benefits of GM apple breeding are achieved with a technolite process, a consumer benefit is offered and as such it achieves better ratings in terms of benefits, safety, environment, naturalness, and double the support of GM food.

Regenerative medicine

Developments in regenerative medicine attract considerable support across Europe. 68 per cent of respondents approve of stem cell research and 63 per cent approve of embryonic stem cell research. Levels of approval for gene therapy are similar, at 64 per cent. Xenotransplantation – an application long subject to moratoria in various countries – now finds approval with 58 per cent of respondents. And the solid support for medical applications of biotechnology spreads over to non-therapeutic applications. Moving from repair to improvement, we find that 56 per cent of the European public approves of research that aims to enhance human performance. However, support for regenerative medicine is not unconditional. Approval is contingent upon perceptions of adequate oversight and control.

Biobanks

While approximately one in three Europeans have heard about biobanks before, nearly one in two Europeans say they would definitely or probably participate in one, with Scandinavian countries showing the most enthusiasm. And people do not seem to have particular worries about providing certain types of information to biobanks: blood samples, tissue samples, genetic profile, medical records and lifestyle data elicit similar levels of concern. However, amongst those similar levels there are some nuances. In twelve countries, providing one's medical records provokes the most worry, and in ten countries it is the genetic profile that is most worrying. Asked about who should be responsible for protecting the public interest with regard to biobanks, we find a split between those countries opting for self-regulation (by medical doctors; researchers; public institutions such as universities or hospitals) and those opting for external regulation (ethics committees; national governments; international organisations and national data protection authorities). Broadly speaking, respondents in those countries which show higher levels of support for biobanks tend to favour external regulation more than self-regulation. In those countries where biobanks are unfamiliar, self regulation is a more popular way of guarding the public interest. On the issue of consent, almost seven in ten Europeans opt for specific – permission sought for every new piece of research; one in five for broad consent, and one in sixteen for unrestricted. But of those more likely to participate in the biobank, some four in ten opt for either unrestricted or broad consent.

Governance of science

Europeans' views on the governance of science were sought in the context of two examples of biotechnology: synthetic biology and animal cloning for food products. Respondents were asked to choose between, firstly, decisions making based on scientific evidence or on moral and ethical criteria, and secondly, decisions made on expert evidence or reflecting the views of the public. 52 per cent of European citizens believe that synthetic biology should be governed on the basis of scientific delegation where experts, not the public decide, and where evidence relating to risks and benefits, not moral concerns, are the key considerations. However, nearly a quarter of Europeans take the opposite view: it is the public, not experts, and moral concerns, not risks and benefits, that should dictate the principles of governance for such technologies (the principle of 'moral deliberation'). For animal cloning (compared to synthetic biology) some 10 per cent fewer opt for scientific deliberation and 9 per cent more opt for moral deliberation. It seems that moral and ethical issues are more salient for animal cloning for food products than for synthetic biology: altogether 38 per cent of respondents choose a position prioritising moral and ethical issues for synthetic biology, with 49 per cent doing the same for animal cloning for food. To put this another way, the European public is evenly split between those viewing animal cloning for food as a moral issue and those viewing it as a scientific issue.

Trust in key actors

The re-building of trust in regulators and industry from the lows in the 1990s is in evidence. On an index capturing a trust surplus or trust deficit, we find 'national governments making regulations' up 23 per cent since 2005. 'Industry developing biotechnology products' is up 9 per cent since 2005 and 62 per cent since 1999, and 'the EU making laws across Europe' is up 14 per cent since 2005. On this index, 'university scientists' maintain a trust surplus of around 80 per cent. There is a robust and positive perception of the biotechnology system. It seems fair to conclude that Europeans have moved on from the crisis of confidence of the mid to late 1990s. It is also notable that both national governments and the EU carry almost equivalent trust surpluses in the majority of countries. It seems as if the idea of national regulation within a framework of European laws is accepted amongst the publics of the European Member States.

Familiarity and engagement

The link between familiarity and engagement with technology is not straightforward. On the one hand, views of nanotechnology are clearly related to the extent of public familiarity and engagement. Those who are actively engaged in finding out about nanotechnology tend to be much more inclined to perceive of it as safe and beneficial and something not to worry about, compared to those for whom nanotechnology is unfamiliar. On the other hand, when it comes to the two controversial biotechnologies, GM food and animal cloning in food production, levels of familiarity and engagement are only weakly related to perceptions of them. These technologies similarly tend to invoke worry, and are perceived as less beneficial and safe than nanotechnology.

Religion and education

Overall, the non-religious are more optimistic about the contribution of technologies to the improvement of everyday life and are more likely to support human embryonic stem cell research. But when faced with a conflict between science and religion they are almost evenly split on which pillar of the truth should prevail – not that different to people in the major European religious denominations. Religious commitment appears to be associated with greater concerns about ethical issues in stem cell research and with a belief that ethics should prevail over scientific evidence. However, here again there are many highly religious people who say that science should prevail in such a conflict of opinion.

As to the effect of education the findings show that socialisation in a scientific family and having a university education in science are associated with greater optimism about science and technology, more confidence in regulation based on scientific delegation, and more willingness to encourage the development of both nanotechnology and GM food. However, the findings also show that scientific socialisation either in the family or at university is not a magic bullet – it is not the panacea to the issue of resistance to innovation. For example, a majority of those coming from a scientific family background or with a degree in science are not willing to support the development of GM food.

Climate change

Across a number of questions it is apparent that there is widespread concern with climate change, and more generally with sustainability. Respondents in all countries except two (Latvia and Malta) favour changes in ways of living over technological solutions, even if this means reduced economic growth. Only in 7 countries (Bulgaria, Poland, Estonia, Lithuania, Romania, Latvia and Malta) is support for the 'changing ways of life' solution below the 'comfortable majority' threshold of 55 per cent. In some countries (Finland, Denmark, or Switzerland) the support for the 'changing ways of life' solution is much stronger than the support of the notion that technology will solve climate change (for instance, about six times stronger in Finland, where only 14 per cent opt for the 'technological solution' and 84 per cent for the 'changing ways of life' solution). The relatively small percentage of 'don't know' responses shows that people now feel ready to take a stance.

Whatever people's view on climate change respondents, the majority is likely to assume that others share their views and that their views will be reflected in national policies. Given that an individual's beliefs are reinforced by the support – actual or perceived - of others, that so many believe that others share their views, is an indication of just how difficult is the task of changing beliefs about climate change.

Public ethics, technological optimism and support for biotechnologies

Analysing the range of questions in the survey that address issues of public ethics – the moral and ethical issues raised by biotechnology and the life sciences – we find five clusters of countries. Key contrast emerge between clusters of countries. First, those that prioritise science over ethics and those that prioritise ethics over science, and second those countries that are concerned about distributional fairness and those who are not. In combination these contrasts are related to people's optimism about

the contribution of technologies to improving our way of life and support for regenerative medicines and other applications of biotechnology and the life sciences. Where ethics takes priority over science, concerns about distributional fairness lead to a profile of lower support; but in the absence of sensitivities about distributional fairness, the profile of support is relatively higher. When science taking priority over ethics is combined with concerns about distributional fairness, then we find only moderate support; but here again the absence of sensitivities about distributional fairness reveals a profile of high support.

Introduction

Eurobarometer 73.1 is the seventh in a series of surveys of public perceptions of the Life Sciences and Biotechnology. The series started in 1991 with Eurobarometer 35.1 (INRA 1991) in the twelve Member States of the European Community. It was followed by the second in 1993, Eurobarometer 39.1 (INRA 1993). In 1996, the third in the series, Eurobarometer 46.1(INRA 1997) covered the fifteen Member States of the expanded European Union. The fourth in the series, Eurobarometer 52.1 (INRA 2000) was conducted in 1999, the fifth (Eurobarometer 58.0) in 2002 (Gaskell et al. 2003) and the sixth (Eurobarometer 63.1) in 2005 (TNS 2005). The new survey in 2010 covers the now 27 Member States of the European Union plus Croatia, Iceland, Norway, Switzerland and Turkey.

The survey questionnaire for EB 73.1 includes key trend questions, designed to assess the stability or change in aspects of public perceptions over the last ten years or more. It also includes new questions that capture opinions and attitudes to emerging issues in the field of biotechnology: regenerative medicine, synthetic biology and cisgenics. And as in 2005 there are questions on nanotechnology – in part because nanotechnology has been heralded as the next strategic technology, but also on account of its links with biotechnology, as seen in the emergence of the so-called converging technologies. As in 2005 there are questions about human embryonic and other types of stem cell research.

The Eurobarometer on Biotechnology and the Life Sciences, like other systematic survey research studies, provides a representation of public voices – for the European public speaks not with one voice – to policy makers, representatives of industry, journalists, civil society groups, scientists and social scientists – and even to the public themselves. Surveys represent the world in particular ways; depending on the perspective adopted, the representations will differ. Survey results do not have a single, obvious and unequivocal meaning. Whether the glass is half full or half empty is a matter of personal preference. In this report we provide our interpretation. But because other interpretations are possible, we include the basic data in the Annexes to this report.

The report is divided into three sections. The first provides an analytic description of Europeans' perceptions of biotechnology in 2010, with, where possible, comparable data from previous surveys to illustrate trends. This is followed by two Annexes, containing the questionnaire and a codebook of basic descriptive statistics for each question by country, with a technical note including details of survey sampling and weighting. In the report we present results across the 32 countries. We also give Europe-wide summaries for the current 27 EU Member States, with samples weighted to reflect their relative population sizes. An expanding Europe is an inherent characteristic of these Eurobarometer reports. However, note that were the summaries to include all 32 countries, they would change very little.

For ease of presentation the majority of results exclude those respondents who registered a 'don't know' response. In this sense we report findings based on only those who expressed an opinion in the context of a particular question. However, since the rates of 'don't know' responses vary from question to question, and from country to country, from about 5 per cent to 35 per cent, we encourage readers to look at the codebook to assess the impact of differential rates of 'don't know' responses.

1. Optimism about technology

The Lisbon declaration of 2000 set a strategic goal for the European Union (EU) to become the most competitive and dynamic knowledge based economy in the world. The 7th Framework Programme (2007-2013), with a budget of €53 billion to support research and technological development, was launched to give a new impetus to increase Europe's growth and competitiveness. In 2002, the EU's Heads of State and Government agreed to the Barcelona target to increase Research and Development to 3 per cent of GDP.

The European Commission has reaffirmed the importance of innovation and research as one of the key drivers of economic recovery. One of the seven flagship initiatives in the Europe 2020 strategy is the Innovation Union and a commitment to 'improve framework conditions and access to finance for research and innovation so as to ensure that innovative ideas can be turned into products and services that create growth and jobs' (European Commission 2010a: 3).

But does the European public have the appetite for technology and innovation? Some theorists have argued that we are in a post-materialist age in which the desire for economic growth is replaced by concerns for the environment, personal development and civil liberties (Inglehart 1990). Others have argued that uncritical enthusiasm for science and technology is typical of less developed economies, and that the publics of the advanced industrial countries become increasingly critical, even sceptical, about the contribution of science and technology to the quality of life (Durant et al. 2000).

However, such longer term changes in people's values – for which it must be admitted the empirical evidence is not overwhelming – can be reversed by period effects, such as a downturn in the economy. Rising unemployment and other recessionary impacts focus people's minds on how the economy can deliver jobs, prosperity and improve the quality of life.

More prosaically there may be a habituation effect, whereby the novel of the past becomes the taken-for-granted of the present, and even substantial breakthroughs in the past are no longer seen as such in contemporary times. Think of personal computers, email and the lack of excitement that greets a new computer operating system. People also recognize that the promises that accompanied past developments were often hyperbole, and so they tend to discount similar claims attached to the current crop of innovations.

In the Eurobarometer survey respondents were asked whether particular technologies 'will improve our way of life in the 20 years', 'will have no effect', or 'will make things worse', and a 'don't know' response was accepted but not offered by the interviewer. This question has been asked since 1991 and it not only provides an indicator of general sentiment towards technology and innovation but also places views about biotechnology and the life sciences in the context of other technologies. Over the seven waves of the Eurobarometer on biotechnology some of the target technologies have been retained in the survey, others have been dropped and new technologies introduced to keep abreast of new developments.

In 2010 respondents were asked about eight technologies (the year in which the technology was introduced is indicated in brackets here). The target technologies are computers and information technology, and space exploration (from 1991), solar energy (from 1993), nuclear energy (from 1999), nanotechnology (from 2002), wind energy (from 2005) and brain and cognitive enhancement (new in 2010).

From 1991 to 2005 a split ballot was used for biotechnology, with half of the sample asked about 'biotechnology' and the other half asked about 'genetic engineering'. In 2010 the alternative descriptions were combined into 'biotechnology and genetic engineering'.

Generalised sentiment to technology

How optimistic are Europeans about new technologies? Our measures of generalised technological optimism and pessimism are admittedly rather crude. We take the eight technologies (see above) and count for each respondent: firstly, the number of technologies that they say will improve our way of life; and, secondly, the number that will make things worse. We then compute for each country the average (mean) number of technologies that are given the optimistic judgement ('optimism') and the average (mean) number of technologies that are given the pessimistic judgement ('pessimism'), and plot them for the EU27 as a whole, and by country, in Figure 1.

Some caveats are in order. The eight technologies are not claimed to be representative of the full range of technological innovations – they are a partial group. Civil nuclear power is hardly new and, as argued above, innovation fatigue may have set in amongst sections of the public for computers and information technology. But all of the technologies chosen may count as being 'sensitive', i.e. potentially raising strong sentiments for various reasons beyond their technical characteristics and economic implications. Our interpretation of the data is that lying behind an individual's score on the scale is a representation about the role of technologies in contributing to a better or worse future for society. And one might expect that those countries in which, on average, more technologies are rated as likely to improve our lives over the coming years, will tend to provide more support for political and economic policies that support innovation.

Figure 1: Generalised technological optimism and pessimism

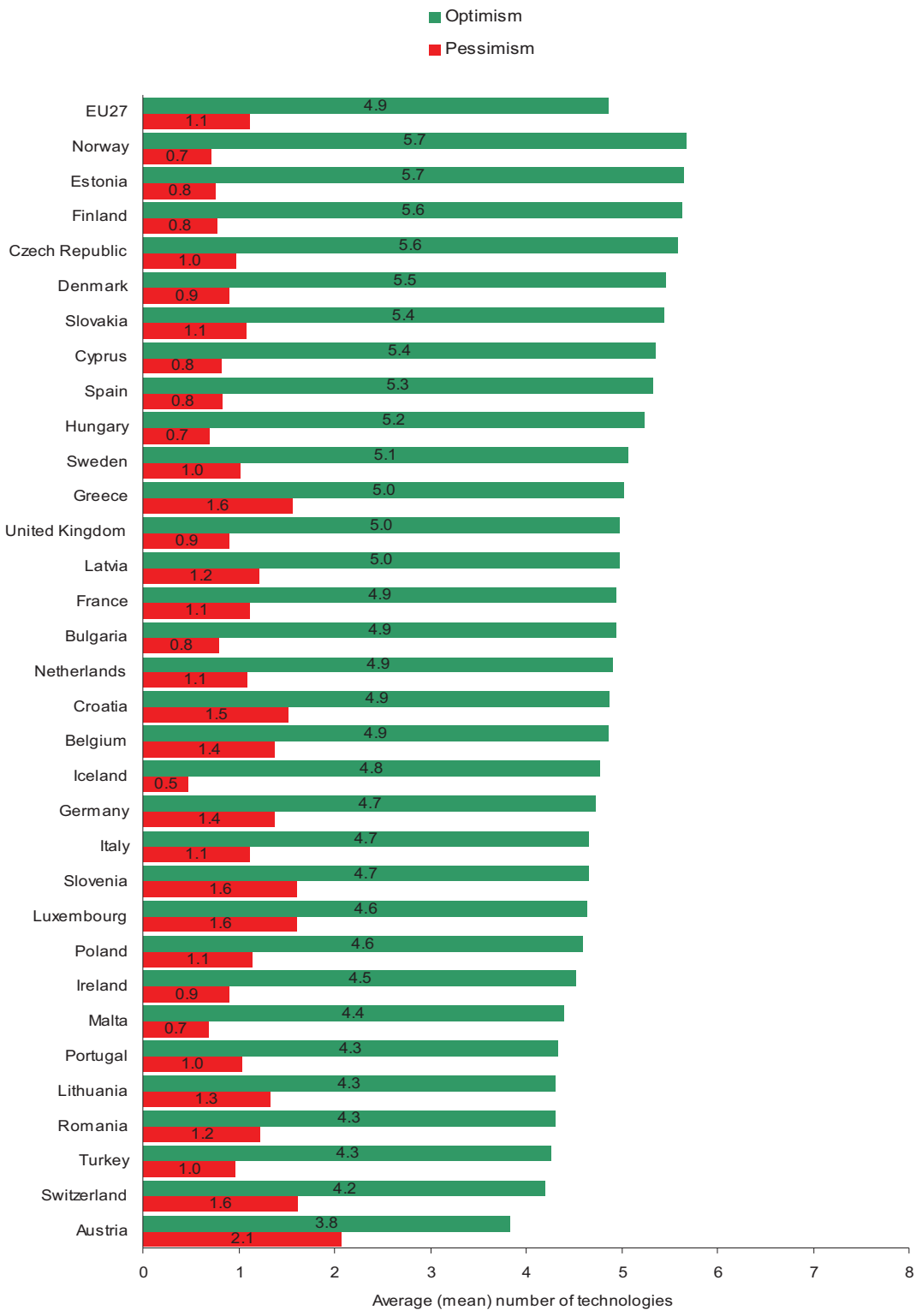
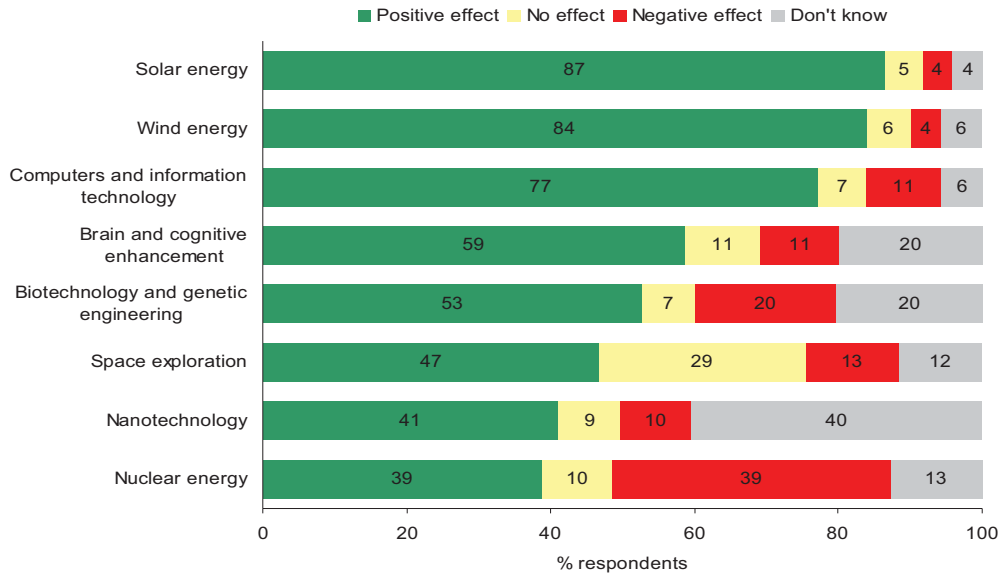


Figure 1 shows that the greater majority of countries score between 4.5 and 5.5 out of 8 on this measure of generalised technological optimism, indicating a degree of similarity in average levels of optimism across European countries. The figure also shows the average (mean) number of pessimistic responses; here only a small number of countries exceed 1.5. And while there is a negative relationship between optimism and pessimism, it is not particularly large. The correlation coefficient which compares optimism and pessimism between respondents (rather than between country-level averages) is -0.44, where -1 would indicate a perfect one-to-one negative (linear) relationship between optimism and pessimism, and 0 would indicate no such relationship.

So, is the glass half full or half empty? Does the European public hold a positive representation of technology and does it depend on the particular technology? Figure 2 gives us some clues. For 7 out of the 8 technologies optimists outnumber pessimists. Expectations about nuclear power are the exception with an even split between optimists and pessimists.

Figure 2: Optimism and pessimism regarding eight technologies, EU27



Notably, a majority of Europeans are optimistic about biotechnology and genetic engineering. In comparison, they are more optimistic about brain and cognitive enhancement, computers and information technology, wind energy and solar energy, but are less optimistic about space exploration, nanotechnology and nuclear energy.

The contrast between the four so-called strategic technologies of the post-World War II years is striking. For biotechnology, 53 per cent are optimistic and 20 per cent are pessimistic. The comparable figures for nuclear power are 39 per cent optimistic and 39 per cent pessimistic. For computers, 77 per cent are

optimistic and 11 per cent are pessimistic. For nanotechnology, which was acclaimed as a strategic technology in the early 2000s, 41 per cent are optimistic and 10 per cent are pessimistic.[1]

Not surprisingly on account of its novelty, the percentage of 'don't know' responses for nanotechnology is above 40 per cent, much the same as in 2005. That biotechnology still elicits a 'don't know' response from one in five (again much the same as in 2005) suggests that either many people have still to make up their minds about its prospects, or that it is difficult to weigh up pros and cons of the varieties of biotechnology, for example across medical and agricultural applications.

Brain and cognitive enhancement, now the focus of attention of neuroethicists, is probably relatively unfamiliar to many of the public (20 per cent give a 'don't know' response), yet the idea of this technology seems to engender widespread optimism, with optimists outnumbering pessimists by a ratio of 5 to 1. Later in the survey, respondents are asked for their views on adequate levels of regulation of research exploring ways of enhancing the performance of healthy people, for example to improve concentration or to increase memory. The results are discussed in the context of views on regenerative medicine in Chapter 4 of this report.

Nuclear power continues to be cited as an option in climate change and energy security debates. Here we find equal percentages of optimists and pessimists (39 per cent). In contrast to the findings of the Eurobarometer in 2005, in 2010 we find that judgements that it 'will have no effect' have declined from 18 to 10 per cent; the proportion of Europeans saying 'it will improve our way of life' has increased from 32 to 39 per cent; and roughly the same proportion of respondents say it 'will make things worse', with an increase of just 2 percentage points to 39 per cent in 2010.

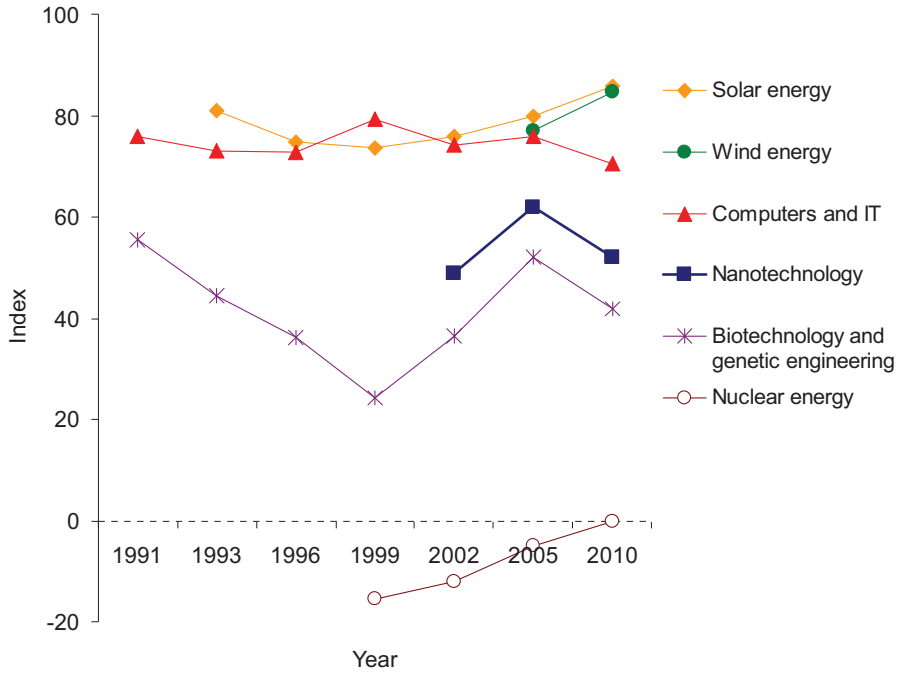
[1] Synthetic biology - the latest strategic technology – was not included in this question set on account of its relative unfamiliarity. However, in Chapter 2 we report on the European public's perceptions of this development.

Trends in technological optimism

To assess the changes in optimism and pessimism over time (1991 to 2010) we use a summary index. For this we subtract the percentage of pessimists from the percentage of optimists and divide this by the combined percentage of optimists, pessimists and those who say the technology will have no effect. In excluding the 'don't know' responses, this index is based on only those respondents who expressed an opinion. A positive score reflects a majority of optimists over pessimists, a negative score a majority of pessimists over optimists and a score around zero more or less equal percentages of the two.

This index has the following merits. Firstly, it is an economical way of presenting comparisons between countries and over time; secondly, with substantial differences in rates of 'don't know' responses across countries, the raw scores can be misleading; and thirdly, it weights the balance of optimism and pessimism in relation to all the respondents who express an opinion on the question.

Figure 3: Index of optimism about six technologies[2]



The trends in the index of optimism (see Figure 3) show some interesting trajectories. Firstly, for all of the energy technologies – wind and solar energy and nuclear power – an upward trend is seen. This might be termed the 'Copenhagen' effect. The extensive media coverage of climate change and global warming, making salient the issue of carbon emissions, may have helped increase public optimism about the contributions of renewable energy sources and nuclear power. At the same time, new issues have

[2] The countries included in each score for 'Europe' (weighted according to their relative population sizes) reflect the expanding membership of the EU: thus 1991 and 1993 scores are for the original 12 Member States, 1996–2002 for EU15, 2005 for EU25 and 2010 for EU27.

come to public attention, such as those represented by Al Gore in his *An Inconvenient Truth* (Gore 2006).

As an aside, how do those who are optimistic about solar and wind energy – the classic sustainable energy solutions – view nuclear power, which is now claimed by some to be in the sustainable category but completely rejected by others? In the event, the public are divided. While the optimists for solar energy take the same position on wind energy, those who are optimistic about solar energy are split on nuclear power between optimism (46 per cent) and pessimism (42 per cent).

In parallel, the second noticeable trend is that of recently declining optimism in biotechnology, nanotechnology and computers and information technology. While computer and information technology has been consistently around 80 per cent on the index, there is a small decline in the period 2005-2010.

While both biotechnology and nanotechnology had been on an upward trend since 1999 and 2002 respectively, in 2010 there is a similar decline in optimism. In both cases we see support holding constant but changes in the percentages of 'make things worse' responses. These increase from 12 to 20 per cent for biotechnology and from 5 to 10 per cent for nanotechnology. Changes come not from a reduction in 'don't know' responses, but rather a decline in 'make no difference' responses.

Turning to European country-level data, Table 1 shows the index of optimism for biotechnology over the period 1991 to 2010. The EU15 countries are ordered from the most to the least optimistic in 2010, followed by the 10 new Member States of 2004, then Romania and Bulgaria and finally Iceland, Norway, Turkey, Switzerland and Croatia (also ordered from most to least optimistic).

In all countries, with the exception of Austria, the index has positive values, indicating more optimists than pessimists. But in only three countries (Finland, Greece and Cyprus) do we see an increase in the index from 2005 to 2010. The table also shows little change in optimism over the last five years in Spain, Ireland, the UK, France and Estonia, and that the non-EU countries Iceland and Norway stand amongst the most optimistic countries. But in the rest of Europe there is a consistent decline in optimism about biotechnology.

Table 1: Trends in the index of optimism for biotechnology/genetic engineering

	1991	1993	1996	1999	2002	2005	2010
Spain	82	78	67	61	71	75	74
Sweden	-	-	42	-	61	73	63
Finland	-	-	24	13	31	36	59
Portugal	50	77	67	50	57	71	54
Ireland	68	54	40	16	26	53	51
UK	53	47	26	5	17	50	50
Italy	65	65	54	21	43	65	48
France	56	45	46	25	39	49	46
Denmark	26	28	17	-1	23	56	45
Greece	70	47	22	-33	12	19	35
Belgium	53	42	44	29	40	46	32
Luxembourg	47	37	30	25	29	55	32
Netherlands	38	20	29	39	39	47	31
Germany	42	17	17	23	24	33	12
Austria	-	-	-11	2	25	22	-7
Cyprus	-	-	-	-	-	74	78
Estonia	-	-	-	-	-	79	76
Malta	-	-	-	-	-	81	64
Hungary	-	-	-	-	-	62	58
Czech Rep.	-	-	-	-	-	71	53
Slovakia	-	-	-	-	-	55	48
Latvia	-	-	-	-	-	60	43
Poland	-	-	-	-	-	59	41
Slovenia	-	-	-	-	-	47	33
Lithuania	-	-	-	-	-	66	28
Romania	-	-	-	-	-	-	36
Bulgaria	-	-	-	-	-	-	24
Iceland	-	-	-	-	-	-	79
Norway	-	-	-	-	-	-	70
Turkey	-	-	-	-	-	-	49
Switzerland	-	-	-	-	-	-	32
Croatia	-	-	-	-	-	-	25

2. Emerging technologies

2.1 Nanotechnology

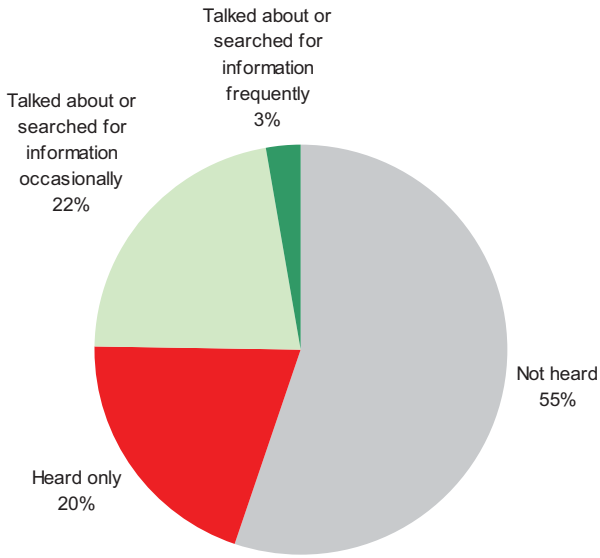
Nanotechnology is a collective term for a variety of technologies for engineering matter on the atomic and/or molecular level. Nanotechnology is considered a strategic technology *par excellence*; its many uses and vast potentials cover medicines and medical processes as well as electronics, energy, materials, filtration, consumer goods and food. As nanoscience emerged as a new discipline, scientists and policy makers became conscious of the need to avoid a repetition of the GM food saga (David and Thompson 2008). In parallel, nanoethics emerged to debate the social, ethical and legal aspects of molecular engineering. That it continues to be a socially sensitive technology is evidenced by a call of the European Parliament to ban nanoparticles from food products.

For the Eurobarometer survey it was decided to select an area of nanotechnology that involved products close to everyday life: cosmetics, sun creams and household cleaning fluids. Nanotechnology was introduced to respondents in the following way:

> *'Now thinking about nanotechnology: Nanotechnology involves working with atoms and molecules to make new particles that are used in cosmetics to make better anti-aging creams, suntan oils for better protection against skin cancer and cleaning fluids to make the home more hygienic. Despite these benefits, some scientists are concerned about the unknown and possibly negative effects of nanoparticles in the body and in the environment.'*

Figure 4 shows that only around 25 per cent of Europeans have 'engaged' with nanotechnology, i.e. talked about it or searched for information. More than half have not heard of it before the interview.

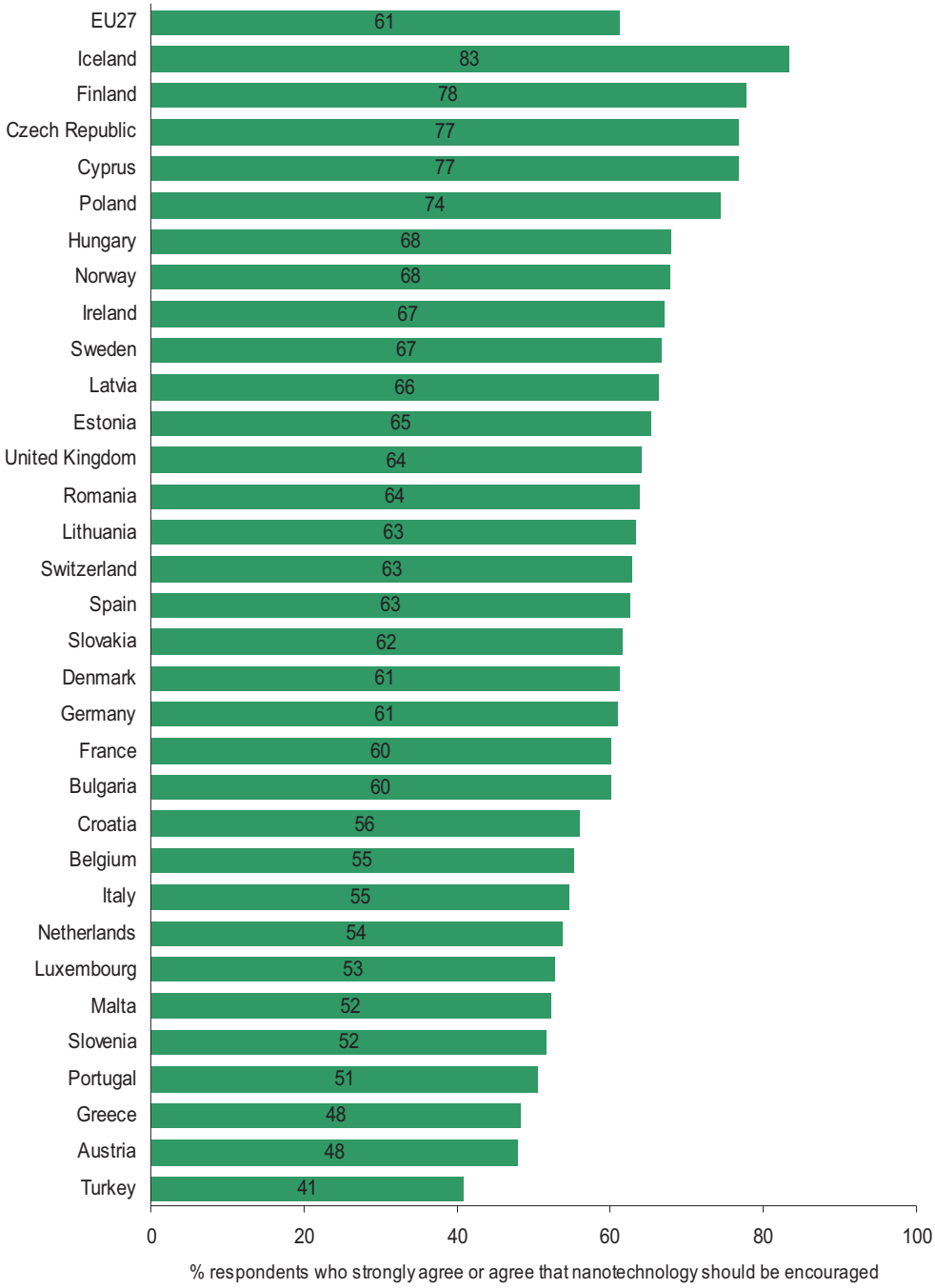
Figure 4: Awareness of nanotechnology, EU27



First, we look at the distribution of supporters and opponents of nanotechnology in countries across Europe. Figure 5 is based on only those respondents who expressed an opinion to question 10 below, regarding encouragement for nanotechnology[3]. As can be seen from the figure, six out of ten EU citizens support nanotechnology. Support varies, between all the countries in the survey, from 83 per cent in Iceland to 48 per cent in Austria. Note that in the description of nanotechnology, both potential benefits and risks were mentioned. It would appear that while opponents are concerned about safety issues, in most countries this is a minority response. In all but three countries an absolute majority support nanotechnology for consumer products.

[3] That is, 63 per cent of respondents across the 32 countries.

Figure 5: Encouragement for nanotechnology (excluding DKs)



Respondents were asked a number of questions about nanotechnology (similar questions were also asked about animal cloning for food products and GM food, which will be reported later):

1. *Nanotechnology is good for the (NATIONALITY) economy*
2. *Nanotechnology is not good for you and your family*
3. *Nanotechnology helps people in developing countries*
4. *Nanotechnology is safe for future generations*
5. *Nanotechnology benefits some people but puts others at risk*
6. *Nanotechnology is fundamentally unnatural*
7. *Nanotechnology makes you feel uneasy*
8. *Nanotechnology is safe for your health and your family's health*
9. *Nanotechnology does no harm to the environment*
10. *Nanotechnology should be encouraged*

For each question, respondents were asked whether they totally agree, tend to agree, tend to disagree or totally disagree. The first nine questions were designed to tap into four clusters of perceptions of technologies. The final question, 'should nanotechnology be encouraged?' we take as a measure of overall support.

- Questions 1 and 2 provide an index of the extent of perceived benefit;
- Questions 3 and 5 give as index of distributional equity – do people perceive this technology to be fair or unfair in the distribution of both benefits and risks?
- Questions 4, 8 and 9 give an index of perceived safety/risk;
- And finally, questions 6 and 7 provide an index of worry related to unnaturalness. This is similar to the 'affective heuristic' (Slovic et al. 2002).

For each respondent, a score was created for each of these four indices of benefit, safety, inequity and worry (unnatural). Scores range from -1.5 to 1.5, where -1.5 indicates low perceived benefit, low safety, and absence of both inequity and worry; and 1.5 indicates high perceived benefit, high safety, high inequity and high worry. Zero marks the notional mid-point on the scale. Note, therefore, that the first two indices are framed 'positively', with high scores indicating positive views about the technology, whereas the second two indices are framed 'negatively', with high scores indicating concerns about the technology.

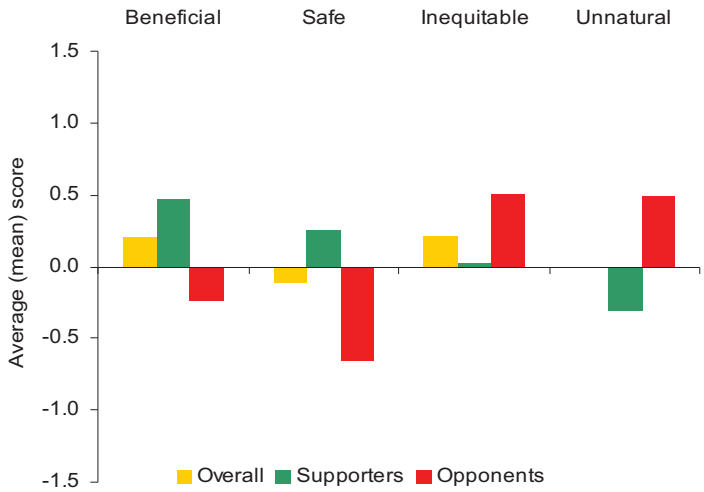
Figure 6 shows average (mean) scores for respondents in EU27 countries, both overall (yellow bars). We then take the final question, number 10, and split the sample between supporters (those who agree that nanotechnology should be encouraged) and opponents (those who disagree). In the figure, the supporters are denoted with green bars and opponents with red bars.

The figure shows that, across the European public (the first bar in each cluster, in yellow), the balance of opinion is that nanotechnology is somewhat more likely to be beneficial than not; to be unsafe rather

than safe; to be inequitable rather than equitable; and not particularly worrying (though equally, not particularly unworrying). Taken as a whole, perceptions of nanotechnology emerge as rather neutral in character. But dig beneath the surface and we find division in perceptions between supporters and opponents. Supporters (denoted by the middle bar in each cluster, in green) are much more likely than opponents (the last bar, in red) to agree that nanotechnology is beneficial, safe, equitable and not the cause of worry. When comparing opponents and supporters, the most pronounced contrast is in the issue of safety. Supporters and opponents are most in agreement on the issue of inequity, which supporters returning a neutral verdict on this issue, and opponents somewhat concerned.

Multiple regression is a statistical technique that allows us to find out the extent to which the four indices (benefit, safety, inequity and worry) make a separate (independent) contribution to the explanation of variation in overall support. If the four indices are making independent contributions to explaining overall support, then they flag up distinct concerns rather than merely some overall attitude, for example, 'technological optimism'. The multiple regression[4] shows that all four indices make a statistically significant contribution to the explanation of overall support. Here, safety is by far the most influential, followed by benefit, worry and lastly inequity.

Figure 6: Perceptions of nanotechnology as beneficial, safe, inequitable and unnatural, EU27 (excluding DKs)



[4] Specifically, we used a binary logistic regression model, with the response variable dichotomised into 'agree or totally agree' that nanotechnology should be encouraged, versus 'disagree or totally disagree' that it should be encouraged. Respondents answering 'don't know' to this question were excluded from this analysis. 'Statistically significant' results are so at the 1% significance level.

2.2 Biofuels

When biofuels made from edible crops were first introduced, they were heralded as one of the more exciting applications of modern biotechnology, offering an apparently sustainable means to produce energy resources and lower dependence on Middle-Eastern oil, as well as providing farmers in Europe and the US with a new market. The EU announced targets for the introduction of biofuels, and motorists, even airlines, sought out biofuels as a response to climate change. Relatively quickly, some unintended consequences became apparent, with negative impacts appearing in the developed world – increased speculation in commodity crops and food prices and in the developing world – increased destruction of rain forests for crop cultivation.

In our questions on biofuels, respondents were asked sequentially about the first generation of crop based biofuels and then about the second generation of more sustainable biofuels. The introductions went as follows:

(First generation)

> *'Let's speak now about biofuels. Biofuels are made from crops like maize and sugar cane that are turned into ethanol and biodiesel for airplanes, cars and lorries. Unlike oil, biofuels are renewable, would reduce greenhouse gas emissions and make the European Union less dependent on imported oil. Critics, however, say that these biofuels take up precious agricultural land and may lead to higher food prices in the European Union and food shortages in the developing world.'*

(Second generation)

> *'Now, scientists are working on more sustainable biofuels. These can be made from plant stems and leaves - the things we don't eat, or from trees and algae. With these second generation biofuels, there is no longer the need to use food crops.'*

Figure 7 summarises the balance of opinion about two generations of bio-fuels across the European Union. Overall, feelings are positive towards all kinds of biofuels across Europe. 72 per cent of Europeans support crop based biofuels. It would appear that the discussions about the downsides of crop-based biofuels have not had much impact.

However, Europeans are even more optimistic about the second generation biofuels: 83 per cent approve of sustainable biofuels made from non-edible material.

Figure 7: Opinions regarding first generation and sustainable biofuels, EU27

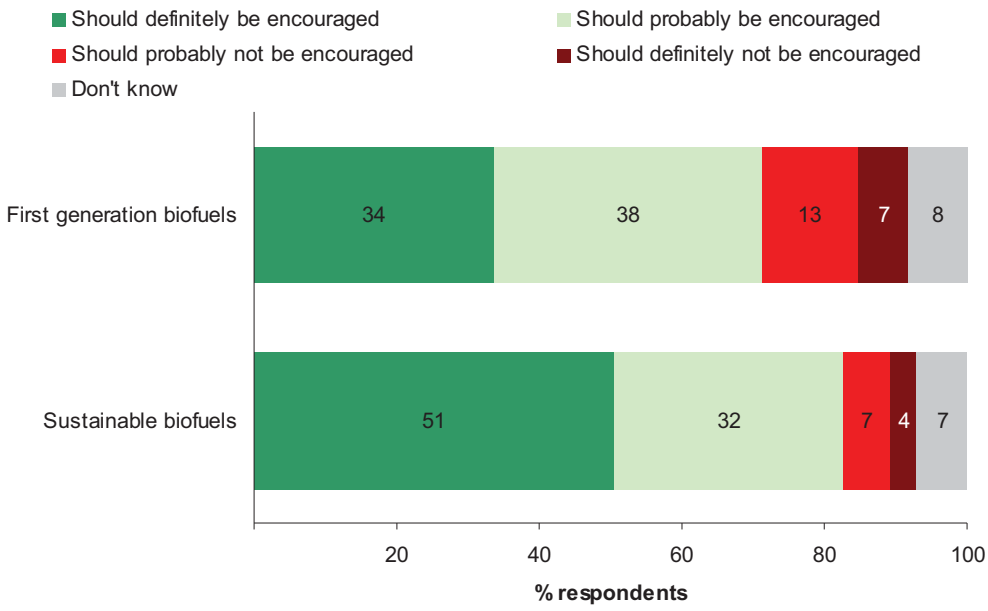
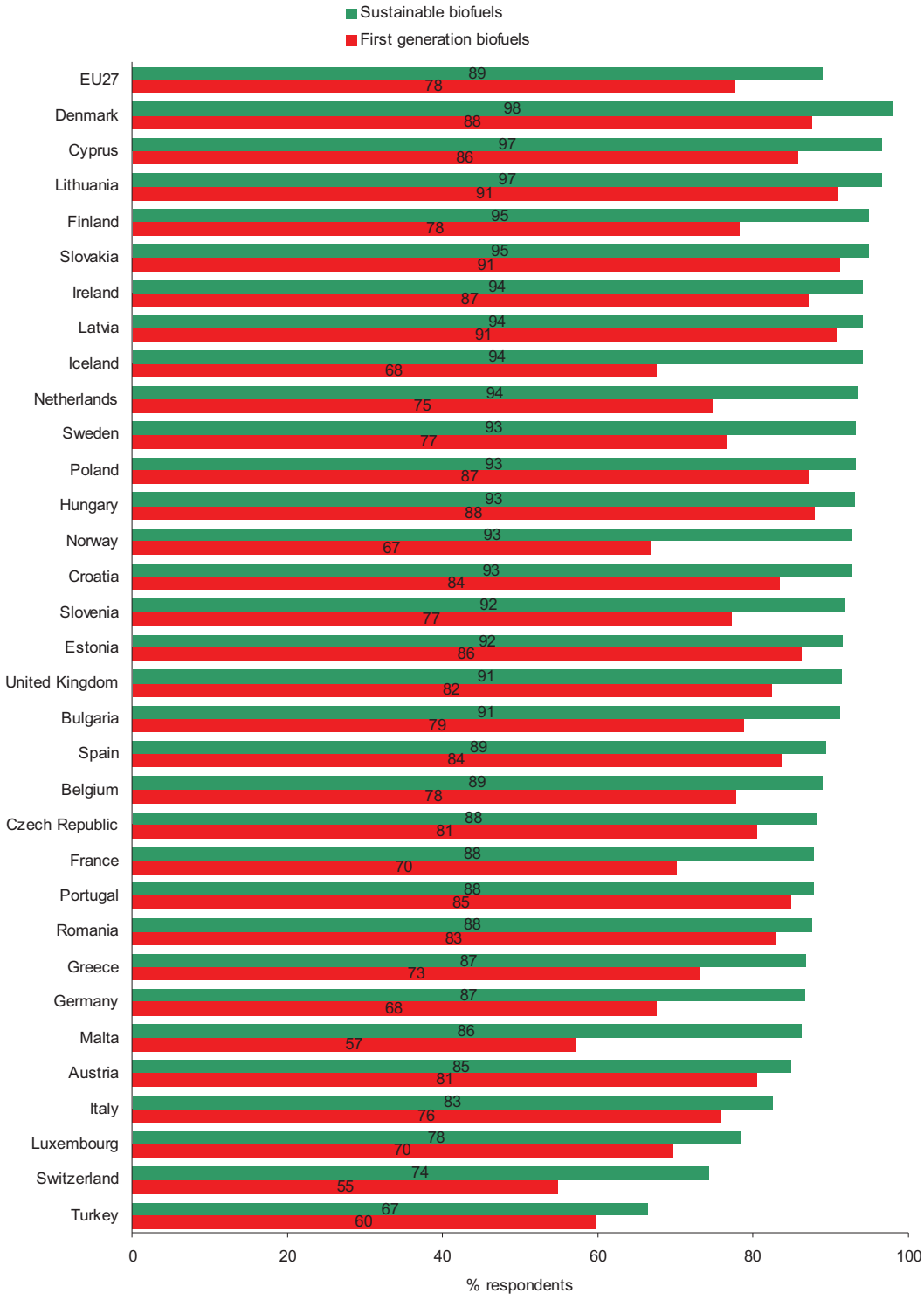


Figure 8 shows the levels of approval towards biofuels by country, ordered according to their overall levels of support for sustainable biofuels. Respondents in all countries support sustainable bio-fuels more than the crop based variety. In every country the majority support traditional biofuels, with highest level of support in Slovakia, Denmark, Hungary and Baltic States (more than 80 per cent). Hence, there is an overwhelming preference for such biofuels across Europe. Large gaps between the approvals of the two generations of biofuels emerged in Scandinavia and Central Europe. Probably the term 'sustainable' is considered particularly favourable in these countries while in countries such as Portugal or Turkey, where differences are much less, the issue of sustainability has not gained such prominence.

Figure 8: Support for first generation and sustainable biofuels (excluding DKs)



2.3 Synthetic biology

Synthetic biology is an emerging field in which scientists seek to turn biology into an engineering discipline. Rather than introducing one or a few genes into existing organisms, they want to construct novel organisms and their genomes from scratch, using genetic 'building blocks' that ideally could be freely combined. For example, the scientist Craig Venter and colleagues in May 2010 announced that they had managed to introduce a functioning fully synthetic genome into a bacterium. Such results currently meet with considerable media attention, but when it comes to public perceptions, it must be assumed that synthetic biology has hardly entered public awareness. Nevertheless, and not unlike nanotechnology, scientists are concerned that the new field could meet public resistance. Apart from moral considerations over 'creating life', a potentially sceptical public prompted scientists and regulators to address ethical and social issues at a very early stage despite the lack of almost any current practical applications.

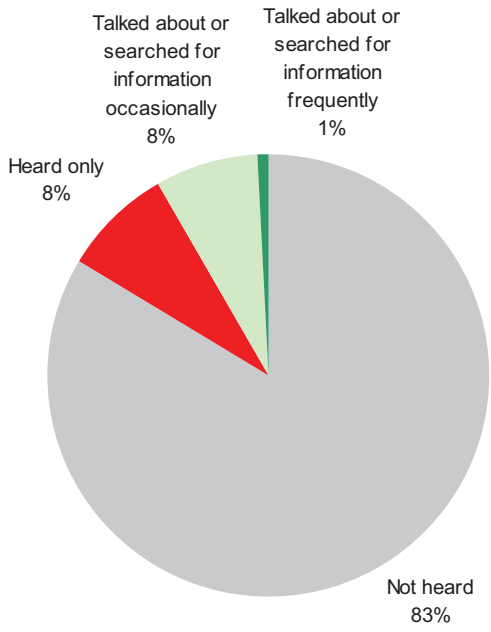
In this section, we ask how people deal with emerging technologies – such as synthetic biology – that still are unfamiliar to them. Confronted by such an innovation, what information is important to them? How and in what ways does familiarity with the technology influence its evaluation? What is important to people when it comes to decision-making and regulation?

Based on the assumption that synthetic biology still is widely unknown, respondents in the Eurobarometer were, first of all, presented the following description:

> *Synthetic biology is a new field of research bringing together genetics, chemistry and engineering. The aim of synthetic biology is to construct completely new organisms to make new life forms that are not found in nature. Synthetic biology differs from genetic engineering in that it involves a much more fundamental redesign of an organism so that it can carry out completely new functions.*

Respondents were then asked whether they had heard anything about synthetic biology before, and if they had, whether they had talked with anyone about it or searched for further information. The results, shown in Figure 9, indicate that synthetic biology is an unfamiliar technology to most Europeans. 83 per cent indicate that they have not heard about it. Out of those having heard about it (17 per cent), 8 per cent say that they have (passively) heard but not talked about it nor searched for any information. Only 9 per cent have talked about or searched for information occasionally or more. The innovation is most familiar in Switzerland (30 per cent having heard) and least familiar in Turkey (10 per cent having heard).

Figure 9: Awareness of synthetic biology, EU27



Even if people are unfamiliar with a technology, they nevertheless are sometimes called upon to make up their minds. While it makes little sense to ask people whether they support an unknown technology or not, it is worthwhile asking what information they would be interested in to learn more about the new development. What pieces of information do they regard as relevant, and what questions would they like to be answered?

Respondents were presented with the following scenario:

> *Suppose there was a referendum about synthetic biology and you had to make up your mind whether to vote for or against. Among the following, what would be the most important issue on which you would like to know more?*

Respondents were offered a list of seven issues and asked to choose the three options that were of most interest to them. 84 per cent of those asked[5] indeed chose three questions. The remaining 16 per cent chose fewer issues; this group consisted predominantly of respondents who gave 'don't know', 'none' or 'other' responses. There are considerable country differences in these responses. The highest number of such 'don't know' responses is found in Turkey (41 per cent); In the remaining countries the proportion of such responses ranges from 6 per cent (Czech Republic) to 22 per cent (Latvia). To ensure comparable base rates, for the following analyses only those respondents who chose three of the following issues are included.

[5] The questions on synthetic biology were part of a split ballot, i.e. only half of respondents were asked.

Table 2: Issues about which respondents would like to know more in relation to synthetic biology, EU27 (excluding DKs)

Issue	% respondents selecting the issue
What are the possible risks	73
What are the claimed benefits	61
Who will benefit and who will bear the risks	47
What the scientific processes and techniques are	37
What is being done to regulate and control synthetic biology	34
Who is funding the research and why	28
What is being done to deal with the social and ethical issues involved	19
Other/none	1

Note: percentages sum to 300 because respondents chose three pieces of information

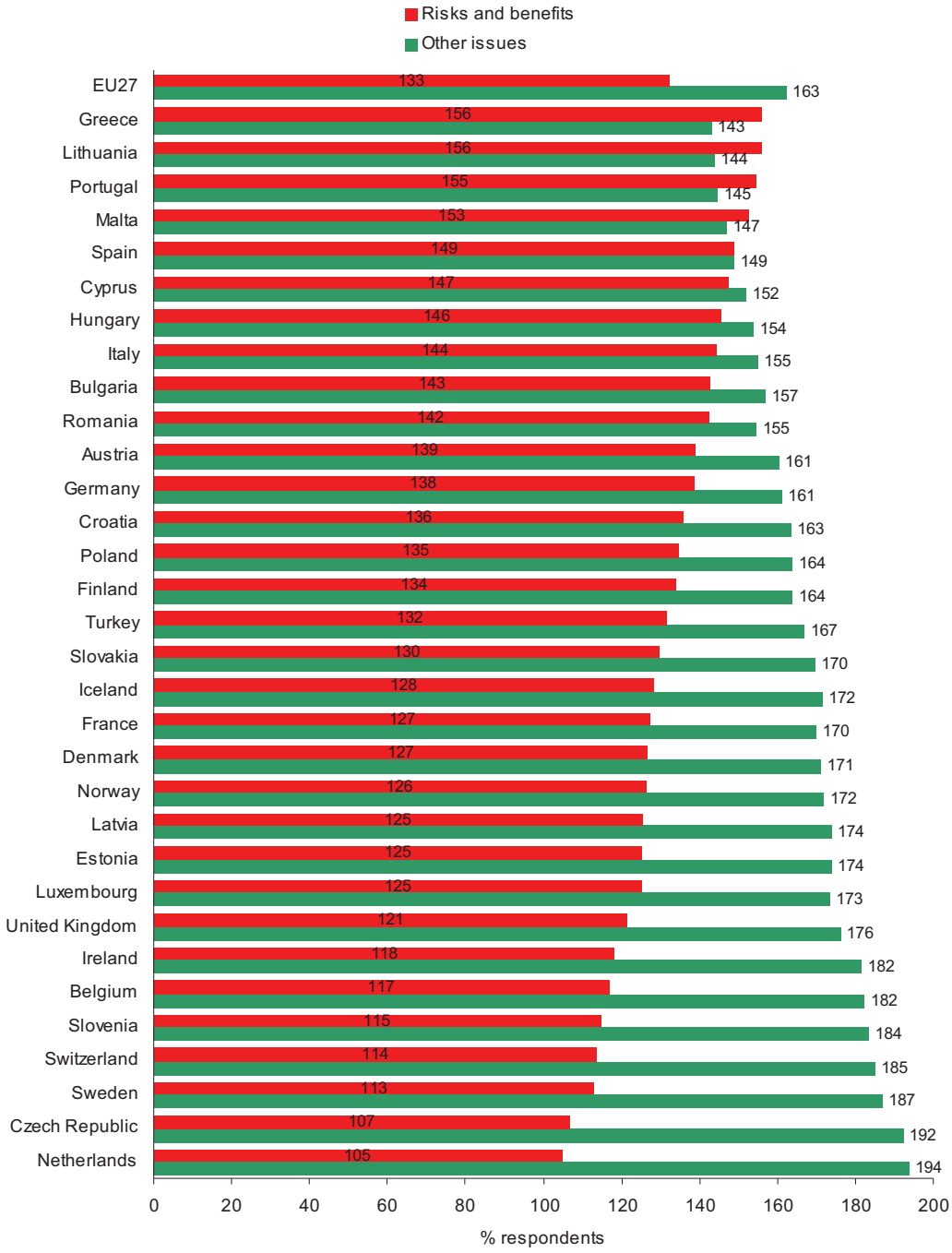
Clearly, potential risks and benefits related to synthetic biology are of upmost interest to respondents. However, all the other issues are of interest to a not insignificant proportion of the European publics. Remarkably, information about social and ethical issues clearly comes last in the list, while the scientific processes involved meet considerable interest.

The most frequent out of 35 possible combinations are risks, benefits and the distribution of risks and benefits (16 per cent); risks, benefits and scientific processes (11 per cent); risks, benefits and regulation (9 per cent); and risks, benefits and funding (7 per cent). All other combinations are less frequent (less than 5 per cent). The most frequent combinations all include interest in information on both risks and benefits.

Risks and benefits are of high interest in all countries. Germany is the only country where interest in benefits is higher than in risks; in all other countries risks are of highest interest. While in Belgium, the Czech Republic, Estonia and France, interest in risks almost double that in benefits, in most other countries the interests in risks and benefits are more balanced.

Figure 10 highlights the importance of risks and benefits relative to other issues in different European countries. While in Greece, Lithuania, Portugal and Malta, risks and benefits combined represent the most important concern, there are other countries where issues such as the distribution of risks and benefits, scientific details, control and regulation, funding, or social and ethical issues play a more prominent role. Of all countries, interest in the distribution of risks and benefits is highest (more than 60 per cent) in the Netherlands, the Czech Republic and in Slovakia; interest in scientific details is most pronounced (more than 50 per cent) in the Czech Republic, in Bulgaria, Estonia and Slovenia; a demand for information on control and regulation is particularly high (more than 40 per cent) in Sweden, France, Iceland and Switzerland; the issue of funding attracts most interest (more than 30 per cent) in Romania, Luxemburg and Ireland; and social and ethical issues are of highest interest (more than 30 per cent) to respondents in the Netherlands, Denmark, Iceland and Sweden.

Figure 10: Priority given to finding out about risks and benefits (versus other issues) in relation to synthetic biology[6]



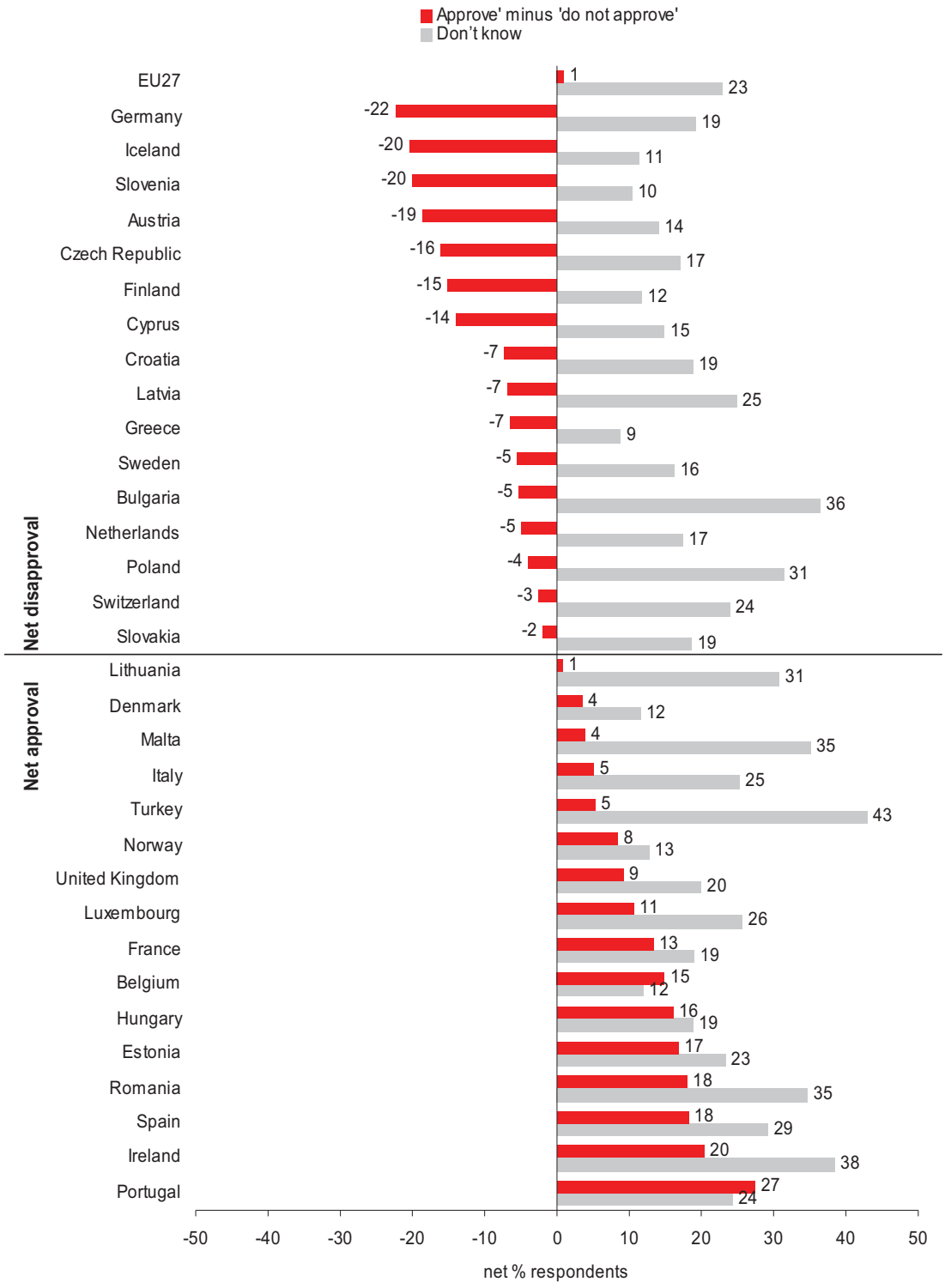
[6] Note: Percentages within each country sum to 300 because respondents have chosen three pieces of information. Only those respondents who chose three pieces of information are included in this graph: those who responded 'don't know' or who mentioned only one or two types of information are excluded from the graph.

Should synthetic biology be supported or not?

Finally, respondents were asked about their views on whether, and under what conditions, synthetic biology should be approved. Not surprisingly, a substantial percentage across Europe (23 per cent) say they don't know (9 per cent in Greece, 43 per cent in Turkey). The remaining respondents, however, are willing to voice a view despite the technology's unfamiliarity. Some (17 per cent) say that they do not approve under any circumstances and 21 per cent do not approve except under very special circumstances. More than a third (36 per cent) approve as long as synthetic biology is regulated by strict laws and only 3 per cent fully approve and do not think that special laws are necessary. Overall, it seems safe to say that Europeans consider synthetic biology a sensitive technology that demands for precaution and special laws and regulations, but an outright ban would not find overwhelming support.

Figure 11 shows that, across Europe, the numbers of those approving and non-approving are roughly equal, an indication that synthetic biology potentially may become a controversial issue. Furthermore, the picture of a divided Europe emerges: the proportions of those approving and non-approving vary considerably. While in half of the countries under consideration, supporters outnumber critics, the opposite is true for the other half of the countries. People in central European countries such as Germany, Slovenia, Austria and the Czech Republic (as well as Iceland) are particularly cautious (50 per cent or more do not approve at all or only under very special circumstances). Support, in contrast, is more frequent in Southern (Portugal, Spain) and Eastern countries (Romania, Estonia, Hungary), as well as in Ireland. In these latter countries, the majority of respondents express approval of the technology if regulated by strict laws.

Figure 11: Approval of and ambivalence towards synthetic biology



The grey bars indicate percentages of 'don't know' responses. Red bars indicate the difference between approval and non-approval with negative values indicating higher proportions of non-approval and positive values indicating higher proportions of approval. 'Do not approve' comprises 'do not approve under any circumstances' and 'do not approve except under very special circumstances', and 'Approve' comprises 'approve as long as this is regulated by strict laws' and 'fully approve and do not think that special laws are necessary'.

How is familiarity with synthetic biology related to the technology's evaluation? Those who have heard about synthetic biology are much more likely to approve, as long as it is regulated by strict laws. Those who have not heard about the innovation are both more likely to so say that they don't know or that they do not approve under any circumstances. The fact that those familiar with synthetic biology are more supportive should be interpreted with caution though; it is only a small group of respondents who have heard about it. It is possible that familiarity leads to more support, but it is also possible that it is a technophile avant-garde that – because of its affinity to and support of technologies – has heard about synthetic biology[7] in the first place. Whether familiarity will lead to more support for a broader public, remains an open question.

In summary, a large majority of Europeans is unfamiliar with synthetic biology, giving us the opportunity to investigate how European citizens deal with fundamentally unknown issues. Asked what information they would like to be offered, risks and benefits are the preferred options across Europe. However, other issues – such as the distribution of risks and benefits, funding, scientific details, regulation and social and ethical issues – also represent important concerns to relevant proportions of the European public. When it comes to the evaluation of synthetic biology, Europe seems to be evenly split: the proportion of those approving of synthetic biology equal those not approving. About half of the countries included are predominantly cautious, while the other half is predominantly supportive. It should be noted, though, that support is almost always conditional on strict laws and regulation.

However, Europeans, on the whole, are not technophobic. They want to be informed about what to expect from the innovation and to ensure prudent regulation. While those familiar with synthetic biology are more likely to express (conditional) approval than those unfamiliar, it remains an open question whether increasing familiarity with the topic will make European citizens more supportive of synthetic biology in general or not.

[7] Means for technology optimism seem to support this view: those having heard of synthetic biology are more optimistic about other technologies than those who have not heard (not heard of synthetic biology M = 4.78, SD = 2.14; passive awareness: M = 5.51, SD = 1.90; active awareness: M = 5.44, SD = 2.06).

3. Biotechnologies for food production

3.1 GM food

20 years after the first EU directive on deliberate release was released, the issue of GM crops and food is still unresolved. Only two crops have formal approval for cultivation – Monsanto's MON 810 Maize and, most recently, BASF's Amflora potato. At present only six countries have planted GM crops – Spain, the Czech Republic, Portugal, Romania, Poland and Slovakia– about 95,000 hectares in total in 2009[8], compared to 134 million hectares world wide. However, currently six countries have bans on GMOs using the 'safeguard clause': Austria, France, Germany, Greece, Hungary and Luxembourg. Italy has said that it will defy the EC and refuse to allow GM crop to be grown, but has not done so formally. Confronted by this opposition, the European Commission is taking the subsidiarity route. Member States, it is proposed, will have the legal right to decide whether to cultivate GM crops or not (European Commission 2010b).

GM food was introduced to respondents in the following way:

> *'Let's speak now about genetically modified (GM) food made from plants or micro-organisms that have been changed by altering their genes. For example a plant might have its genes modified to make it resistant to a particular plant disease, to improve its food quality or to help it grow faster.'*

Figure 12 shows that the majority of Europeans are familiar with GM food. Nearly half of them have not only heard about it but also talked about it or searched for information. Only about 18 per cent have not heard of it before the interview. Levels of engagement seem then to reflect continued media attention of the issue.

[8] GMO Compass, http://www.gmo-compass.org/eng/agri_biotechnology/gmo_planting/392.gm_maize_cultivation_europe_2009.html

Figure 12: Awareness of GM food, EU27

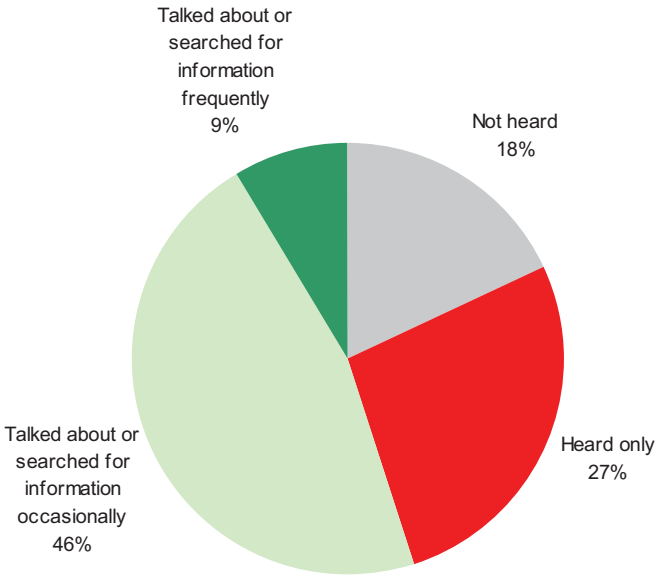
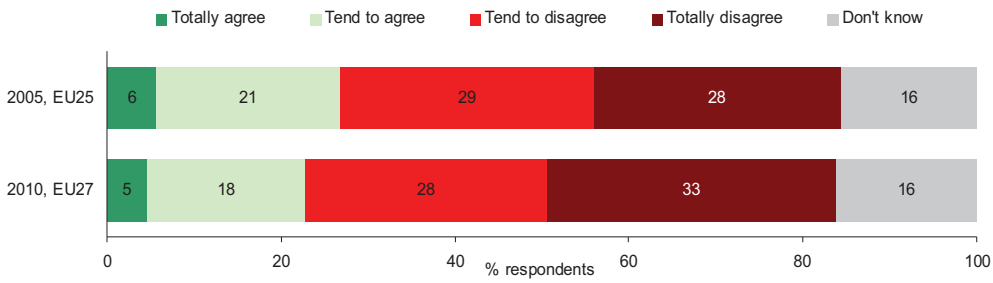


Figure 13 presents the levels of support for GM food for both EU27 in 2010 and for comparative purposes EU25 in 2005. In 2010, combining 'totally agree' and 'tend to agree' we find 27 per cent in support. By the same token, 57 per cent are not willing to support GM food. The comparison between 2010 and 2005 shows no substantial changes in the public's perception of GM food.

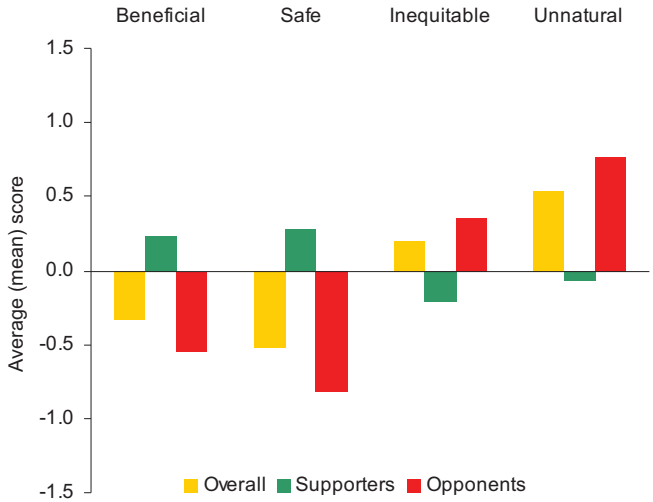
Figure 13: Support for GM food, EU27



To explore what may be driving the public perceptions of GM food, we used the same set of question as nanotechnology (see Chapter 2.1). With these questions, we have the four indices of whether respondents perceive GM food as beneficial, safe, inequitable and worrying. In Figure 14 the first (yellow) bar in each cluster shows overall perceptions of the four dimensions. Contrary to scientific and industry opinion, the European public see GM food as not offering benefits, as unsafe, as inequitable and as worrying.

Splitting the overall sample into those who support GM food (the middle, green bar in each cluster) and those who oppose it (the last, red bar in each cluster), we see that the dimension that most differentiates supporters and opponents is the issue of safety. This is followed by benefit and worry. Even the supporters are lukewarm about benefits and safety, and on balance only marginally convinced that GM food is equitable and worry-free. The views of opponents run in the opposite direction, and are considerably more extreme. The perceived safety deficit suggests that the risk assessment for GMOs in place according to EU rules is not considered valid. It could also be interpreted as an entrenched attitudinal association between GM food and a lack of safety, notwithstanding institutional efforts to demonstrate the opposite.

Figure 14: Perceptions of GM food as beneficial, safe, inequitable and unnatural, EU27 (excluding DKs)



Carrying out logistic regression analysis (see Section 2.1) to explain levels of support for GM food, we find that all four indices have an independent effect on levels of overall support. Here, safety is by far the most influential, with the other three making smaller, albeit statistically significant, contributions.

Using questions on GM food from previous waves of the Eurobarometer survey, we can track levels of support over time. In Table 3 we have three blocks of countries. Block 1 (from UK to Greece) comprises EU15 plus Switzerland and Norway, who were included in some of the earlier Eurobarometers. Block 2 (from Czech Republic to Cyprus) covers those additional Member States when the EU expanded to 25. Block 3 takes us to EU27, with Bulgaria and Romania, and also includes Iceland, Croatia and Turkey.

In Table 3 we show the percentage of respondents in each country who agree or totally agree that GM food should be encouraged. We base the calculations on only those who express an opinion. Highlighted in bold, green font are those countries in which GM crops are currently cultivated. It is noticeable that in these countries, support for GM food tends to be amongst the highest. Romania is an exception to the

rule. Highlighted in italicised, red font are the countries which have bans on the cultivation of GMOs. Apart from Hungary, at 32 per cent support, levels of support in these countries are amongst the lowest in Europe.

Across the period 1996-2010, we see, albeit with fluctuations, a downward trend in the percentage of supporters. Denmark and the UK, at the higher end of the distribution of support, are exceptions, as is Austria, at the lower end. Those among the 'old' EU countries with a ban on GM crops in place consistently show low values of encouragement, with Italy obviously joining the group. In contrast, Member States where GM crops are grown tend to show among the highest values, which might suggest a link between private attitudes and public policies.

Table 3: Trends in support for GM food (excluding DKs)

% respondents who agree or totally agree that GM food should be encouraged					
	1996	**1999**	**2002**	**2005**	**2010**
United Kingdom	52	37	46	35	44
Ireland	57	45	57	43	37
Portugal	**63**	**47**	**56**	**56**	**37**
Spain	**66**	**58**	**61**	**53**	**35**
Denmark	33	33	35	31	32
Netherlands	59	53	52	27	30
Norway	37	30			30
Finland	65	57	56	38	30
Belgium	57	40	39	28	28
Sweden	35	33	41	24	28
Italy	51	42	35	42	24
Austria	*22*	*26*	*33*	*24*	*23*
Germany	*47*	*42*	*40*	*22*	*22*
Switzerland	34				20
Luxembourg	*44*	*29*	*26*	*16*	*19*
France	*43*	*28*	*28*	*23*	*16*
Greece	*49*	*21*	*26*	*14*	*10*
Czech Republic				**57**	**41**
Slovakia				**38**	**38**
Malta				51	32
Hungary				*29*	*32*
Poland				28	30
Estonia				25	28
Slovenia				23	21
Latvia				19	14
Lithuania				42	11
Cyprus				19	10
Iceland					39
Romania					**16**
Bulgaria					13
Croatia					13
Turkey					7

3.2 Animal cloning for food production

Using the technique that created 'Dolly the sheep', animal cloning for food products has been offered as a commercial service. It is claimed that consumers will benefit simply because the offspring of clones will produce better meat and milk products. Because cloning is costly, it is the progeny (F1s) that will enter the food chain and not the clones (F0s). This is an important distinction as it has been argued that labeling would be restricted to the F0s and would not be necessary for the F1s. Whether the public will agree with the scientists that the F1s are the same as conventionally bred animals is a moot point; parents perceived to be unnatural may lead to perceptions of unnatural offspring.

Scientific opinions on animal cloning for food products have been published by the Center for Veterinary Medicine at the US Food and Drug Administration[9] and by the European Food Safety Authority. Both concur that cloning poses no increased risk for food consumption. However, they also agree that cloning raises questions about animal health. The health risks include large offspring syndrome with animals showing abnormalities of the lungs and other organs, increased incidence of cardiovascular and respiratory problems, and increased rates of mortality and morbidity compared to sexually reproduced animals. Those developing cloning claim that these problems will be minimized as the technology matures.

In the formulation of their opinions the FDA and EFSA invited comments from the public. Here EFSA notes that a large majority of submissions that did not support cloning 'were not scientific views'. The same occurred in the US, leading the FDA to stress that 'the Agency is not charged with addressing non-science based concerns such as the moral, religious, or ethical issues associated with animal cloning for agricultural purposes' (FDA 2008). Apparently, for the public on both sides of the Atlantic, cloning raises issues beyond the strictly scientific. (The issue of scientific versus moral criteria for governance is taken up in Chapter 6.)

Such concerns have also been voiced by the European Group of Ethics of Science and New Technology (EGE 2008), which reports to the President of the European Commission. The EGE conclude that while 'there are no categorical arguments against animal cloning for breeding with the purpose of food production, the EGE is not convinced so far that there are enough good reasons to alleviate the ethical concerns'. These include: moral unease at such a new dimension to animal breeding; the effects on animal welfare and health; the need for traceability and labelling; the requirement for further research efforts on key issues; and the need for a comprehensive public discussion. Perhaps influenced by these concerns, the European Parliament voted overwhelmingly for a ban on cloned animals for food. But what does the European public think of animal cloning for food products?

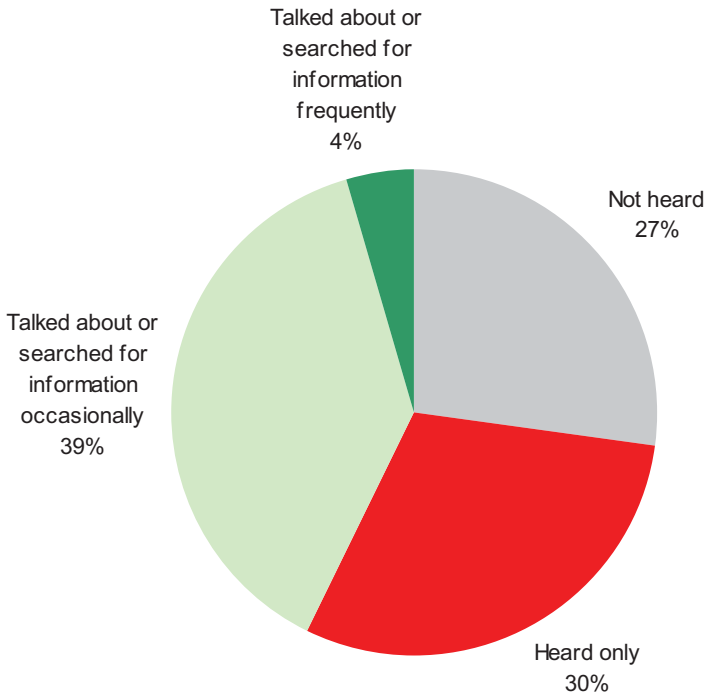
[9] (FDA; see http://www.fda.gov/cvm/cloning.htm)

In the survey, cloning was described as follows:

> *'Let's speak now about cloning farm animals. Cloning may be used to improve some characteristics of farmed animals in food production. Due to the high cost of cloning, this technique would mainly be used to produce cloned animals which will reproduce with non-cloned animals. Their offspring would then be used to produce meat and milk of higher quality. However, critics have raised questions about ethics of animal cloning.'*

Figure 15 shows that 71 per cent respondents have heard about animal cloning, with four in ten having talked about or searched for information on the topic. Given the very extensive coverage of Dolly the sheep in 1997, it is perhaps not surprising that this is a familiar issue for most people.

Figure 15: Awareness of animal cloning for food production, EU27



To gauge the attributes of public perceptions of animal cloning, we used the same question set used for nanotechnology and GM food (see Chapters 2.1 and 3.1), providing an indicator of support and assessments of whether respondents perceive animal cloning as beneficial, safe, inequitable and worrying. The yellow bars in Figure 16 show overall perceptions of the four indices. Similar to GM food, the European public see animal cloning as not offering benefits, as unsafe, as inequitable and as worrying. The similarities between perceptions of animal cloning and GM food are striking. Here, it is worth noting that these topics were in different sections of the split ballot design used in the

Eurobarometer. Those who answered the questions on GM food did not answer the questions on animal cloning, and vice versa.

Splitting respondents into those who support animal cloning for food products (green bars) and those who oppose it (red bars), we see a considerable degree of differentiation on the issue of safety. This is followed by benefit and worry. As with GM foods, supporters are not greatly convinced about benefits or safety, and while they do not think it is inequitable, they are on average as likely to worry about it as not to.

Regression modelling (see Section 2.1) shows that safety is the strongest predictor of support, with benefit, equity and worry making separate, but much smaller, contributions to the explanation of support for animal cloning.

Figure 16: Perceptions of animal cloning for food products as beneficial, safe, inequitable and unnatural, EU27 (excluding DKs)

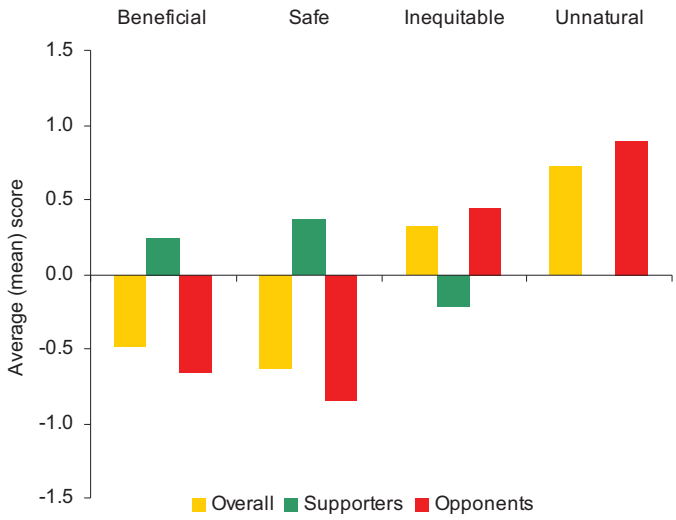
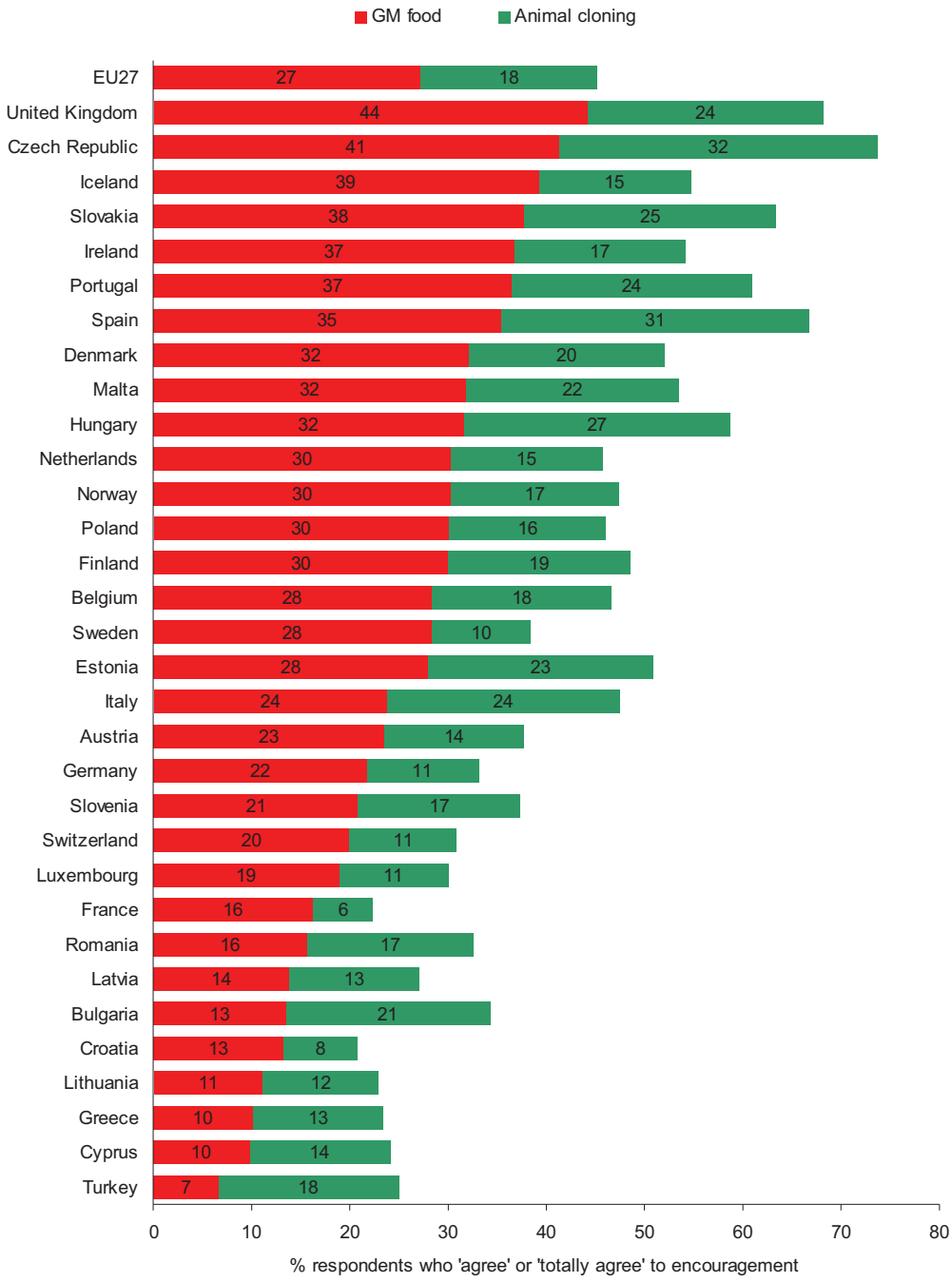


Figure 17 juxtaposes support for GM food and animal cloning for food products across Europe. As mentioned above, questions about these two technologies were in different sections of the split ballot used in the survey. Thus, we cannot determine the association between the two at the level of individuals. At the country level, however, we can assess the correlation between levels of support for the two technologies. It is moderately high, at 0.65.[10]

[10] Pearson's correlation coefficient, often called 'Pearson's r'. 0 would indicate that levels of support for GM food were unrelated to levels of support for animal cloning; 1 would indicate that they were essentially the same within countries; -1 would indicate that levels of support for GM food are exactly opposite to levels of support for animal cloning.

In only two countries are as many as three in ten supporters of animal cloning, among those who express an opinion. This contrasts with 14 countries in which support for GM food is above 30 per cent. Is this an indication of public anxieties about biotechnology and food? 'The natural superiority of the natural' captures many of the current trends in European food production – organic, local, food-miles, etc. And if 'unnaturalness' is one of the problems confronting GM food, it appears to be an even greater concern for animal cloning and food products.

Figure 17: Encouragement for GM food and animal cloning for food products (excluding DKs)



3.3 Transgenic and cisgenic apples

The preceding chapter on animal cloning suggested that 'unnaturalness' might be a reason for concern or even rejection among the public. For plants, new biotechnological methods are being developed that might be considered more 'natural' than conventional genetic modification, and at the same time reap the benefit from modern molecular breeding approaches. Is this a viable strategy when it comes to public concerns? Will such a 'technolite' solution be deemed more acceptable than conventional transgenic techniques?

Commercial apple growers spray crops with pesticides and fungicides on a frequent basis – in some locations 20 to 25 times a year – in order to prevent diseases such as canker, scab and mildew. This is both costly and a potential health risk. Public concern about pesticide residues in fruit and vegetables has been documented in a Eurobarometer survey sponsored by the European Food Safety Authority (EFSA 2008). With proposals for the introduction of maximum residue levels (MRLs), there may be pressure on the industry to look for alternative ways to protect crops from common diseases.

It has been found that crab apples, a closely related species that can cross naturally with food apples, have genes that provide resistance to the common apple diseases, but classical breeding to introduce such genes into modern varietals would be a painstakingly slow process. Cisgenics is the genetic modification of crops adding only genes from the same species or from plants that are crossable with the recipient plant in conventional breeding programmes. Thus, cisgenics might be thought of as biotechnologically informed 'green fingers', reducing the time to introduce new strains of fruit from decades to a matter of a few years.

Cisgenics, a technique also used to develop new strains of potato that are resistant to potato blight (a contributory factor in the Irish famine in the mid 19th century), can technically be compared to transgenics. In transgenics genes are taken from other species or bacteria that are taxonomically very different from the gene recipient and transferred into plants to promote resistance to herbicides or to insect pests – the latter by the incorporation of a gene that codes for Bacillus thuringiensis (Bt) toxin, for example.

How might the public respond to cisgenics? Would the transfer of genes within a genus ('life form') be more acceptable than transfers of genes across the genus? The species combined in a genus are generally perceived to be phenotypically equivalent and genetic transfers may be imagined as much more 'morally acceptable'.

Cisgenics was introduced in the survey with the following description:

> *Some European researchers think there are new ways of controlling common diseases in apples– things like scab and mildew. There are two new ways of doing this. Both mean that the apples could be grown with limited use of pesticides, and so pesticide residues on the apples would be minimal. The first way is to artificially introduce a resistance gene from another species such as a bacterium or animal into an apple tree to make it resistant to mildew and scab…. The second way is to artificially introduce a gene that exists naturally in wild/ crab apples which provides resistance to mildew and scab.*

Respondents were then asked to what extent they agreed or disagreed with a number of statements in relation to these techniques:

1. *It is a promising idea* (transgenic)*/ it will be useful* (cisgenic)
2. *Eating apples produced using this technique will be safe* (transgenic)*/it will be risky* (cisgenic)
3. *It will harm the environment*
4. *It is fundamentally unnatural*
5. *It makes you feel uneasy*
6. *It should be encouraged.*

These questions allow us to make two main comparisons. The first is between transgenics and cisgenics in apple production: Is genetic modification within a species more acceptable to the public than modifications which cross the species barrier? Secondly, we can also compare public perceptions of transgenic apples with perceptions of GM food. In principle there should be no difference as the process described in the survey of creating transgenic apples is identical to the process of creating other GM food. However, it may be that GM in the context of food in general carries other negative connotations that drive public perceptions. Some perceived risks become almost stigmatised, with the mere mention of them leading to negative perceptions.

Figure 18 shows the contrast between perceptions of the indices of transgenic and cisgenic apples. Across EU 27, 55 per cent support cisgenisis, some 22 per cent more than those who support transgenics. As can be seen, cisgenic apples are more positively perceived on all the indices. They make people feel less uneasy than transgenic apples; they seem more natural, less problematic for the environment, safer and more useful/promising.

Figure 18: Perceptions of transgenic and cisgenic apples, EU27

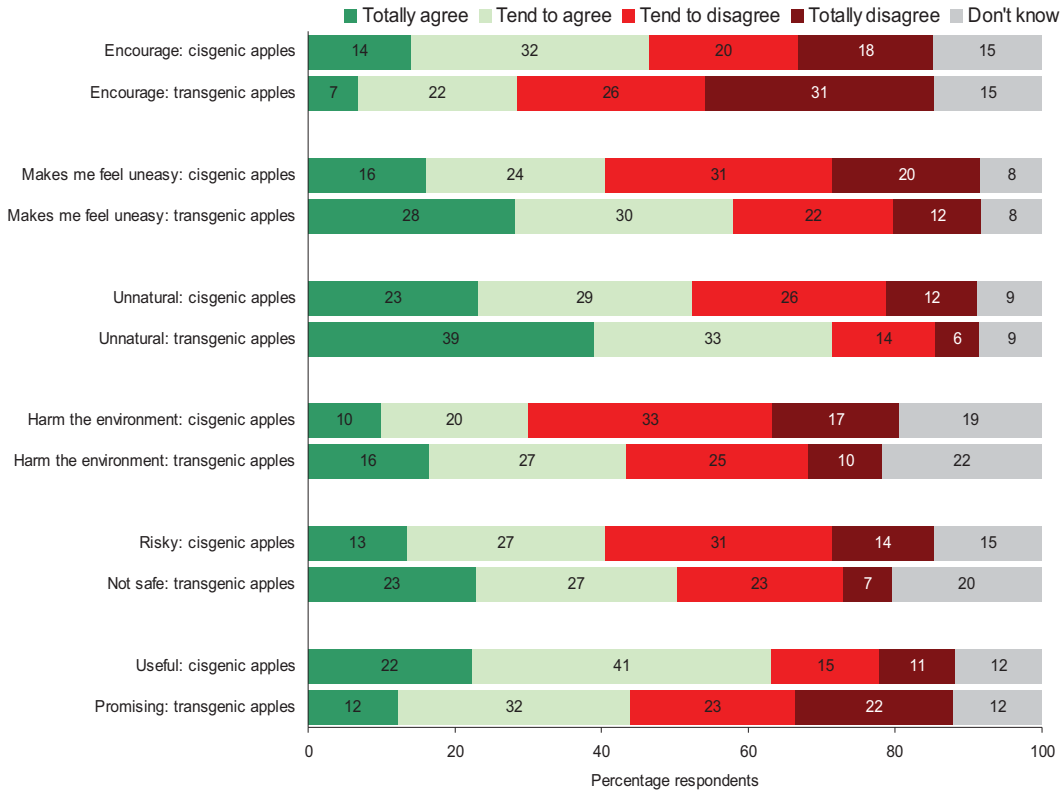
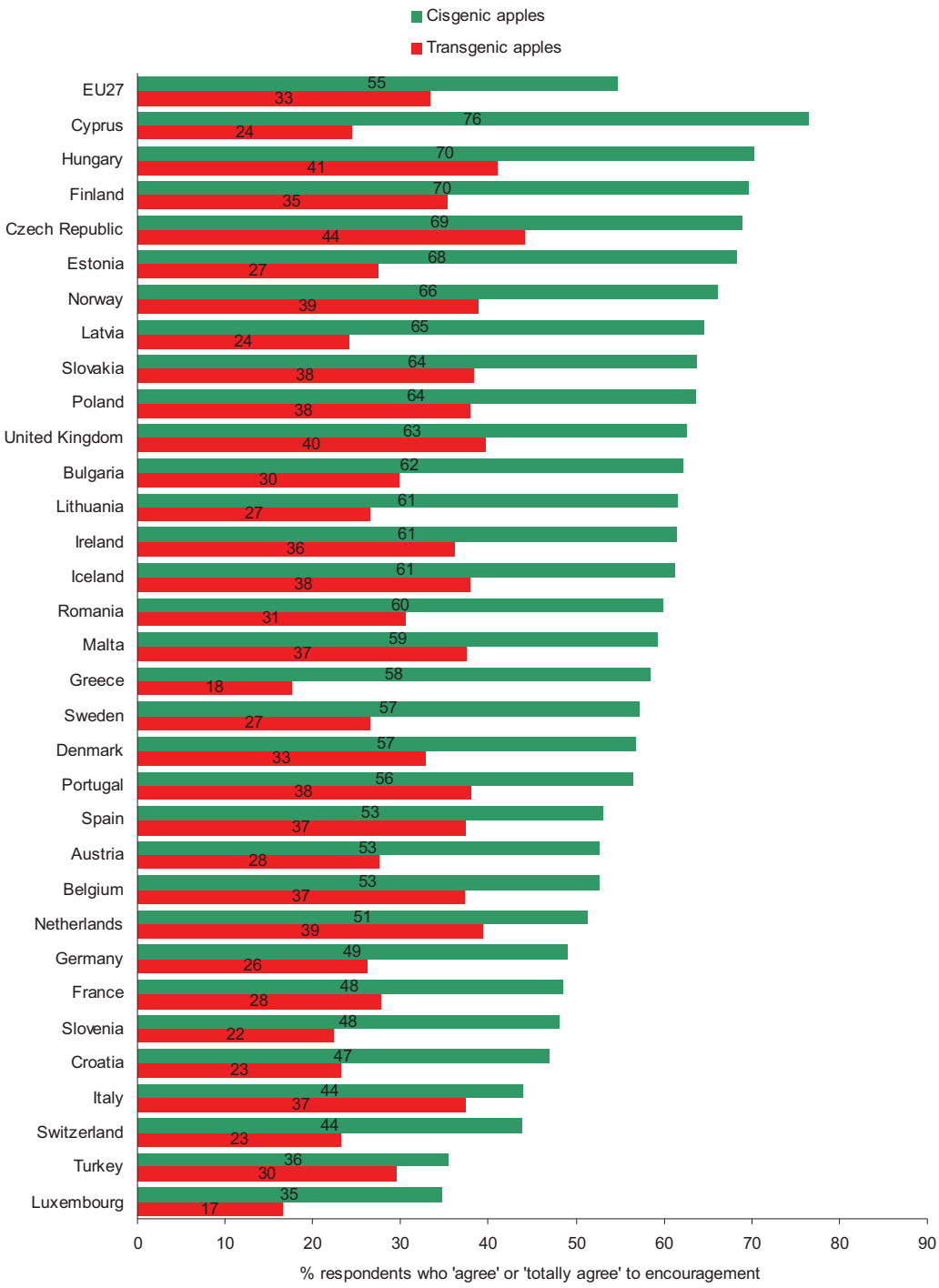


Figure 19 shows the country profile of support for transgenic and cisgenic apples. In all countries, cisgenic apples receive higher support than transgenic apples. In 24 countries an absolute majority of those who expressed an opinion are supportive of cisgenic apples.

Figure 19: Support for transgenic and cisgenic apples (excluding DKs)



In contrast to transgenics, it seems that people may perceive cisgenic apples as not transcending the 'life-form' barrier separating living beings. Hence, cisgenics appears to be more natural, perhaps comparable to hybridization in 'natural' horticulture.

What of the comparison between GM food and transgenic apples, which were both described in the survey as the result of a similar process of genetic modification?

For EU 27, support for GM food is 27 per cent among those who expressed an opinion, while the comparable figure for transgenic apples is 37 per cent. Can we determine from other questions what differentiates GM food from transgenic apples that might account for the latter receiving 10 per cent more support?

Table 4 shows the contrasting perceptions of the safety, environmental impacts and 'naturalness' of GM food, transgenic apples and cisgenic apples.

Table 4: Perceptions of safety, environmental impacts and naturalness of GM food and transgenic apples, EU27 (excluding DKs)

% responses	**GM food**	**Transgenic apples**	**Cisgenic apples**
Safe/not risky[11]	**27**	**37**	**53**
Not harmful for the environment	**30**	**55**	**63**
Unnatural	**76**	**78**	**57**
Support	**27**	**33**	**55**

While both GM food and transgenic apples are seen to be 'unnatural' by three out of four respondents, transgenic apples are more likely to be perceived as safe and not to harm the environment. This suggests that the preamble describing transgenic apples as a technique would '*limit use of pesticides, and so pesticide residues on the apples would be minimal*' may have suggested a benefit both to the environment and to food safety.

It has long been suggested that the Achilles' heel of current GM crops and food has been the perceived absence of benefits for the public and their imagined threat to nature's integrity. Cisgenics might be seen as a hypothetical example of the so-called 'second generation' of GM crops. Here, the benefits of GM apple breeding are achieved with a technolite process, consumer benefits are apparent and as such more acceptable, by a factor of two.

[11] The criterion of safety was captured by different questions for each item: for GM food, agreeing that it is 'Safe for your health and your family's health'; for transgenic apples, agreeing that 'Eating apples produced by this technique will be safe'; and for cisgenic apples, *disagreeing* that 'It will be risky'.

4. Regenerative medicine

Throughout the series of Eurobarometer surveys on life science and society, biomedical research has enjoyed more public support than agricultural applications of biotechnology (Bauer 2005). Biomedicine, it seems, still encapsulates the very idea of progress in the public mind, having greatly contributed to the alleviation of disease and suffering and having led to greater quality of life. Both public and private investments in various medical applications of biotechnology have been significant in Europe. However, there is one field within medical biotechnology that repeatedly attracted criticism. Regenerative medicine, "the process of creating living, functional tissues to repair or replace tissue or organ function lost due to age, disease, damage, or congenital defects" (according to a definition by the NIH) promises significant improvements for an ageing population. However, it is beset with intriguing moral dilemmas surrounding the origin of living cells and tissue. No wonder, the regulation of regenerative research has been challenging. At times it has escalated into heated political controversies.

The field of human embryonic stem cell research epitomises some of the central tensions. Promoters herald the potential of such research to contribute to the alleviation of human suffering and restore dignity to patients and their families. This position has become a conflict of principle. On the one hand, safeguarding the freedom of scientific research to push back the frontiers of knowledge; on the other hand, using cells from human embryos is seen as an affront to the dignity of human life.

Human embryonic stem cell research not only raises religious opposition (especially from Catholics) but is also seen as going against the public order that highly values the sanctity of human life. Other fields of regenerative medicine have been also a cause of concern for regulators. Gene therapy has been in the pipeline for almost two decades but has repeatedly been halted because of safety issues. Another controversial application is xenotransplantation, regarded as an important source of cells and tissues for transplantation into humans but fraught with issues over potential risks (for example porcine endogenous retroviruses) arising from crossing species.

Questions in the Eurobarometer cover these issues. We also include questions that move from repair to improvement, attempting to capture public views on human enhancement, that is using techniques of regenerative medicine not only to repair debilitated bodily functions to the normal level but also to improve certain aspects of human performance beyond this level. This raises questions over risk and benefit, what is to be considered normal, and distributional equity.

In this section we first report on public views on the regulation of regenerative medicine and human enhancement in 2010 and briefly discuss the most significant changes from 2005. We then attempt to disentangle the ethical positions or dilemmas of the debate that are driving public views.

Respondents were presented with the following questions:

Let's speak now about regenerative medicine which is a new field of medicine and clinical applications that focuses on the repairing, replacing or growing of cells, tissues, or organs.

1. *Stem cell research involves taking cells from human embryos that are less than 2 weeks old. They will never be transplanted into a woman's body but are used to grow new cells which then can be used to treat diseases in any part of the body. Would you say that...?*
2. *Now suppose scientists were able to use stem cells from other cells in the body, rather than from embryos. Would you say that...?*
3. *Scientists can put human genes into animals that will produce organs and tissues for transplant into humans, such as pigs for transplants or to replace pancreatic cells to cure diabetes. Would you say that...?*
4. *Scientists also work on gene therapy which involves treating inherited diseases by intervening directly in the human genes themselves. Would you say that...?*
5. *Regenerative medicine is not only about developing cures for people who are ill. It is also looking into ways of enhancing the performance of healthy people, for example to improve concentration or to increase memory. Would you say that...?*

The response alternatives were:

- *You fully approve and do not think that special laws are necessary*
- *You approve as long as this is regulated by strict laws*
- *You do not approve except under very special circumstances*
- *You do not approve under any circumstances*

Figure 20: Levels of approval of biomedical research and synthetic biology, EU27

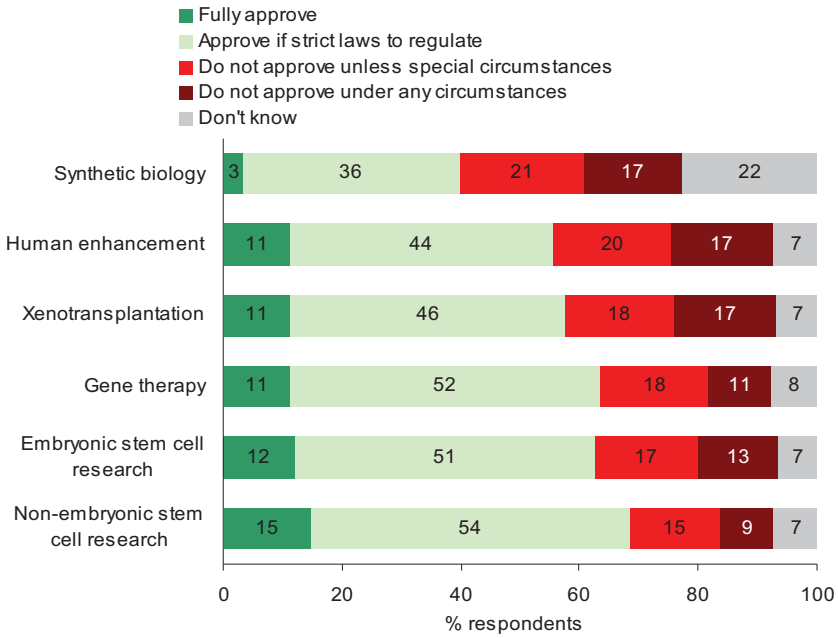


Figure 20 presents the overall results for the EU27 countries as a whole. The greater majority of this European public is willing to express an opinion on regenerative medicine. We find less than 10 per cent 'don't know' responses. In contrast, one fourth of the European public has not formed an opinion on the emerging field of synthetic biology (included here for comparative purposes, but discussed in greater detail in Section 2.3).

In general, levels of approval are rather high. If we combine the two positive statements ('fully approve and I do not think that special laws are necessary', 'approve as long as this is regulated by strict laws'), some 68 per cent approve of stem cell research and 63 per cent approve of embryonic stem cell research. Levels of approval for gene therapy are similar, at 64 per cent . Xenotransplantation – an application long subject to moratoria in various national contexts and an application which was seen as even more critical than GM food in the 1996 Eurobarometer (Gaskell et al. 1998, p207) – is now approved by 58 per cent of respondents. The solid support for medical applications of biotechnology spreads over to non-therapeutic applications, moving from repair to improvement we observe that 56 per cent of the European public approves of research that aims to enhance human performance. This result is consistent with expectations of brain and cognitive enhancement where 59 per cent said they were optimistic about such developments. The new horizons opened up by biomedical research exploring and enhancing the functions of the brain, perhaps the ultimate frontier in science, is apparently favourably viewed by the European public in general.

The substantial levels of approval of these lines of research are, however, not unconditional. Approval is clearly contingent upon perceptions of adequate oversight and control to guide developments. For

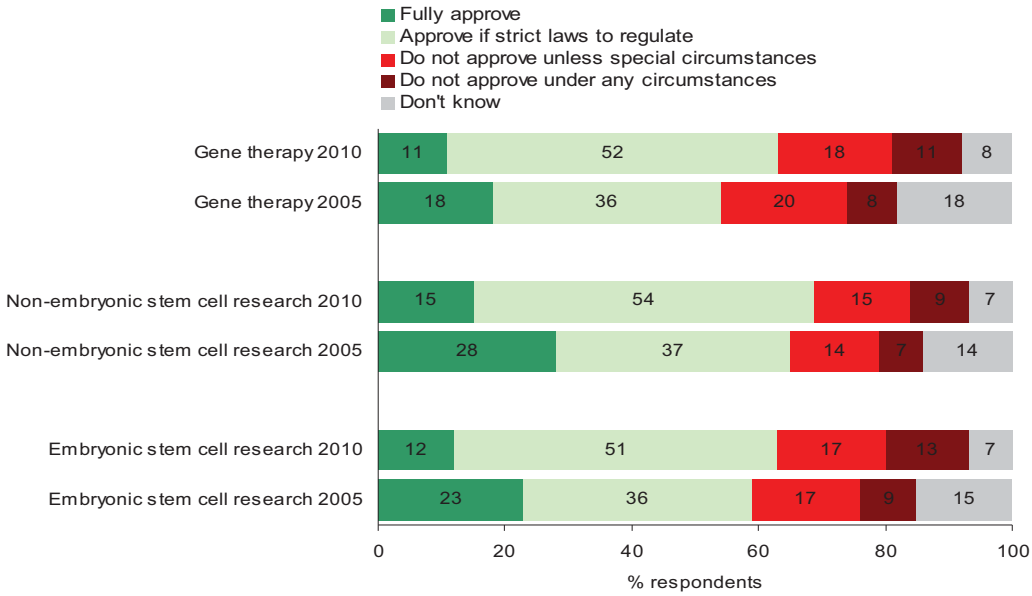
example, levels of approval when there are strict rules in place ranges from 44 per cent for human enhancement to 54 per cent for non-embryonic stem cell research. The percentages of those who do not approve but would allow developments in exceptional circumstance, 'sceptical approval', range from 15 per cent for non-embryonic stem cell research to 20 per cent for human enhancement. Both general approval and general rejection of regenerative biotechnology are only minority positions.

These results show a very clear picture that raises a range of important issues for processes of governance of this rapidly growing field of research. The European public does not generally approve or reject applications of regenerative medicine and human enhancement, but wants developments to be kept under control.

National regulation of human embryo stem cell research varies greatly across the European member states. UK, Sweden and Belgium have adopted the most permissive legislation with Germany and Italy adopting the most restrictive. The 2005 Eurobarometer report was made public at a time when the rules for eligible research funding for 7th FP 2007 to 2013 were being defined. The European Parliament and the Council opted for an approach that allowed the allocation of public funds to research using human embryo stem cells under strict condition. A year later the new EC directive on Advanced Therapy Medicinal Products (1394/2007) came into force.

Next we look at shifts and trends in levels of approval for three types of research between 2005 and 2010 (Figure 21). The views of the European public have become somewhat more decided, and across the applications, levels of conditional approval have increased. This is due to a small increase in those who do not approve under any circumstances and a somewhat larger decrease in the percentages of 'fully approve' responses.

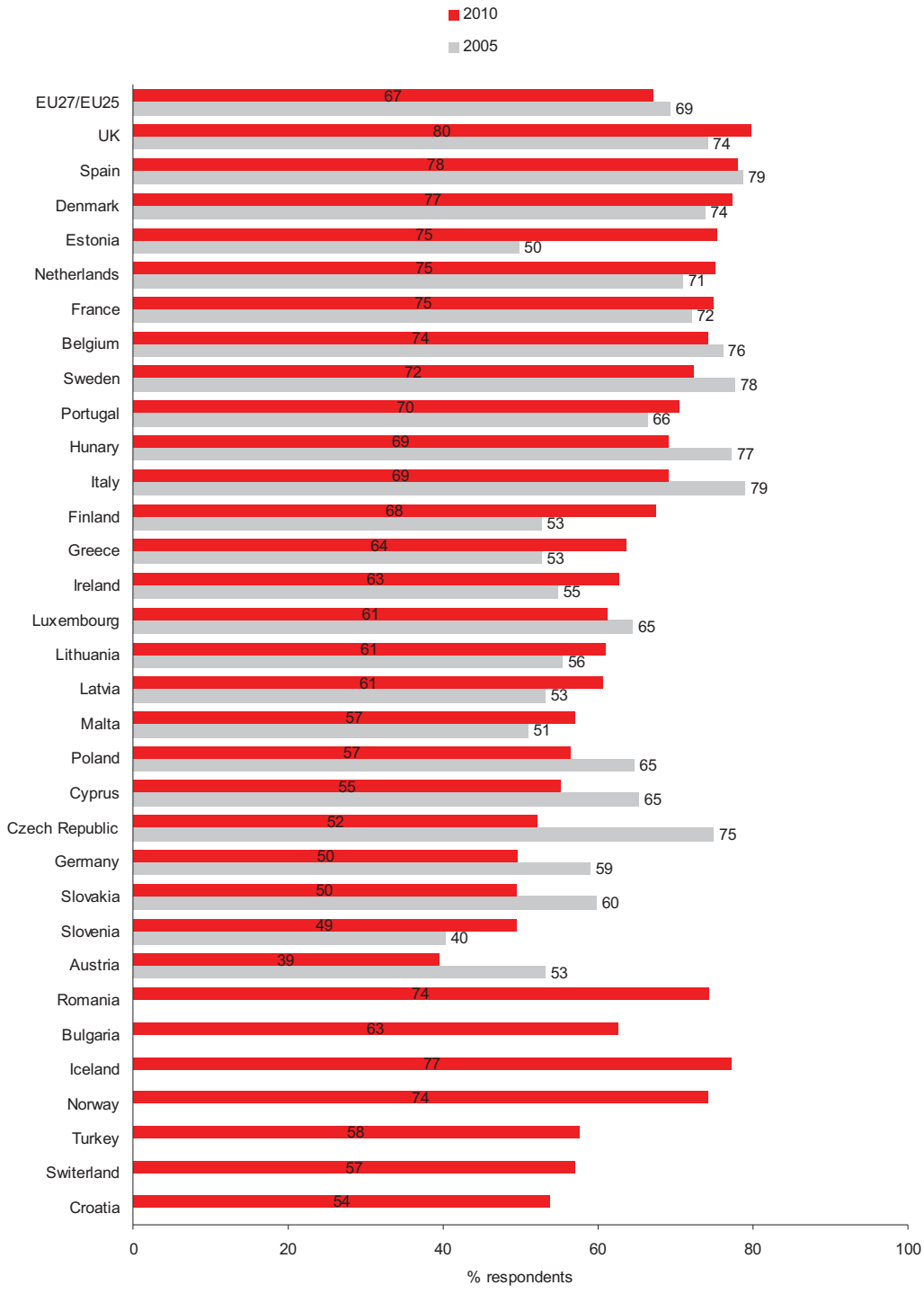
Figure 21: Levels of approval for embryonic and non-embryonic stem cell research and gene therapy, 2005 and 2010[12], Europe-wide



Human embryonic stem cell research continues to be a contentious issue so next we look more deeply into the changes between 2005 and 2010.

[12] Based on the 25 Member States in 2005 and 27 Member States in 2010

Figure 22: Levels of approval for human embryonic stem cell research, 2005 and 2010[13] (excluding DKs)



[13] Based on the 25 Member States in 2005 and 27 Member States in 2010.

Figure 22 shows the changes in levels of approval of embryonic stem cell research between 2005 and 2010 in the countries that were members of the EU in 2005. A comfortable majority (55 per cent or more) support embryonic stem cell research in 19 countries, from the UK at the top, down to Poland. Support has increased by 8 per cent or more in Estonia, Finland, Greece, Ireland, Latvia and Slovenia. In contrast, support has declined by 8 per cent or more in Hungary, Italy, Poland, Cyprus, The Czech Republic, Germany, Slovakia and Austria. While data for 2005 and 2010 do not constitute a trend, the decline in support across these eight countries may indicate problems to come. Finally, in the countries not included in the 2005 Eurobarometer survey, all bar Croatia show a comfortable majority in support. Interestingly enough, analyses for non-embryonic stem cell research and gene therapy point to similar trends.

The debates over the regulations of biomedical research have been strongly characterised by diverse ethical arguments and dilemmas. Respondents were asked to what extent they agreed or disagreed with the following statements relating to ethical considerations involved in regenerative medicine:

1. *It is ethically wrong to use human embryos in medical research even if it might offer promising new medical treatments.*
2. *We have a duty to allow research that might lead to important new treatments, even when it involves the creation or use of human embryos.*
3. *Immediately after fertilisation the human embryo can already be considered to be a human being.*
4. *Mixing animal and human genes is unacceptable even if it helps medical research for human health.*
5. *Research involving human embryos should be forbidden, even if this means that possible treatments are not made available to ill people.*
6. *Should ethical and scientific viewpoints on regenerative medicine differ, the scientific viewpoint should prevail.*
7. *You do not support developments in regenerative medicine if it only benefits rich people.*
8. *Research on regenerative medicine should be supported, even though it will benefit only a few people.*
9. *Research into regenerative medicine should go ahead, even if there are risks to future generations.*

Figure 23: Public views on ethical positions and regenerative medicine, EU27

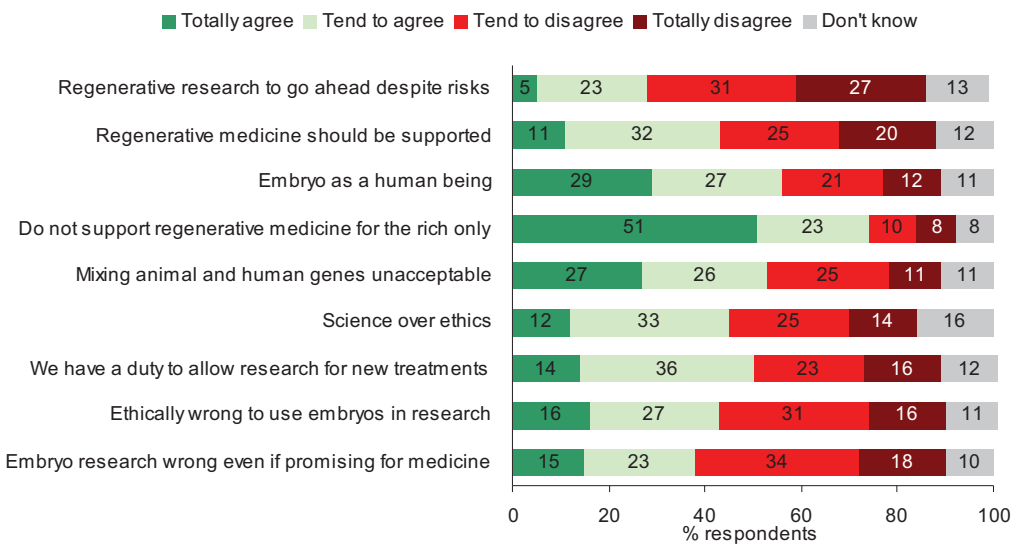


Figure 23 shows that an overwhelming majority of respondents claim not to support the lines of research in question if they only benefit the rich. The views of Europeans clearly diverge on most other issues relating to ethical positions, such as the sanctity of human life and the essence of the human, the prospects of future risks and the imperative to further research in regenerative medicine.

Figure 24: Sanctity of human life versus utilitarian positions

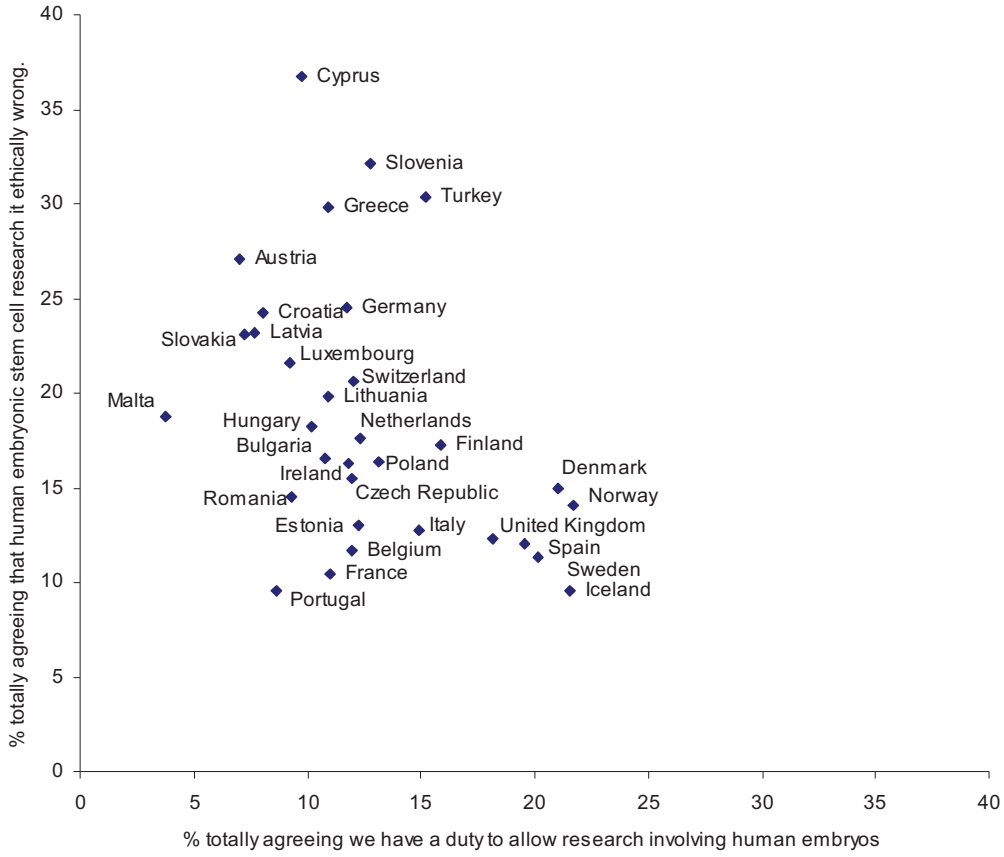


Figure 24 maps the percentages within each country, of those believe we have a duty to allow research that can bring benefits even if human embryos are used (indicative of a utilitarian principle) against those who would like to see a ban posed on human embryonic stem cell research (indicative of a sanctity principle). It clearly shows that the fault lines in European public views cannot be construed as a simple divide between Roman Catholic and Protestant countries. In a group of mainly Scandinavian countries (Iceland, Sweden, Norway, Denmark), UK and Spain, we find support for utilitarian ethics and little support for a ban. While the other countries are low on the utilitarian factor, they differ according their support for a ban on the use of human embryos for research. In Portugal, France, Belgium, Italy and Estonia, there is as little support for a ban as in the Scandinavian countries and the UK. At the other extreme countries that tend towards favouring a ban are Cyprus, Slovenia, Turkey, Austria, Germany and Croatia.

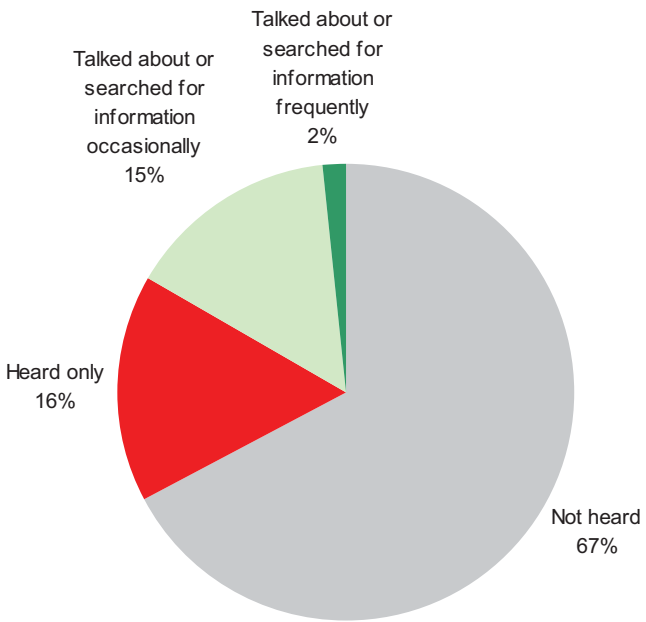
5. Biobanks

Biobanks collect data on biological and environmental/lifestyle characteristics of individuals. They do so on a very large scale, with the aim of teasing apart genetic and lifestyle factors in the risk of diseases and the maintenance of health. Scientists hope to develop new methods for better understanding many common diseases and arrive at new effective treatments. The pharmaceutical industry is interested and likely to be a major investor in the development and maintenance of biobanks. According to the scientific journal *Nature* (24 September 2009) there are more than 400 biobanks in Europe. The EU is funding biobank research as well as the development of an integrated system for sharing the vast amounts of data they contain. Collecting biological information from people with illnesses has a long history, but collecting data from healthy people is relatively novel and key to biobanks. The issues of altruistic duty to contribute to research, privacy of very sensitive personal data on health, life habits and genetic profiles, commercialisation of the results from research on biobank data and governance issues have been widely debated (Elger et al. 2008, Gottweis and Petersen 2008).

Biobanks were described to respondents in the following way:

> *'And now thinking about biobanks for biomedical research: These are collections of biological materials (such as blood and/or tissues) and personal data (medical records, lifestyle data) from large numbers of people. Using biobanks, researchers will try to identify the genetic and environmental factors in diseases, to improve prevention, diagnosis and treatment. Participation in biobanks is voluntary. Critics, however, raise questions about privacy, confidentiality and commercial interests regarding the biobanks and about who is going to regulate them.'*

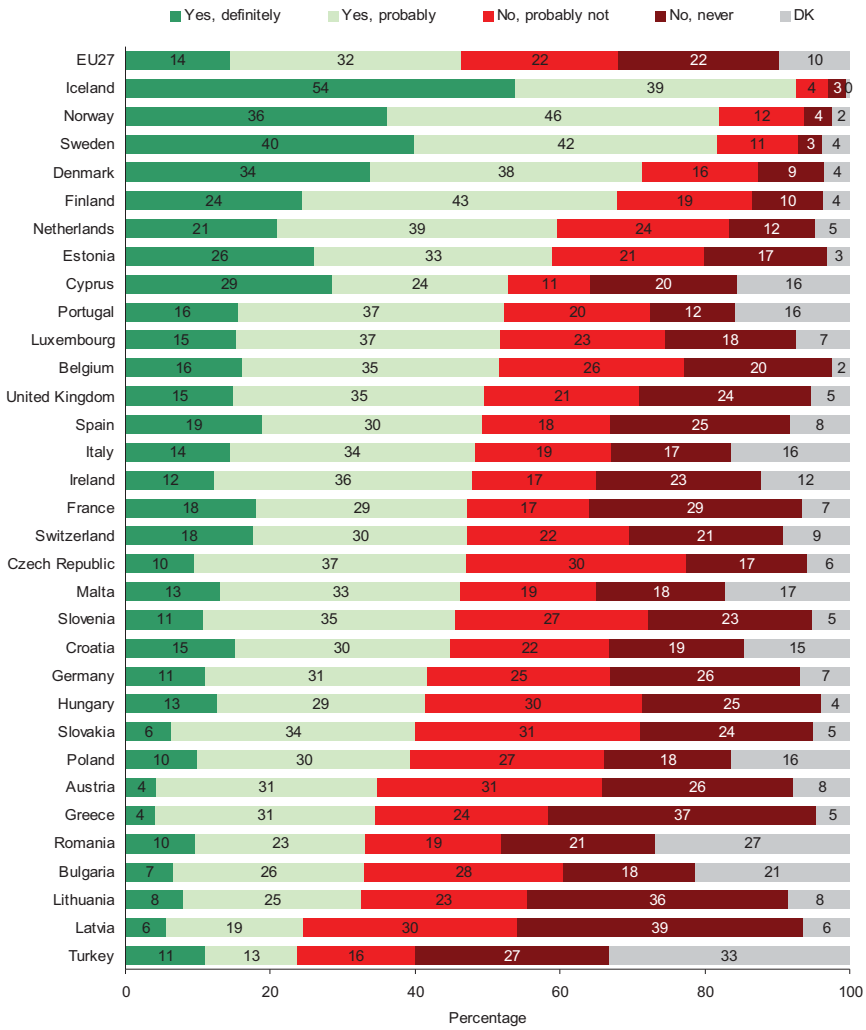
Figure 25: Awareness of biobanks, EU27



As yet, it appears that many European citizens are unaware of biobanks. Two thirds of respondents had not heard about biobanks before they were interviewed, and only 17 per cent can be described as having actively engaged with the topic, through discussions or seeking out information about them.

Nevertheless, how do people feel about participating in biobanks? Figure 26 shows a range of support – from 92 per cent Icelanders (where a highly publicised initiative more than a decade ago resulted in the setting up of a large commercial biobank) say they definitely or probably would be willing to provide information to a biobank, to 24 per cent Latvians expressing the same view. Turkish respondents as a group return similar expressed levels of enthusiasm, or lack of it, for biobanks, but with a great deal more ambivalence too – 33 per cent Turkish respondents say 'I don't know' to this question.

Figure 26: Would you be willing to provide information about yourself to a biobank?

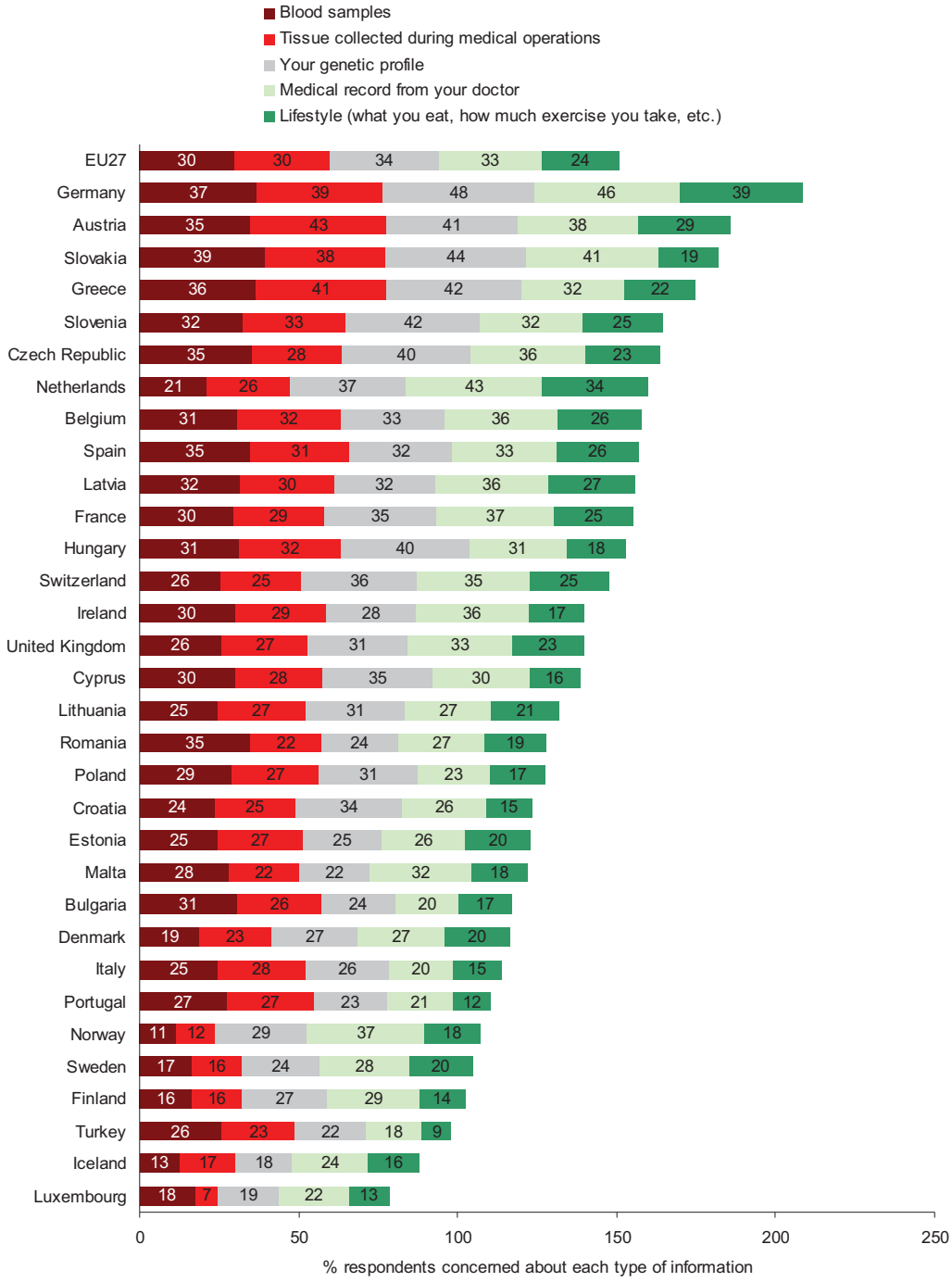


What kinds of deposits might be made to a biobank? Do certain types of information invoke more anxiety amongst the public than other types? On the whole, the data suggest that people do not seem to be markedly more worried about some than other types of information we asked about. At the EU-level (i.e. pooling all the data), people seem less concerned about giving information about their lifestyle (e.g. diet, exercise habits etc.) to biobanks. In half of the countries in the survey, fewer than 20 per cent respondents mention being concerned about this. By contrast, in only two countries do fewer than 20 per cent respondents mention being concerned about giving their genetic profile to a biobank.

Regarding the relative distribution of concerns within countries, some more subtle differences emerge. The primary concern about genetic profiles in most countries tends to be followed closely by the relative levels of concern about giving medical records from one's doctor. This is notably the case for a collection of countries in the rather supportive Scandinavian area, and also in Luxembourg. These are countries where biobanks are well established, and where concern about giving blood or tissue samples to biobanks is low.

Generally, indeed, people tend to mention pairs of concerns together: for example, those who say they would be concerned about giving blood samples to a biobank are more likely to say they are also concerned about giving tissue samples than they are to be concerned about any other type of information; those who are concerned about giving lifestyle information are more likely to also be worried about giving medical records than anything else. So we have concerns based around physiological samples on the one hand, and around personal descriptive information on the other. Genetic profiles appear to span both types of information, and there does not seem to be a strong connection between concern about particular types of information and levels of enthusiasm about participating in biobanks.

Figure 27: Levels of concern about giving different types of information to a biobank



Whether those conducting research on data in biobanks have obligations to the donors has been explored in the ethics literature. Some argue in favour of a version of informed consent while others argue that on pragmatic grounds this is simply not feasible. Salvaterra and colleagues note that models of consent differ widely and that the regulations covering biobank research are 'characterised by a maze of laws, policies and ethical recommendations' (Salvaterra et al. 2008: 307). What do Europeans think?

In the survey respondents were asked

> *'In a hospital doctors ask the patient to sign a form giving permission to carry out an operation – this is called 'informed consent' and it is also required of medical researchers who do research involving members of the public. When a scientist does research on data in a biobank, what do you think about the need for this kind of permission? Researchers should…'*

- *Not need to ask for permission* (unrestricted consent)
- *Ask for permission only once* (broad consent)
- *Ask for permission for every new piece of research* (specific consent)
- *Don't know*

Figure 28 shows that 67 per cent of people in EU27 wish for a strict interpretation of informed consent – permission being required for every piece of research. The figure also shows that there is a comfortable majority (55 per cent plus) in all the countries covered by the Eurobarometer, with the exception of Denmark. Asking for permission 'only once' is the preference of 18 per cent of EU27 and a mere 6 per cent say permission is not needed. It is notable that countries such as Iceland, Sweden and the Netherlands, all with long established biobanks, have relatively high percentages of people saying permission is needed once only – up to around 1 in 3. Yet this is still a minority response.

These findings will represent a significant concern for the proponents of biobanks, whether national governments, research institutions or private companies. Of course, in the survey situation respondents do not have the opportunity to deliberate on their responses, the ethics of informed consent are complex, and in such a context some people may opt for a precautionary response. Weighing up the prospective collective benefits against the interests of the individual donor is not a simple matter. At minimum, the findings suggest that at first sight, informed consent, as in hospital operations, is the legitimate procedure, in the sense of familiarity from custom and practice. The promoters of biobanks cannot take the public for granted, and will need to cultivate public confidence.

Figure 28: Form of consent for biobank research

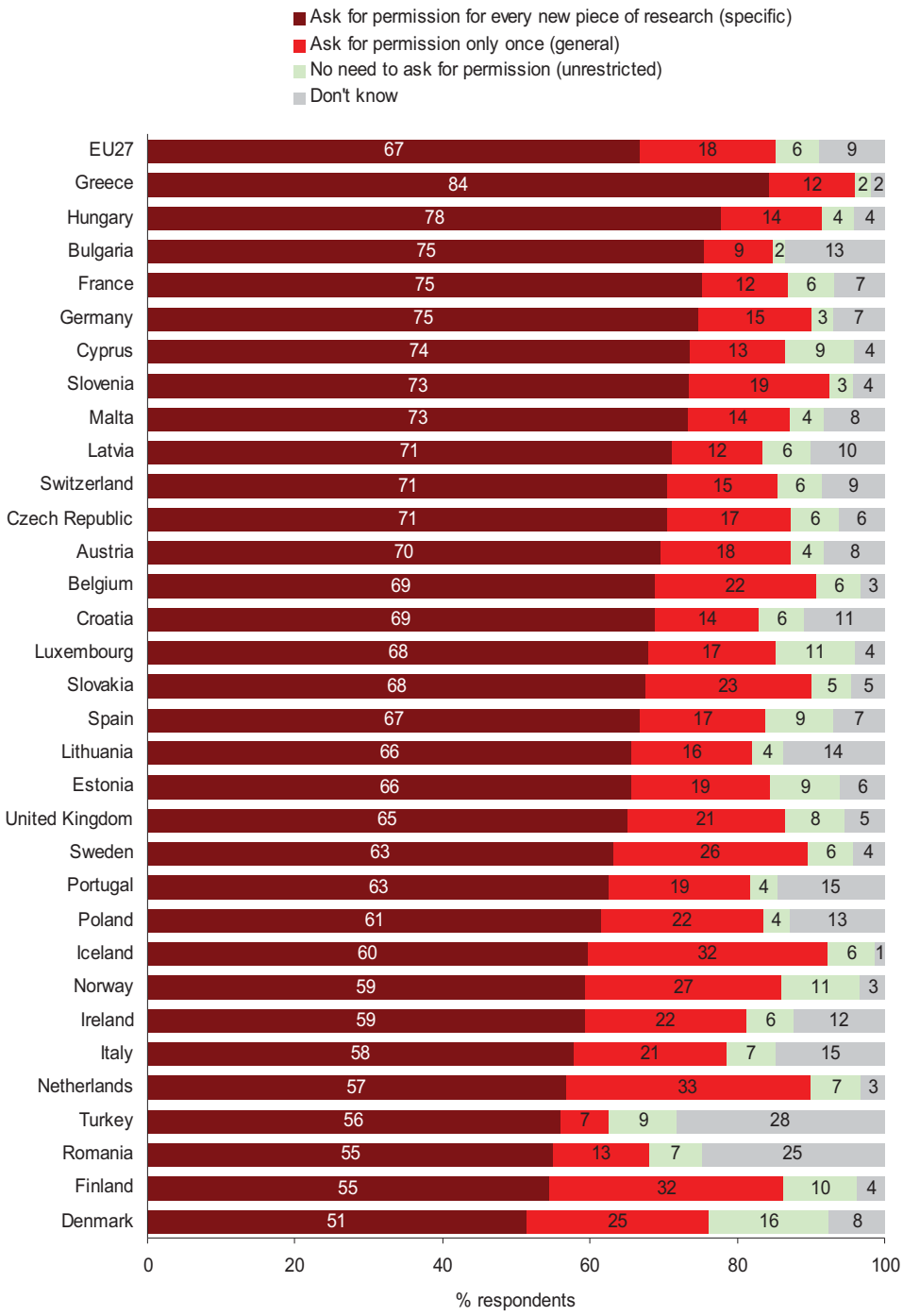
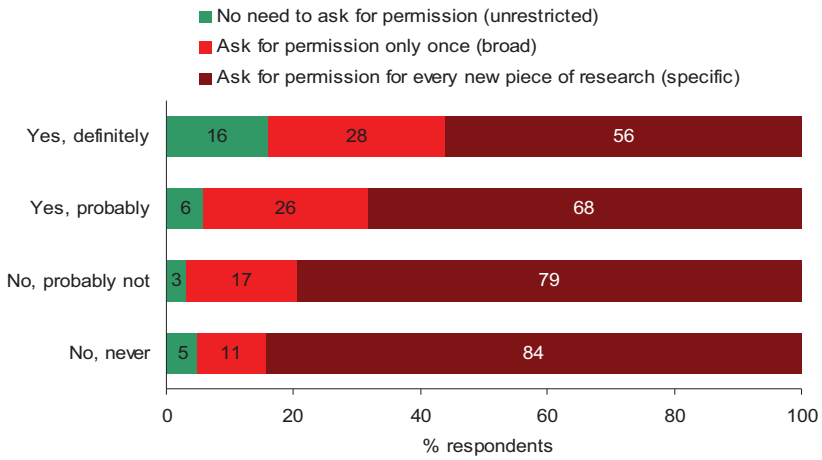


Figure 29: Probability of participation and preferred form of consent (excluding DKs)



But, for the proponents of biobanks there are some grounds for optimism. Figure 29 provides a cross-tabulation of agreeing to participate in a biobank with the preferred form of consent. The figure shows that those who say they will definitely participate in a biobank are much more likely to say researchers don't need to ask for permission (16 per cent) or permission granted once only (28 per cent). With 44 per cent of Europeans taking a relaxed view on the issue of consent the pool of potential volunteers is around 150 million (taking account of the 10 per cent 'don't know' responses).

Who should be responsible for protecting the public interest when it comes to biobanks? Respondents were asked who, from a list, they would choose first and second to protect the public interest. The majority of Europeans would entrust this responsibility to medical doctors and researchers first. But there are some patterns in responses which vary interestingly between countries. First of all, certain pairs of responses are more highly correlated than others – that is, people tend to choose types of actors in clusters. Those who choose 'doctors' are more likely to also choose 'researchers' than to choose 'national governments'. Those who choose 'national governments' are more likely to also choose 'international organisations' than to choose 'researchers'. So we can see a difference in emphasis, between:

- self-regulation (medical doctors; researchers; public institutions such as universities, hospitals); and
- external regulation (ethics committees; national governments; international organisations such as the European Union or World Health Organisation; national data protection authorities)

Figure 30 plots for each country the percentage of people who select one or more of the self-regulation agents, against the percentage who select one or more of the external regulation agents. The pattern of points in the scatterplot – countries lie very roughly on a line from top left to bottom right – illustrates

these clusterings of concerns. In some countries, such as Iceland and the Netherlands, respondents tend to choose external regulation more often than self-regulation. In other countries, such as Greece and Slovakia, respondents tend to choose self-regulation more often than external regulation. Broadly speaking, respondents in those countries which show higher levels of support for biobanks tend to favour external regulation more than self-regulation. In those countries where biobanks are unfamiliar, specialists in the substance of biobanks tend to be more popular as guardians of the public interest. The differing levels of support for external regulation may reflect broader issues in national politics – for example, general trust in government.

Figure 30: External regulation versus self-regulation of biobanks

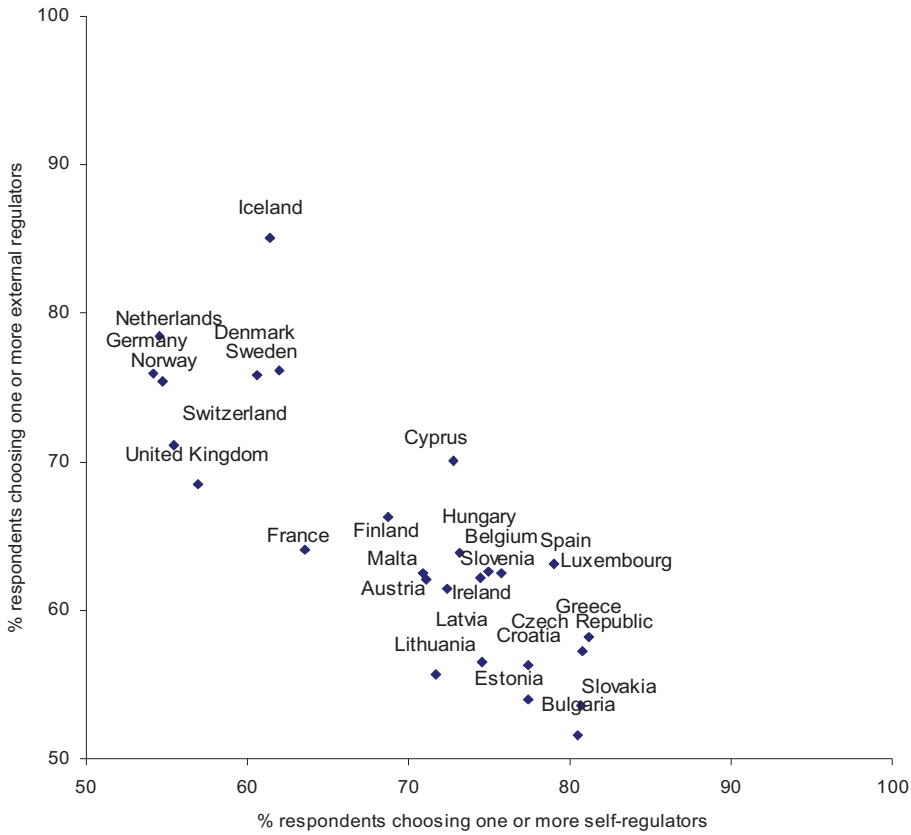
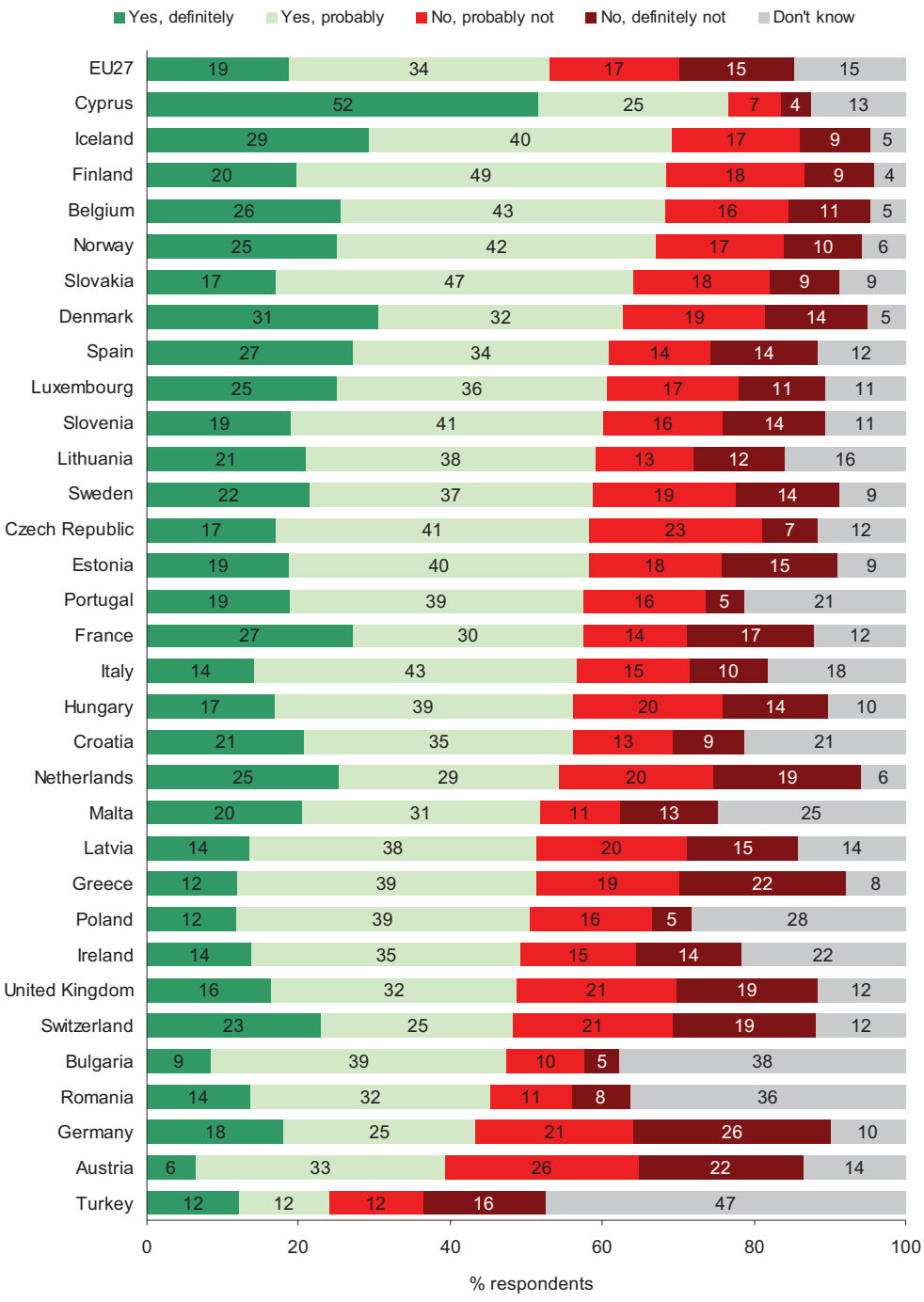


Figure 31 shows the levels of support for sharing personal and biological materials amongst biobanks in different European countries. There is almost no association between support for international integration of biobanks and the agents that should protect the public interest; those who are in favour of international integration are marginally more likely (than those against) to choose international bodies like the EU as the primary guardians, but really only marginally. Levels of support for the sharing and exchange of biobank data between EU Member States broadly echoes levels of support for biobanks per se.

Figure 31: Support for sharing and exchange of personal data and biological materials



6. Governance and trust

This chapter provides an overview of how European citizens think about the governance and regulation of science and technology, as well as how trustworthy they think the key actors involved in the field of biotechnology are.

Principles of governance

Given that time and knowledge are scarce, citizens are open to the idea that sometimes the responsibility of developing public policy should be solely in the hands of the experts, the ones who are deemed to 'know best'. This cannot be generalised though; some issues are deemed too sensitive to be left solely in the hands of experts. To what degree, then, do European publics feel they ought actively to be involved in such decisions? And to what degree do they believe that they should defer to the judgements of experts?

In the survey, respondents were asked two forced-choice questions. First, should decision-making be left primarily to the experts or based mainly on the views of the public? And second, should decisions be made largely on evidence related to the risks and benefits or based on moral and ethical considerations?

In the survey a split ballot was used. Half the respondents in each country answered the questions in the context of synthetic biology, while the other half answered the questions in the context of animal cloning for food products. Both of these topics had been the subject of prior questions in the survey.

The pairs of questions forced respondents to make a choice between the options offered; there was no scope for saying 'I would like to see scientific assessment informed by ethical and moral considerations', or 'I would prefer to have experts taking note of the public's views'. The intention of the question was to push respondents. When it comes to the crunch, who do Europeans want to make decisions and what sort of evidence should be privileged in the decision-making process?

The responses to the questions allow us to divide the public into four 'types' reflecting different principles of governance (Gaskell et al., 2005). Opting for decisions based on expert advice rather than the views of the public, and on the grounds of scientific evidence rather than moral and ethical considerations is labelled the principle of scientific delegation. An institutional equivalent would be, for example, an expert commission on risk assessment. By contrast, those who want decisions to be based on scientific evidence and to reflect the views of average citizens are opting for the principle of scientific deliberation. Institutionally, this could be reflected in a consensus conference, where lay people discuss aspects of an issue with the help of specialists' expertise. By the same token, those who would prefer decisions to be based primarily on the moral and ethical issues involved (rather than scientific evidence), and on the advice of experts rather than the general public, we refer to as adopting a principle of moral delegation. The respective institution would be an ethics committee. And those who prioritise moral and ethical over scientific considerations, whilst favouring the views of the general public over those of the experts, we

label as adhering to a principle of moral deliberation. Such a view could best be accommodated with the help of instruments of public deliberation such as a peoples' initiative.

Underlying these four principles of governance are beliefs about social progress and how science and technology should be organised towards that goal. Can experts and sound science remain the basis for deciding the direction of progress? Is science and technology developing along the right moral and ethical lines? Can experts be trusted to take account of the public interest? (Gaskell et al. 1998).

Tables 5 and 6 and present the results for synthetic biology and animal cloning for food products, respectively. For synthetic biology (Figure 5), a small majority (52 per cent) of European citizens believe that the technology should be governed on the basis of scientific delegation where experts, not the public decide, and where evidence relating to risks and benefits, not moral concerns, are the key considerations. However, nearly a quarter of Europeans take the opposite view: it is the public, not experts, and moral concerns, not risks and benefits, that should dictate the principles of governance for such technologies (the principle of 'moral deliberation').

Tables 5 and 6 tell very similar stories for synthetic biology and animal cloning in relation to the principles of moral delegation (around 15 per cent) and scientific deliberation (around 10 per cent). But there is an interesting contrast between synthetic biology and animal cloning in levels of support for scientific delegation and moral deliberation. For animal cloning (compared to synthetic biology) some 10 per cent fewer opt for scientific deliberation and 9 per cent more opt for moral deliberation. It seems that moral and ethical issues are more salient for animal cloning for food products than for synthetic biology: altogether 38 per cent of respondents choose a position prioritising moral and ethical issues for synthetic biology, with 49 per cent doing the same for animal cloning for food. To put this another way, the European public is evenly split between those viewing animal cloning for food as a moral issue and those viewing it as a scientific issue.

Table 5: Segmentation of the European public on principles of governance for synthetic biology, EU27 (DKs excluded)

	Based mainly on the advice of experts	Based mainly on the general public's view
Based primarily on scientific evidence about the risks and benefits involved	Scientific delegation 52%	Scientific deliberation 10%
Based primarily on the moral and ethical issues involved	Moral delegation 15%	Moral deliberation 23%

Table 6: Segmentation of the European public on principles of governance for animal cloning, EU27 (DKs excluded)

	Based mainly on the advice of experts	Based mainly on the general public's view
Based primarily on scientific evidence about the risks and benefits involved	Scientific delegation 42%	Scientific deliberation 9%
Based primarily on the moral and ethical issues involved	Moral delegation 17%	Moral deliberation 32%

Figures 32 and 33 stratify the principles of governance results by country. As can be seen 11 of the countries have a comfortable majority (55 per cent or more) in favour of scientific delegation for synthetic biology while only 2 have a comfortable majority in favour of scientific delegation for animal cloning and food.

A comparison of the percentages of respondents in each country opting for moral deliberation (public ethics) over moral delegation (institutionalised ethics) might lead to the tentative conclusion that ethics committees have yet to gain widespread public confidence. To achieve greater public confidence, ethics committees may need to, and be seen to, take more account of the public voice.

On the governance of animal cloning, in all countries (with the exception of Norway) a similar or larger percentage opt for moral deliberation than for moral delegation. For synthetic biology seven mainly north-western countries have a higher percentage opting for moral delegation – Belgium, Finland, Sweden, Norway, Netherlands, Iceland and Malta. It would appear that apart from North Western Europe, moral delegation to ethics committees is yet to emerge as an accepted intermediary between the wider public and the policy process.

On the other hand, a variety of technologically highly developed countries seem to be at odds with the default solution to dealing with scientific uncertainty. Germany, Austria, Denmark and Switzerland show less than 30% support for scientific delegation. Apparently, sound science is not enough especially when it comes to potentially morally contentious issues such as animal cloning. In contrast, moral deliberation enjoys high esteem, it seems – in Austria, more than half prefer this governance principle.

Figure 24: Principles of governance for synthetic biology (DKs excluded)

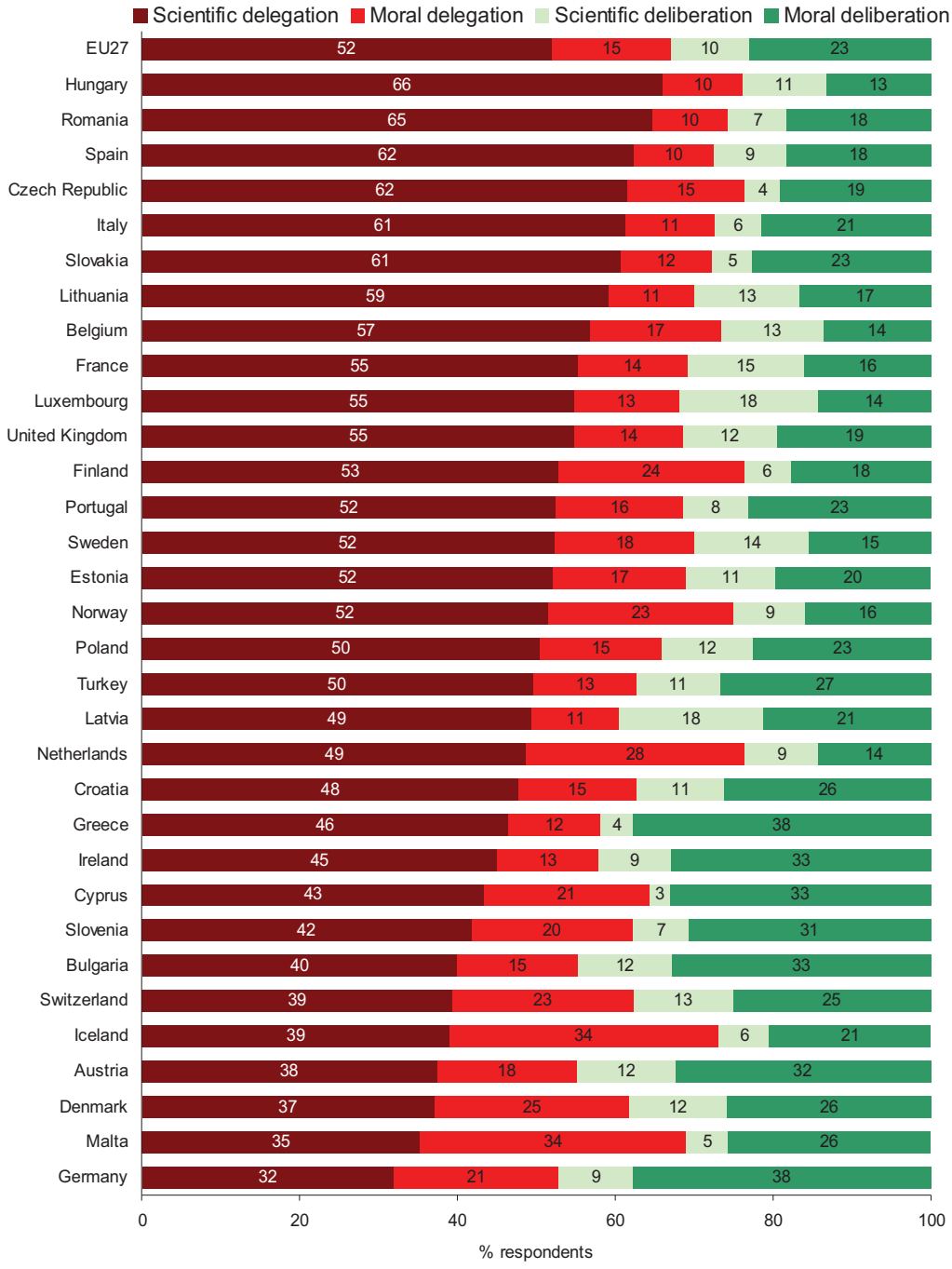
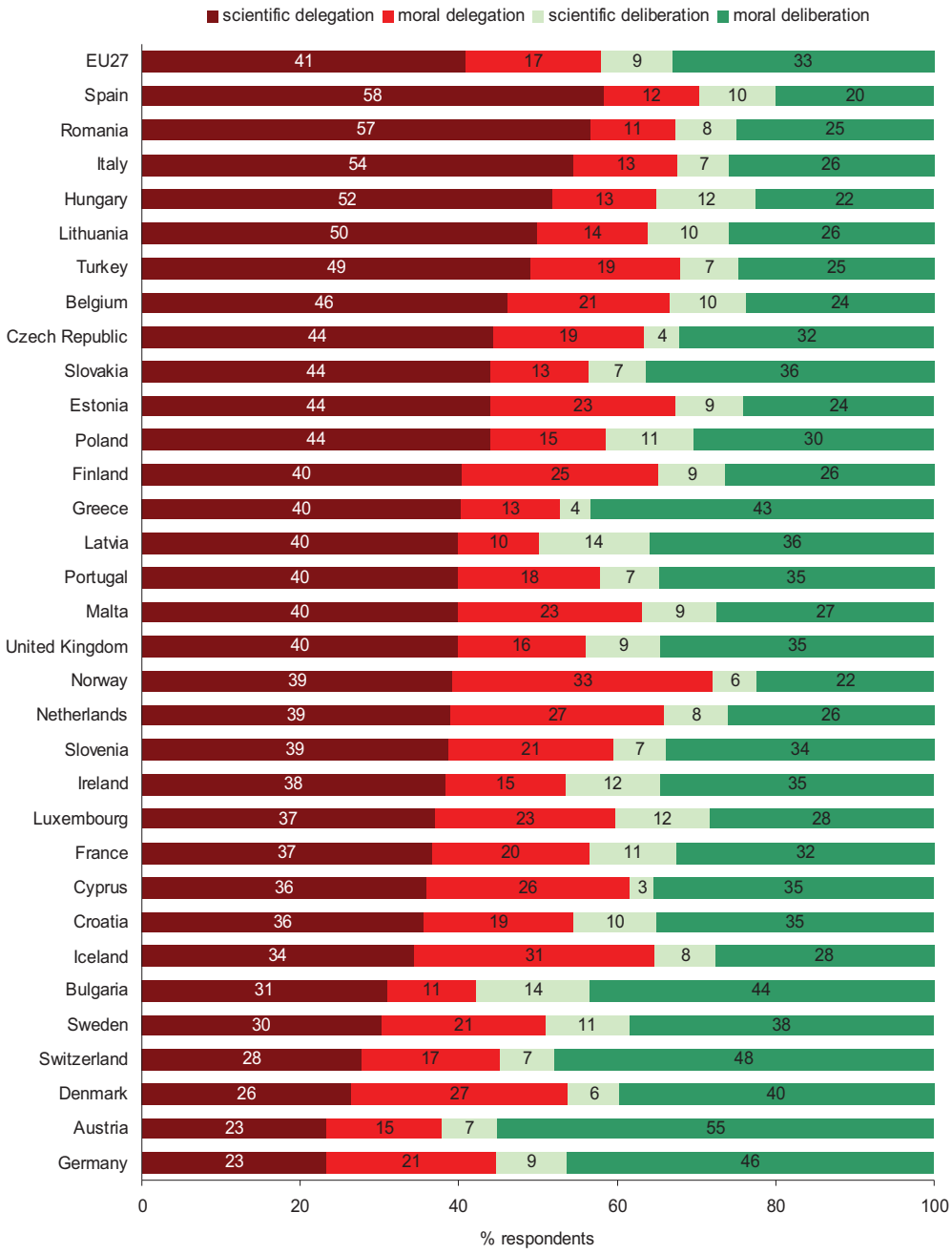


Figure 25: Principles of governance for animal cloning (DKs excluded)



It is also interesting to see whether these different preferences for the principles of governance are related to support for technology in general as well as to specific technologies, namely GM food and Nanotechnology. Tables 7 and 8 present the results. Table 7 suggests that support for technology in general is lower as publics move away from scientific delegation and closer towards moral deliberation when thinking about synthetic biology; the same is true for GM foods (a decline from 31 per cent to 17 per cent). Table 8, however, demonstrates that no clear linear relationship exists between the principles

of governance for animal cloning and support for technologies in general, although those who take a moral deliberation position are evidently more sceptical of technology in general compared to others. Nonetheless, a clear linear relationship does exist in relation to support for Nanotechnology; scientific delegators are significantly more supportive of this technology than moral deliberators (70 per cent compared to 50 per cent).

Table 7: Principles of governance for synthetic biology, technological optimism, and support for GM food, EU27 (DKs excluded)

	Mean score on technological optimism (additive scale 0-8, where 8 equals high optimism)	% who encourage GM food
Scientific delegation	5.5	31
Scientific deliberation	5.0	30
Moral delegation	4.8	22
Moral deliberation	4.3	17

Table 8: Principles of governance for animal cloning, technological optimism, and support for nanotechnology, EU27 (DKs excluded)

	Mean score on technological optimism (additive scale 0-8, where 8 equals high optimism)	% who encourage nanotechnology
Scientific delegation	5.4	70
Scientific deliberation	4.8	61
Moral delegation	5.1	60
Moral deliberation	4.4	50

Taken together, it appears as if scientific delegation and moral deliberation mark two extremes, with scientific deliberation and moral delegation somewhere in between, when measured against support for a potentially sensitive technology. In other words, scientific delegation can be expected to deliver accepted results in those cases only where a technology is not considered sensitive. More generally, the call for moral deliberation may be expected in those cases where a technology is particularly sensitive with respect to public sentiments.

Trust in key actors

Trust is a key attribute of a functional society. Without a degree of trust and confidence in many and varied people in charge of transport, education, food production etc, life would be more or less impossible. As a part of the division of labour, trust allows us to delegate responsibility for our safety and security to others. In an ideal world, trust eliminates concerns about risk. However, trust may be challenged when the 'other' is thought to be insufficiently informed, incompetent, or acting purely on the basis of self interest.

Trust is part of the equation of scientific and technological innovation, where risk and uncertainty are often unavoidable. When failures occur people may wonder are these actors competent? Are the sources of information credible? Are they motivated by sectional interests and do they have the public good in mind?

During the mid-1990s, in the heydays of the controversy over various food issues such as BSE, hormone beef or GM soya, the public was said to have lost trust in key actors for example scientists involved in risk assessment and regulators involved in risk management. The intricate relations between trust in responsible actors and political decision-making has made a severe impact on technology policy both at the national and the EU level. No wonder that decision-makers are eager to secure a sufficient level of trust in institutions and responsible persons. To this end, various measures have been implemented aiming at increasing transparency and accountability in the pursuit of good governance and effective policy making.

In the survey, respondents were asked:

> *'Now I'm going to ask you about some people and groups involved in the various applications of modern biotechnology and genetic engineering. Do you suppose they are doing a good job for society or not doing a good job for society?'*

Saying 'doing a good job for society' is likely to express a view that the actor is both competent and behaves in a socially responsible way. Thus, 'doing a good job' constitutes a proxy measure of trust and confidence.

Table 9 is in two parts. Shown in the first two columns is the percentage of all Europeans saying 'good job' and 'not doing a good job' for each of the nine actors presented. 'Don't know' responses are not included in the table.

Looking at the percentages for 2010 (data columns 1 and 2), 70 to 80 per cent of Europeans have confidence in doctors, university scientists, and consumer organisations. Between 60 and 69 per cent have confidence in environmental groups and in newspapers and magazines. All the other actors – the EU, industry, government and shops – attract the confidence of between 54 per cent and 59 per cent of Europeans.

In the final four columns the confidence surplus or deficit is shown for 1999, 2002, 2005 and 2010. This is the difference between the percentages saying 'doing a good job' and 'not doing a good job'; a positive score denotes a trust surplus, while a negative score a trust deficit. For this calculation, the 'don't know' responses are excluded. The index thus provides, for those Europeans who expressed an opinion, a relative ranking of levels of confidence for comparisons across actors and across time. The trust surplus/deficit time series index, from 1999 to 2010, shows that, broadly speaking, doctors, university scientists and consumer organisations retain a high trust surplus and newspapers and magazines a moderate trust surplus. Shops show a dip in trust in 2002 and again in 2005. In 2010 they return to a surplus of 46 – the level in 1999. Respondents' national government, environmental groups, the European Union and industry all show sizeable increases in trust surplus since 2005 and generally increases over the last decade. The gain in trust in industry remains most remarkable with a 62 point rise over the period.

Table 9: Trust in key actors and trends from 1999

	% in 2010 (Base: DKs included)		Trust surplus/deficit (Base: DKs excluded)			
	Doing a good job	**Not doing a good job**	**1999**	**2002**	**2005**	**2010**
Medical doctors keeping an eye on the health implications of biotechnology	78	8	72	80	79	82
University scientists doing research in biotechnology	74	8	-	73	78	80
Consumer organisations checking products of biotechnology	70	11	72	73	76	74
Newspapers and magazines reporting on biotechnology	62	20	53	57	49	50
The European Union making laws on biotechnology for all European Union countries	58	16	-	48	42	56
Industry developing new products with biotechnology	56	19	-12	20	41	50
Environmental groups campaigning against biotechnology	63	15	54	56	35	62
Our government in making regulations on biotechnology	54	20	22	27	33	46
Shops making sure our food is safe	59	22	46	39	32	46

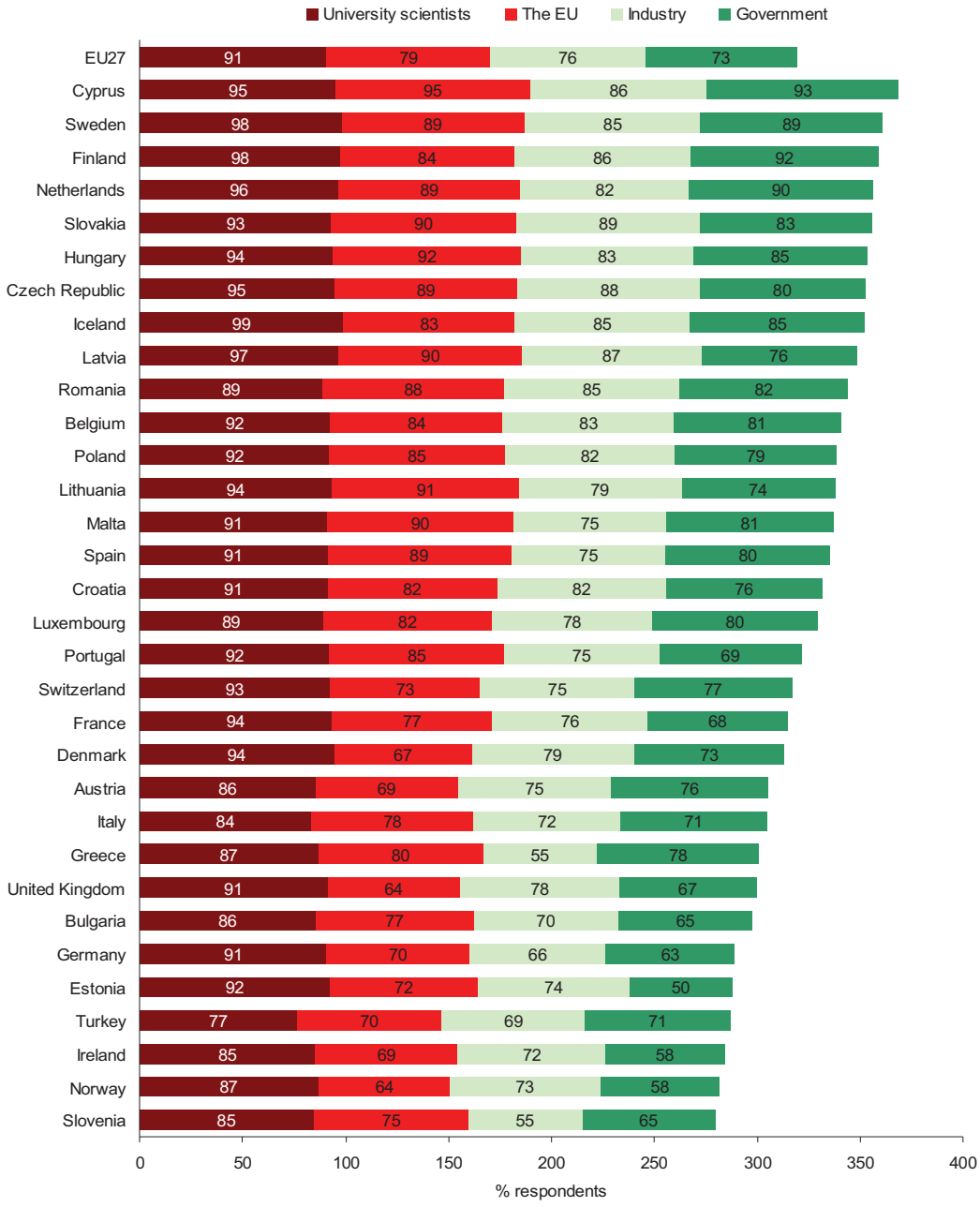
Table 10: Trend in trust surplus/deficit for the biotechnology industry (DKs excluded)

Percentage	1999	2002	2005	2010
Finland	24	47	68	72
Sweden	-46	-10	11	70
Belgium	9	22	61	66
Netherlands	31	35	62	64
Denmark	-20	15	44	57
Luxembourg	-10	18	56	56
United Kingdom	-16	29	58	55
France	-35	15	37	52
Spain	2	32	67	50
Austria	-9	47	45	50
Portugal	31	33	41	50
Ireland	-30	17	46	44
Italy	-32	-3	37	44
Germany	3	20	20	32
Greece	-38	23	31	10
Slovakia			68	78
Czech Republic			77	76
Latvia			71	74
Cyprus			82	73
Hungary			51	66
Poland			54	65
Lithuania			62	58
Malta			75	54
Estonia			61	46
Slovenia			40	10
Iceland				74
Romania				70
Croatia				64
Lithuania				58
Switzerland				50
Norway				46
Bulgaria				40
Turkey				38

Table 10 shows how the trust surplus/deficit for industry has changed across the countries with time series data where it is available. Substantial increases in the trust surplus are evident in Sweden, Denmark, UK, France, Austria, Italy and Germany. While there are recent declines in Spain, Greece,

Slovenia, Malta and Estonia, the broader picture is of Europeans generally much more likely to think industry is doing a good rather than a bad job.

Figure 26: Public confidence in the 'biotechnology system' (excluding DKs)



Finally in this section on trust, Figure 26 concerns the extent of public confidence in what might be called the 'biotechnology system'. This comprises the actors that create and regulate biotechnology – research scientists, industry and national and European regulators (Torgersen et al. 2002).

Notwithstanding the continuing controversy over GM food and crops and respondents concerns about various technologies that have featured in this Eurobarometer survey, there is a robust and positive perception of the biotechnology system. It seems fair to conclude that Europeans have moved on from the crisis of confidence of the mid to late 1990s. It is also notable that both National Governments and the EU carry almost equivalent trust surpluses in the majority of countries. Perhaps, the idea of national regulation within a framework of European laws is accepted amongst the publics of the European Member States.

7. Familiarity and engagement with technologies

Public engagement with science and technology has been a priority area within Directorate General for Research in the European Commission for fifteen years. Engagement with issues technological, however, may be a double-edged sword.

On the one hand, there is a long-standing belief that familiarity with a technology increases its positive evaluation by the public. Familiarity not only refers to the active use of a technology and its products but also to a basic knowledge of the principles and methods involved. In other words, promoters claim that the public not only needs to be passively confronted with the technology at stake: rather, they have to actively engage in searching for information and dealing with the issue.

On the other hand, there is a school of thought that see the public in the driving seat when it comes to decision-making over the implementation of a (possibly risky) technology (Sclove 1995). Since the public will be affected, the public should decide – so the normative argument proposes. In order to be able to decide, the public needs to engage in the issue. Views on the technology may change – not necessarily in favour of the technology – according to levels of engagement and as people acquire knowledge about technical risks and benefits, and also about matters of public interest and distributional fairness.

Along the history of public engagement in Europe, starting with the Danish consensus conferences in the 1980s, varieties of this 'Danish model' have emerged in many Member States. Consensus conferences have been introduced with different aims in mind, ranging from lay participation in real decision-making to mere public relation exercises. These aims reflect diverse views on the role of the public in relation to science and technology policy running from the extremes of 'only the elite can decide such matters' to policy making by referenda or popular initiatives. Underlying these extreme views, and all those positions in between, are a number of normative and pragmatic considerations.

In the Eurobarometer survey we are interested in finding out how engagement in science and technology, by the public themselves, relates to their views. Do those who are more active in attending and/or finding out about issues of science and technology hold different views from those for whom such issues are of little interest?

Familiarity and engagement with a range of technologies

Figure 35 below is an illustration of public familiarity with a range of technologies within the life sciences. It gives the percentages of respondents who report having heard of GM foods, animal cloning for food production, nanotechnology, biobanks, and synthetic biology, prior to the interview. The top bar illustrates the European weighted average (EU27), followed by a separate bar for each of the 32 countries included in the survey. The countries have been ordered according to aggregate familiarity across the five technologies, i.e. by adding together the percentages who report having heard of each of the five technologies in question.

In Europe as a whole, there is widespread familiarity with both GM food and animal cloning in food production. After more than a decade of controversy related to GM food, awareness is generally high. Three out of four people have heard about animal cloning in food production. Since 2005, familiarity has remained constant at about 80 per cent for GM food and about 45 per cent for nanotechnology. About a third of Europeans have heard of biobanks. Among the five different technologies presented below, biobanking is the area where levels of familiarity vary most between countries. For example, In Iceland, 80 per cent of the public have heard of biobanks. In Turkey, Austria, and Portugal, familiarity is less than 20 per cent. Finally, the emerging area of synthetic biology is on average not very well known in Europe. Only 17 per cent of the European population has heard of synthetic biology.

Figure 27: Familiarity with five technologies: percentages of people who have heard of each technology

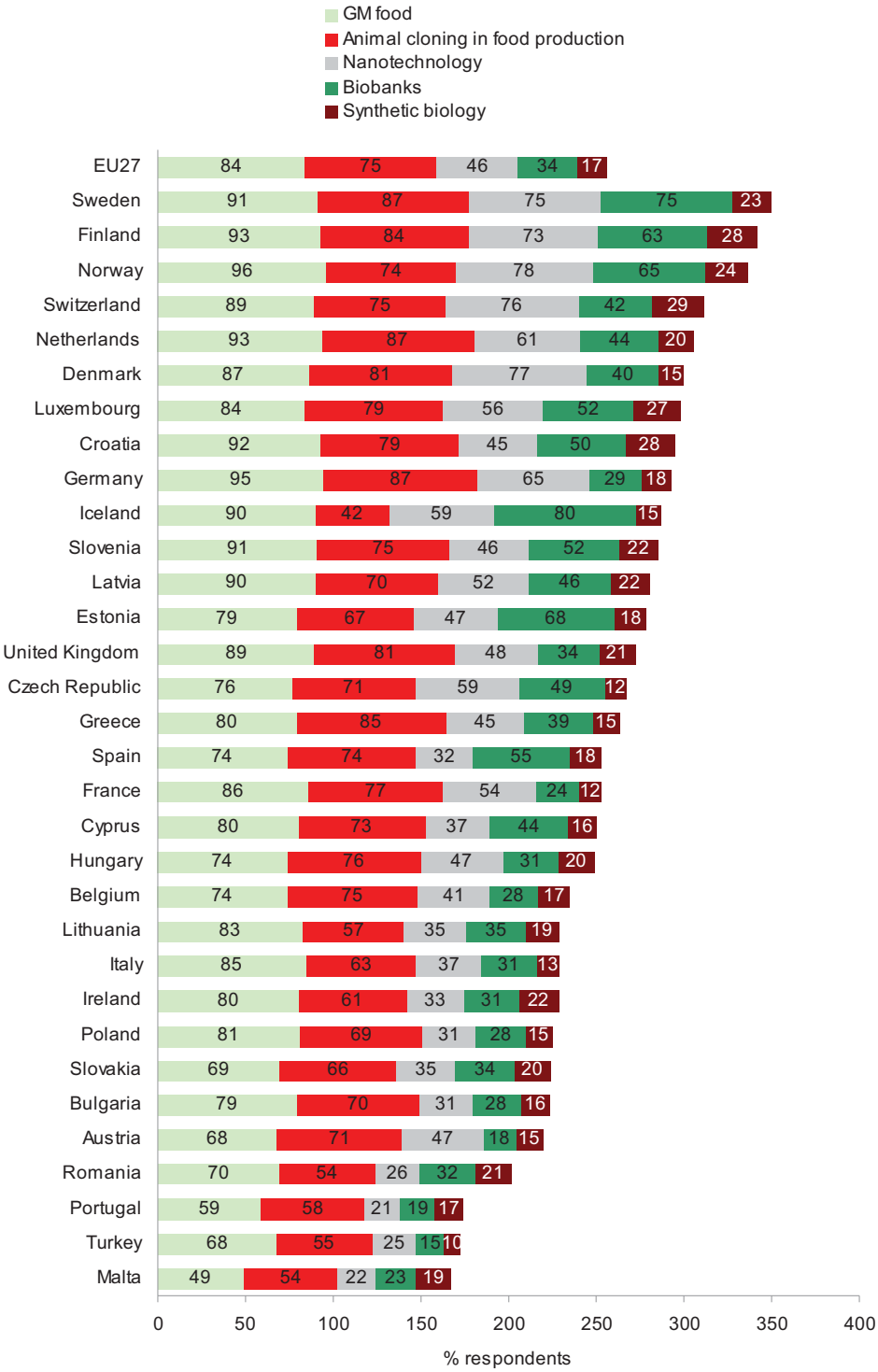
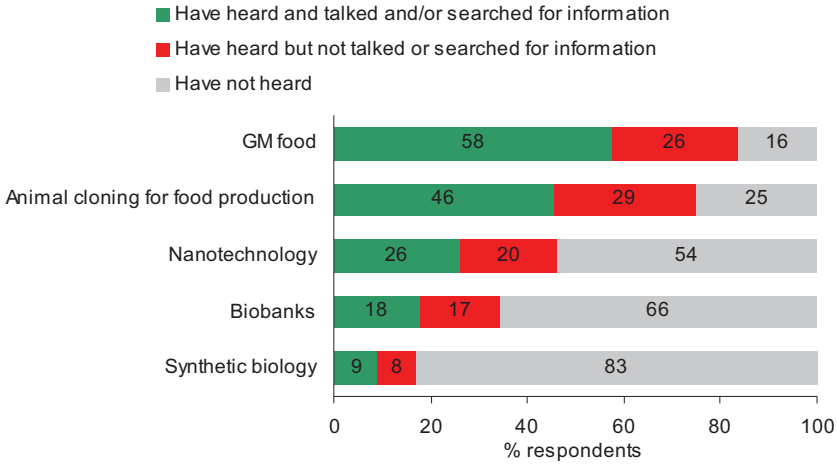


Figure 27 also shows that there are significant differences between countries. There appears to be a cluster of Nordic countries on top, including Sweden, Finland, and Norway, where familiarity is very high across the range of technologies, and also the remaining Nordic countries, Denmark and Iceland, are characterized by relatively high levels of awareness of these technologies. The country comparisons indicate significant differences in familiarity with the five technologies. Least familiarity is found in Malta, Turkey, and Portugal.

In the questionnaire, respondents who confirmed having heard of these technologies were asked two additional, follow-up, questions concerning the extent to which they had also engaged in active discussion or information search on the subject. So, for example, people who reported having heard of GM food, were subsequently asked whether they had 'talked about GM food with anyone before today' or 'searched for information about GM food' either 'frequently', 'occasionally', 'once or twice', or 'never'. In general, and particularly relating to synthetic biology and biobanks, very few people state that they have frequently talked and / or searched for information. Among the five technologies, GM food is the area in which most people have been actively engaged, in terms of talking with other people or searching for information.

Figure 28: Engagement with five technologies, EU27



In Figure 28 above, response categories have been collapsed into three simple categories, indicating the level of public engagement with the five technologies. The three categories include those who have not heard of the technology, those who have passively heard but not actively talked about or search for information, and finally those who have heard and also actively talked and/or searched for information about the technology in question. The figure shows that 58 per cent of Europeans have had some degree of active engagement with GM food prior to the interview, 26 per cent have heard about it without engaging actively in discussion or information search, and the remaining 16 per cent are unfamiliar with GM food. Almost half of the European population has actively engaged with animal cloning, around 25 per cent of Europeans have actively engaged with nanotechnology, whereas only 18

per cent and 9 per cent have talked and/or search for information about biobanks and synthetic biology respectively.

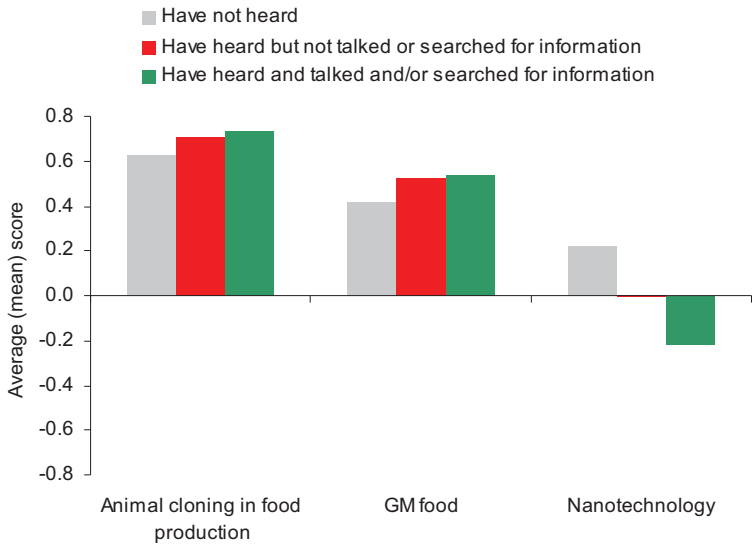
Engagement and affective reactions

In the survey, respondents were asked to what extent they agreed or disagreed with a number of statements concerning animal cloning in food production, GM food, and nanotechnology. For each of these areas in turn, respondents were asked to indicate whether they would 'totally agree', 'tend to agree', 'tend to disagree' or 'totally disagree' that such technological applications are 'fundamentally unnatural' and 'makes you feel uneasy'. The responses to these two statements provide a measure of what could be considered an affective dimension: do these technologies, i.e. animal cloning in food production, GM food, and nanotechnology invoke anxiety or concern? Are Europeans worried about such technological applications?

We might have expected that familiarity and active engagement with these technologies would have a positive impact on the affective dimension, in the sense that those Europeans who had heard, actively discussed and/or searched for information about animal cloning in food production, GM food, and nanotechnology prior to the interview would be least worried about these technologies. In many situations, people tend to be more concerned or worried about the issues that they are least familiar with and least well-informed about. What the survey demonstrates, though, is that the relation between familiarity on the one hand and unease on the other hand is not straightforward, but depends on the particular technology in question.

Figure 29 below gives the average scores on an index of 'worry' related to the three technologies. The index ranges from -1.5 to 1.5. Average scores above 0 indicate, that more people tend to agree that the technologies are 'fundamentally unnatural' and 'makes you feel uneasy' and fewer people tend to disagree with these statements. By comparing the average scores of those who have not heard, those who have heard but not actively talked or searched for information, and those who have actively talked or engaged in information search, we see some striking differences between technologies.

Figure 29: 'Worry' index for three technologies, by level of engagement, EU27



For nanotechnology, higher levels of familiarity and engagement clearly have a soothing effect on Europeans. Among those who have not heard of nanotechnology, the average score on the index is 0.23, which means that in this group most people tend to agree that nanotechnology is fundamentally unnatural and makes them feel uneasy. Among those who have heard of nanotechnology, but not actively talked or searched for information, the average score is -0.01, which means that about an equal amount of people either agree or disagree that nanotechnology is worrying. Finally, the average score among those who have actively talked about nanotechnology or searched for information is -0.22, indicating that in this group most people tend to disagree that nanotechnology is unnatural and 'makes you feel uneasy'. In the case of nanotechnology, then, the differences between these groups demonstrate that higher levels of familiarity and engagement significantly reduce the extent of worrying about nanotechnology.

For GM food and animal cloning in food production, the picture is rather different. First, on average people are more affected by these technologies, and those who agree that animal cloning in food production and GM food are 'fundamentally unnatural' and 'makes you uneasy' outnumber those who disagree, irrespective of the level of familiarity and engagement. Furthermore, the relationship between engagement and concern for these technologies is opposite to nanotechnology. For GM food and animal cloning in food production, people who are most familiar and engaged are also those who worry the most. These biotechnological applications appear to be so sensitive and controversial that higher levels of involvement accelerate concern rather than ease the worry. This could well be part of the explanation for the continued disapproval of GM food among the European public. Rising levels of familiarity over time does not lead to less concerns, in fact the opposite seems to be the case.

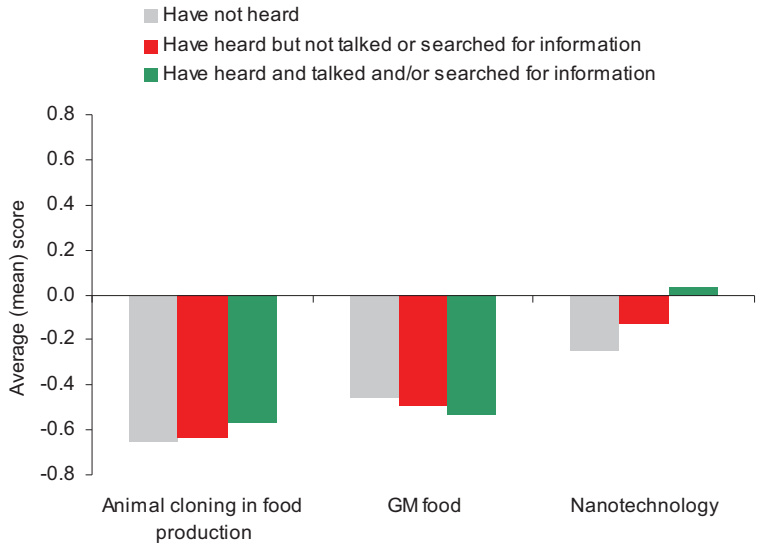
Engagement, risks and benefits

Similarly to the analyses of affective reactions to nanotechnology, GM food and animal cloning in food production, also perceptions of risks and benefits are related to levels of familiarity and engagement.

In the 2010 barometer results, risk or safety has been a recurring and dominant issue in the way that the European public relates to controversial technologies. In the questionnaire, three statements particularly tap into the perceived safety of nanotechnology, GM food, and animal cloning in food production. For each of these areas, respondents were asked to which extent they agree that the technologies are 'safe for future generations', 'safe for your health and your family's health', and 'does no harm to the environment'. Combined, these statements function as an index of 'safety', and equivalent to the index of affect described above, the index for perceived safety ranges from -1.5 to 1.5, with average scores above 0 indicating, that a majority of people agree that the technologies are safe, and scores below 0 indicating that most people disagree that the technologies in question are safe.

Figure 30 shows that Europeans clearly on average tend to disagree that GM food and animal cloning in food production are safe technologies, no matter how familiar they are with them. There are modest differences between people who are unfamiliar and people who are more actively engaged. With regard to animal cloning in food production, the engaged Europeans find this technology slightly safer than people who have not heard of it at all. For GM food the relation is opposite, but also in this case the differences between the active, information-searching segment of the population and those who are unfamiliar with GM food, is modest.

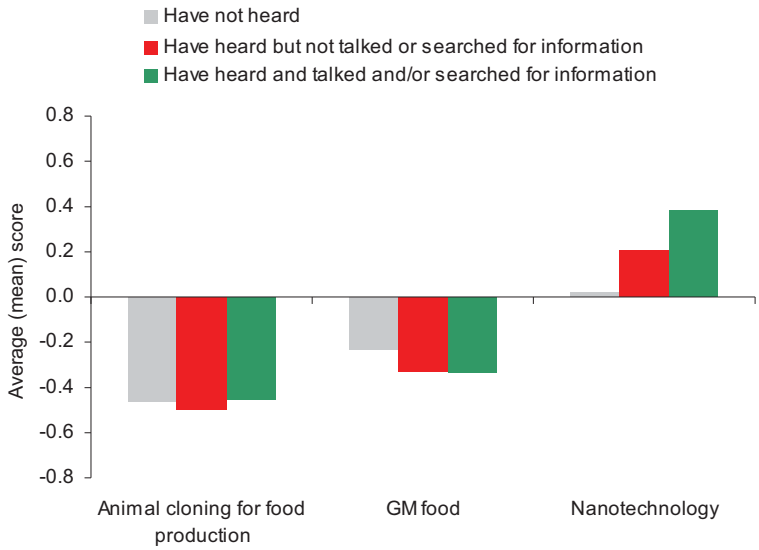
Figure 30: 'Safety' index for three technologies, by level of engagement, EU27



Again, nanotechnology stands somewhat out. In relation to nanotechnology, levels of familiarity and engagement clearly have an impact on perceived safety. Those who had not heard of nanotechnology before the interview are less convinced that nanotechnology is safe, and the majority of people within this group disagrees that nanotechnology is safe for future generations, the environment, and their own and their family's health. People, who have heard, but not actively talked or searched for information about nanotechnology are fairly more likely to agree that nanotechnology is safe, and in the final group of actively engaged respondents, a small majority tend to agree that nanotechnology is safe.

With regard to perceived benefits of nanotechnology, GM food, and animal cloning in food production, these are similarly measured on an index, based on two statements, namely that the technology 'is good for the national economy' and 'is not good for you and your family'. The latter statement is reversed in the overall index, which ranges from -1.5 to 1.5, so that scores above 0 indicate agreement that the technology is beneficial and scores below 0 indicate disagreement.

Figure 31: 'Benefits' index for three technologies, by level of engagement, EU27



Consistent with the previous results, the public assessment of nanotechnology differs from GM foods and animal cloning in food production, and again, the level of engagement plays a significantly more important role for Europeans' perceptions of benefits in the case of nanotechnology. People who have not heard of nanotechnology prior to the interview have an average score of 0.02 on the index, which means that about an equal amount of these people either agree or disagree that nanotechnology is beneficial. As familiarity increases, so do perceived benefits. People who have heard of nanotechnology prior to the interview on average score 0.21 on the index, while those who have actively talked or searched for information have an average score of 0.39, indicating that a majority in these groups agree that nanotechnology is beneficial.

For both GM food and particularly animal cloning in food production, a vast majority disagrees that these technologies are beneficial, irrespective of their level of familiarity and engagement with these technologies. There are almost no differences between those who are unfamiliar and those who have some degree of familiarity with animal cloning for food production, when it comes to assessing benefits. For GM food, those who have not heard of it before the interview tend to be a bit less sceptical about benefits than those who knew about GM foods before the interview.

On the whole, public familiarity and engagement with technologies appear to have a significant impact on assessment in the case of nanotechnology. Those who know about and actively engage in nanotechnology tend to be much more inclined to perceive of nanotechnology as safe and beneficial and something not to worry about. On the other hand, when it comes to the two controversial biotechnologies, GM food and animal cloning in food production, levels of familiarity and engagement play a minor role for perceptions. These technologies generally invoke worry, and are perceived as less beneficial and safe.

8. Pillars of truth: religion and science

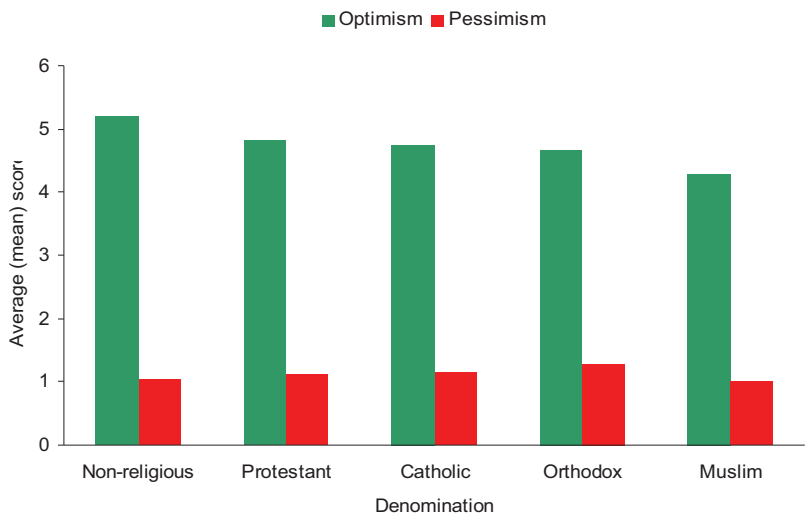
Both science and religion are used as the basis of statements about the 'truth'. But what happens when these 'truths' collide? Religious authorities have made claims for the virtues of creationism and intelligent design, and for these subjects to be included in the school curriculum in science. Others claim that a collection of pluripotent stem cells are a human being, and that whatever the possible benefits, human embryonic stem cell research should not be countenanced. From the scientific perspective, the positivists have long argued that scientific truths trump any other form of knowing. Some scientific authorities have argued that religion is at best wishful thinking, at worst a pernicious force in society. Such competition is not, of course, inevitable. There are both scientists and religious leaders who see no intrinsic conflict between these two pillars of the truth. But how do such positions play out with the public? How do people in the major religious denominations of Europe view science, and what is the impact of the strength of religious adherence on such views? In terms of views about science and technology, does a scientific family background make a difference? And what is the impact of education in science from school to university?

In the Eurobarometer respondents were asked questions about their religious denomination, their religious beliefs, and behaviours. We explore the association between these facets of religion and a selection of indicators of attitudes and beliefs about science and technology: generalised optimism and pessimism about technologies; principles of governance for synthetic biology and animal cloning for food products; and overall support for nanotechnology and GM food. Note that in this chapter the summaries of Europe-wide responses are given for the 32 countries in the sample, rather than just for the 27 current Member States. This approach allows us to gain the maximum amount of information about Muslim respondents, who are in very small numbers in all countries but Turkey.

Generalised technological optimism and pessimism

Technological optimism is based on a simple count of the number of technologies (see Chapter 1) respondents say will 'improve our way of life'. Similarly, technological pessimism is a count of the number of technologies that respondents say will 'make things worse'. As can be seen from Figure 32, the non-religious are the most optimistic, while Muslim respondents are least optimistic. But Figure 32 also shows that Muslims are, along with the non-religious, the least pessimistic. The most pessimistic are the adherents to the Orthodox Church. That said, apart from the difference in optimism between the non-religious and Muslims, the other contrasts are relatively small, providing little basis for claims of cleavages in the culture for science based on religious denomination.

Figure 32: Index of generalised optimism and index of pessimism, by religious denomination, 32 European countries (DKs excluded)



We now look at responses to two questions that address the possible dilemma between science and ethical positions. From the battery on regenerative medicine we take two questions and Figures 32 and 33 show how people in the different denominations responded:

It is ethically wrong to use human embryos in medical research even if it might offer promising new medical treatments

Should ethical and scientific viewpoints on regenerative medicine differ, the scientific viewpoint should prevail

Figure 33: Ethical objection to human embryonic stem cell research, by religious denomination, 32 European countries (DKs excluded)

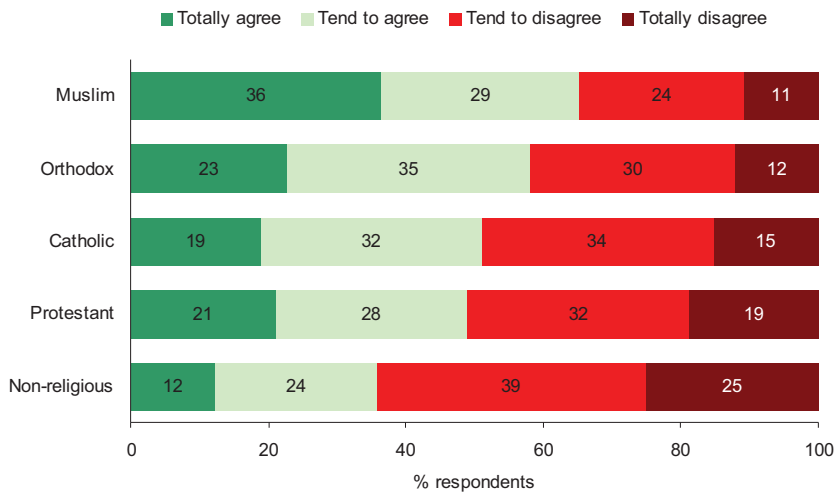


Figure 33 shows that the non-religious are, by a considerable margin, more likely to disagree that human embryonic stem cell research is ethically wrong. A majority of 64 per cent are, by implication, prepared to support stem cell research if it offers medical treatments. Those most likely to agree that stem cell research is ethically wrong are the Muslims, Orthodox Christians and Catholics. But, what is also striking is that 35 per cent of Muslims, 42 per cent of Orthodox Christians and 49 per cent of Catholics support stem cell research on what appears to be utilitarian grounds – potential health benefits outweighing ethical concerns.

Figure 34: Should science prevail over ethics? By religious denomination, 32 European countries (DKs excluded)

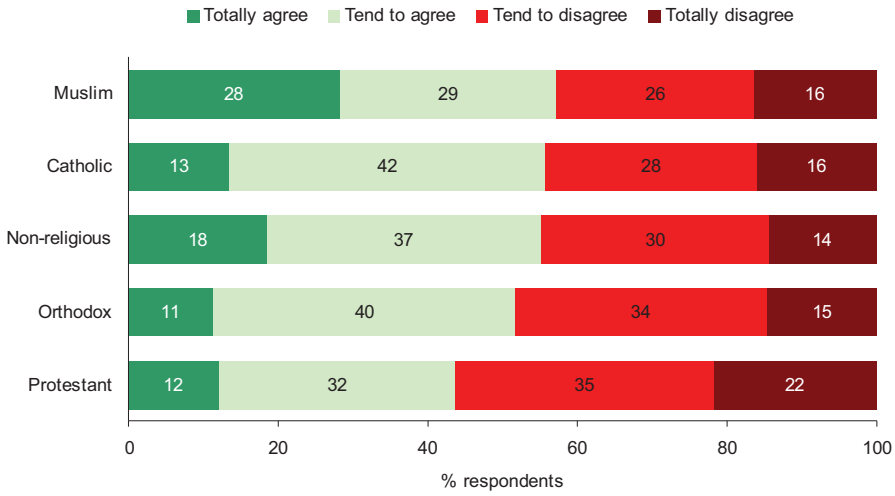
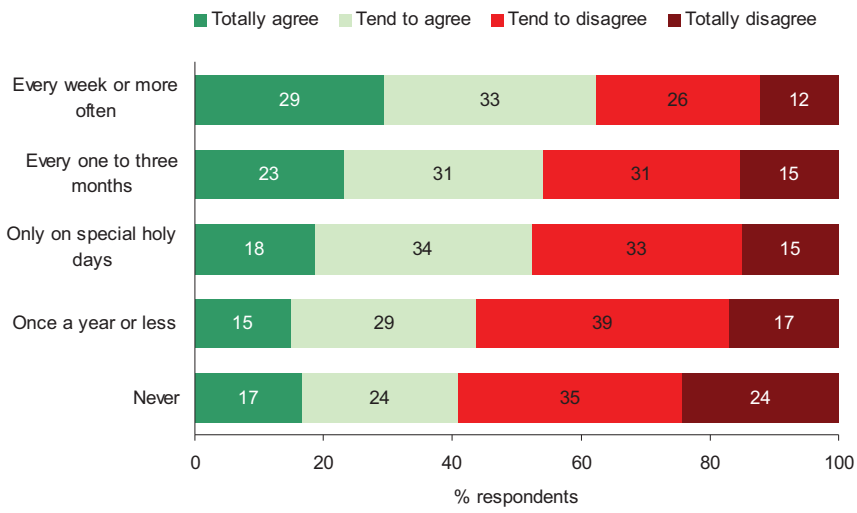


Figure 34 shows that across all the religions and amongst the non-religious, opinion is divided as to whether, in a conflict between science and ethics, the scientific view should prevail. For the Muslims, Catholics and the non-religious there is a slight majority leaning towards science, the Orthodox Christians are equally divided, and among the Protestants the majority leans towards ethics. All in all, the striking finding is of differences of opinion within the religious denominations and within the non-religious, rather than differences between the religious and non-religious.

Now what of religious commitment? Here we take frequency of religious attendance in all the major denominations as a proxy for commitment and look again at the above two questions about the ethics of stem cell research and conflict between ethics and science.

Figure 35: Ethical objection to human embryonic stem cell research, by religious attendance, 32 European countries (DKs excluded)

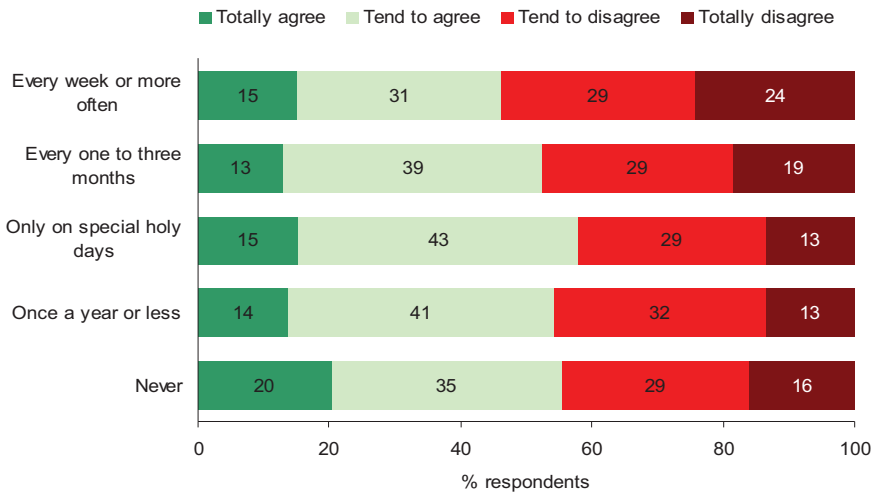


As can be seen in Figure 35, 62 per cent of those attending a religious service once a week or more often are opposed to stem cell research even if it promises new medical treatments. And as the frequency of religious attendance declines so do fewer people oppose stem cell research. That said it is only among those who attend services once a year or less do we see a majority supporting stem cell research. But, once again it is notable that even among the most committed a substantial minority – 38 per cent for 'every week or more often' and 46 per cent for 'once in every one to three months' resolve the dilemma in favour of stem cell research.

What about our second dilemma – how should a conflict between science and ethics be resolved? Figure 44 shows, as we have seen before, that the greater the religious commitment the less are people inclined to resolve such a conflict in favour of science. For those attending a service 'every week of more often' the proportion is 5.5 to 4.5 in favour of ethics. At the other pole, of those who never attend a service the proportion is the mirror image – 5.5 to 4.5 in favour of science.

All in all, the non-religious are more optimistic about the contribution of technologies in the improvement of everyday life and are more likely to support human embryonic stem cell research. But when faced with a conflict between science and religion they are almost evenly split on which pillar of the truth should prevail – not that different to the major European religious denominations. Religious commitment appears to be associated with greater concerns about ethical issues in stem cell research and with a belief that ethics should prevail of scientific evidence. However, here again there are many highly religious people who say that science should prevail in such a conflict of opinion.

Figure 36: Should science prevail over ethics? By religious attendance, 32 European countries (DKs excluded)



Although it is clear that religious commitment is related to an ethical rather than a scientific orientation (Figure 36) this could be due, in part, to other factors. For example older people or possibly women, categories of people that tend to be less supportive of science and technology may be more likely to frequently attend religious services. Multiple regression allows us to investigate such hypotheses. Here responses to the question concerning the priority given to ethics or science are 'predicted' using three indicators – age, gender and religious commitment. We find that age is not a significant predictor but both gender and the frequency of religious attendance are separately highly significant. Being female and attending a religious service once a week or more are strongly related to the tendency to prioritize ethics over science. While this does not explain what actually leads people to this position, it does show that attributing the effect solely to religious commitment is overly simplistic. Other characteristics of the individual outside the scope of our survey are implicated.

Scientific background and education

The last 20 years have seen a number of debates around the topic of science literacy. These range from normative assertions about the need for citizen to know about matters scientific in order to participate in the democratic process; concerns about the decline in the teaching of science and the rise in meta-physical beliefs and the popularity of pseudo science, and the absence of scientific literacy feeding resistance to scientific and technological innovation.

Attempts to measure science literacy have been controversial amongst the social scientific community interested in science and technology. Miller and Durant were early initiators of the measurement camp using a quiz format to assess people's knowledge of scientific facts (Miller 1998). In a recent meta-analysis Allum and colleagues showed a small but consistent positive correlation between various measures of science literacy and support for science and technology (Allum et al. 2008). The critics of

this approach argue that factual knowledge is but a small component of the understanding of techno-science. This approach to science literacy supports the infamous 'deficit model' cultivating a caricature of the public as ignorant, distrustful and risk averse, and points the finger of blame, for example for the problems over GM food, exclusively on the public and away from systemic institutional and political failings in the governance of science – a democratic deficit (Jasanoff 2000).

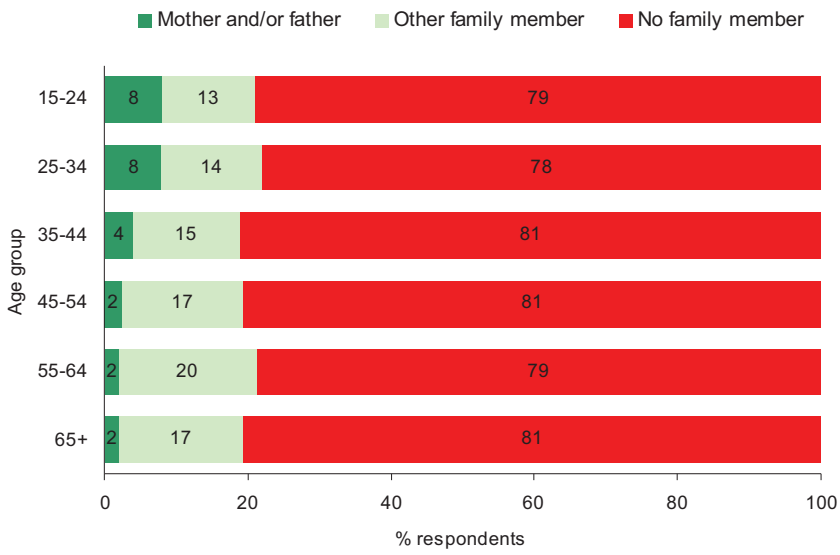
Yet, there are still interesting questions to be asked about the drivers of support and resistance to science and technology. Why are some people more optimistic about technological innovation than others? Why are some more relaxed about risk? As we have seen religious beliefs may play a part, but the part is far more complex than a simple religion versus science equation. What of family background and education?

In the Eurobarometer respondents were asked two questions about their family background and their education in matters scientific. First, respondents were asked:

> *Does/Did any of your family have a job or a university qualification in natural science, technology or engineering (for instance, physics, chemistry, biology, medicine)?*

Figure 37 shows the percentages of respondents across six age groups who say that their mother and/or father, or another family member, had such a job or qualification.

Figure 37: Parental and family university education/work in science, by age group of respondent, EU27 (DKs excluded)



As can be seen in Figure 37 about 1 in 5 people, regardless of age, come from a family background in which their father, mother or another member of the family have a job or university training in science. Across the sample as a whole 4 per cent have a parent educated or working in science and 17 per cent have other family members with similar experience. It is notable that the prevalence of parents with scientific experience increases among the younger age categories, increasing from 1 in 50 of those aged 65+ to 1 in 12 for the 15-24 year olds.

Now, what about the respondents themselves? In the survey the relevant question was:

> *Have you ever studied natural science, technology or engineering: at school, in college, in the university or anywhere else?*

With this question we divide the sample into those who have studied science at a university and those who have not. As can be seen in table 9 around 8 per cent of Europeans have studied science at university level. While 10 per cent of the 25-34 year olds have a university science education, not unexpectedly it is lower, at 8 per cent, for the 15-24 year olds presumably because some of the latter age group are not old enough to go to university.

Table 11 shows the prevalence of science education across the age groups.

Table 11: Percentages of science graduates by age group, EU27

Age group	% respondents
15-24	8
25-34	12
35-44	8
45-54	7
55-64	9
65+	5

Now, it is probably not unreasonable to expect that those socialised in a 'scientific family', or having studied science at university will be not only more familiar with issues in science but also more supportive of science led innovation. But the question remains by how much more, and do socialisation and education have different impacts?

Figure 38 considers technological optimism and pessimism. On both counts those with a parent or other family member, and those who have studied science at university are more optimistic and marginally less pessimistic about the impact of the seven technologies than those with no family member educated or working in science and those who have not studied science at university. Interestingly, there are no differences in optimism between those respondents with a parent versus another family member educated or working in science.

Figure 39 shows that a science degree is associated with both greater optimism and lower pessimism compared to those without a science degree.

The contrast between the socialisation effect (Figure 38) and the educational effect (Figure 39) is rather striking. Studying science at university is associated with significantly higher optimism and lower pessimism compared to family socialisation in science.

Figure 38: Technological optimism and pessimism, by science in the family, EU27

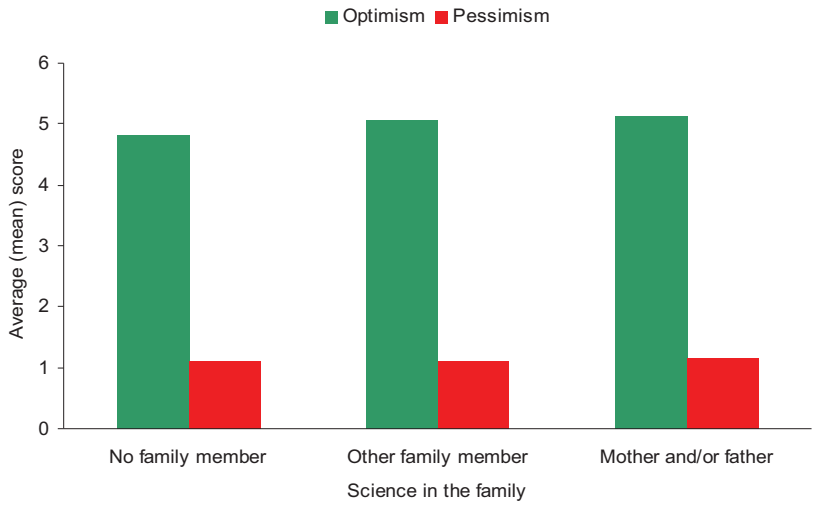
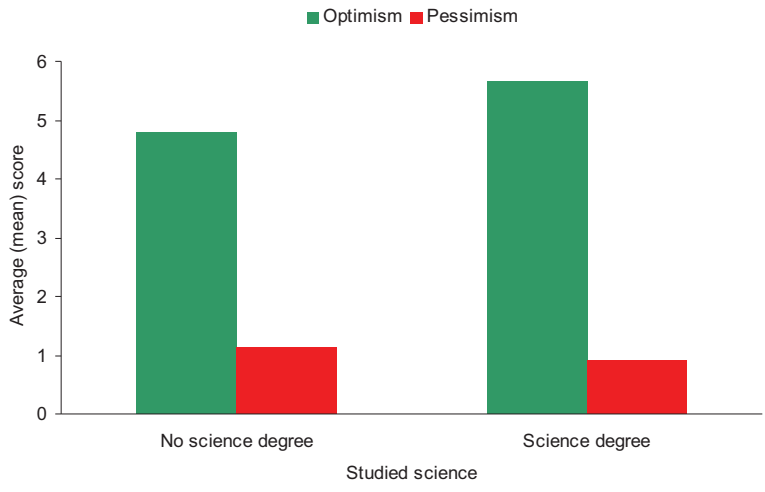


Figure 39: Technological optimism and pessimism, by science education, EU27



So far, we find that both family background in science and university education in science are associated with respondents reporting greater optimism about science and technology. How do these groups compare with others in their views about the governance of science. In the survey, respondents were asked two questions. First, should decision-making be left primarily to the experts or based mainly on the views of the public? And second, should decisions be made largely on evidence related to the risks and benefits or based on moral and ethical considerations?

The responses to the two questions allow us to divide the public into four 'types' reflecting different principles of governance. Opting for decisions based on expert advice rather than the views of the public, and on the grounds of scientific evidence rather than moral and ethical considerations is labelled the principle of scientific delegation. By contrast, those who want decisions to be based on scientific evidence and to reflect the views of average citizens are opting for the principle of scientific deliberation. By the same token, those who would prefer decisions to be based primarily on the moral and ethical issues involved (rather than scientific evidence), and on the advice of experts rather than the general public, we refer to as adopting a principle of moral delegation. And those who prioritise moral and ethical over scientific considerations, whilst favouring the views of the general public over those of the experts, we label as adhering to a principle of moral deliberation.

The survey involved a split ballot in which half the sample was asked about the governance of animal cloning, while the other half was asked about synthetic biology. Hence we have two independent views on the governance of these technologies. Table 12 shows the relevant percentages. Looking at the two tables we see that opting for either moral delegation or scientific deliberation is not affected by studying science at university. For both animal cloning and synthetic biology around 1 in 5 favour moral delegation and about 1 in 11 favour scientific deliberation; whether a person has a degree in science or not makes relatively little difference.

However, the contrast between moral deliberation and scientific delegation is rather striking. Those with a science degree are 10 per cent more likely to opt for scientific delegation and about 10 per cent less likely to chose moral deliberation compared to those without a degree in science. Hence, it may be concluded that the study of science at university is associated with greater confidence in governance by scientifically trained experts.

But having said that, it is worth noting that for animal cloning, 43 per cent of those with a science degree opt for either moral deliberation or moral delegation. By implication, they recognise the moral dimensions of animal cloning for food products and believe that the governance of this technology should prioritise these. To a lesser extent we find the same for synthetic biology. Here 30 per cent of the science graduates want to see the moral issues reflected in the governance of this technology. By the same token, it is worth emphasising that amongst those without a degree in science 41 per cent opt for scientific delegation in the case of animal cloning and 51 per cent in the case of synthetic biology.

Table 12: Principles of governance for animal cloning and synthetic biology by science education, EU27 (DKs excluded)

	No science degree		Science degree	
% respondents	Animal cloning	Synthetic biology	Animal cloning	Synthetic biology
Moral deliberation	34	24	22	13
Moral delegation	17	15	21	17
Scientific deliberation	9	10	7	8
Scientific delegation	41	51	50	62

In a final analysis in this section we look at support for a familiar technology GM food and a less familiar one nanotechnology. Many believe that if only the public knew more about science and technology, they would be more willing to support innovation and be less prone to be influenced by the siren voices of opposition. Thus we continue our analyses by asking whether socialisation in a scientific family and/or a university education in science associated with more support for these two technologies?

First we look at family background in Figure 40. For nanotechnology support rises from 60 per cent for those without a family background in science to 63 per cent with another family member educated or working in science, and to 73 per cent for those respondents whose father and/or mother are educated or work in science. The respective percentages for GM food (see Figure 41) are 26, 30 and 37. Clearly exposure to science in one's family background is associated with more support for both nanotechnology and GM food. But, as noted in the earlier analyses, the issue is not black and white. While those with a mother and/or father working or educated in science are the most supportive of GM food, a majority – 63 per cent – do not agree that the development of GM food should be encouraged.

Figure 40: Support for nanotechnology, by family science background, EU27 (DKs excluded)

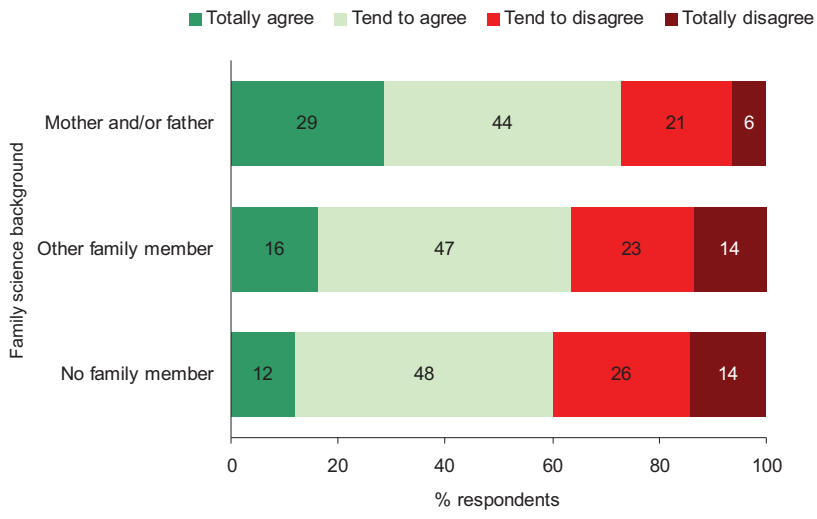
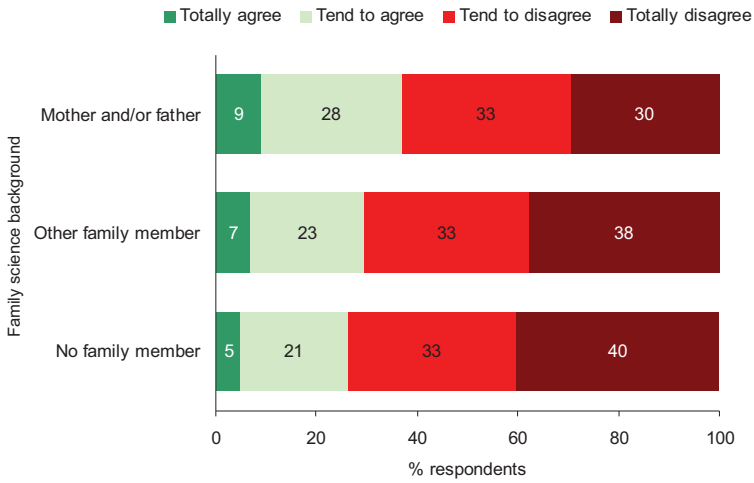


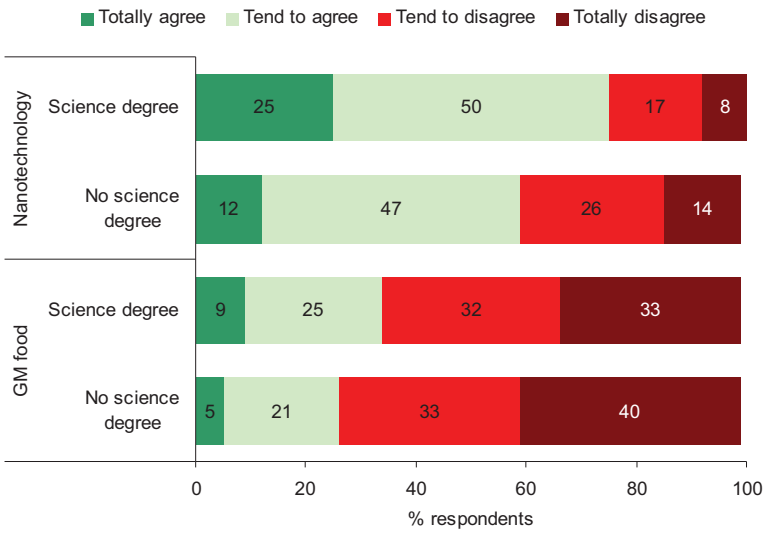
Figure 41: Support for GM food, by family science background, EU27 (DKs excluded)



Looking at the impact of a science degree we find a rather similar picture – see Figure 42. Science graduates are more supportive of nanotechnology than those without a science degree – 75 per cent compared to 59 per cent respectively. The same pattern is observed for GM food. Support for GM food is found among 34 per cent of science graduates compared to 26 per cent of those without a science degree.

But, once again a majority of science graduates – 65 per cent – do not support the development of GM food.

Figure 42: Support for GM food and nanotechnology, by science education, EU27 (DKs excluded)



Broadly speaking these analyses show that socialisation in a scientific family and having a university education in science are associated with greater optimism about science and technology, more confidence in regulation based on scientific delegation, and more willingness to encourage the development of both nanotechnology and GM food. However, the analyses also show that scientific socialisation either in the family or at university is not a magic bullet – it is not the panacea to the issue of resistance to innovation. A majority of those coming from a scientific family background or with a degree in science are not willing to support the development of GM food.

Religion and Science Education

These analyses point to some fairly consistent associations between views about science and technology and both religious beliefs and commitment, and university education in science.

On average, compared to those respondents who say they are non-religious or atheist, those who say they are a member of one of Europe's major religious denominations are less optimistic about science and technology's contribution to a better future, less supportive of hESC research, and more likely to support governance based on ethics rather than science. By contrast, science graduates and those with one or other parent educated or employed in science related activities compared to others are more optimistic about science and technology, have more confidence in regulation based on scientific delegation, and more willingness to encourage the development of both nanotechnology and GM food.

But while these are consistent trends, they are also consistently underwhelming in size. In all the groups under consideration – the religious and the non-religious, those from scientific families or not, and those with a degree in science or not, there are many that depart from the 'consistent pattern'. So, some with religious beliefs and devotional commitment seem to show solid support for science, and some science graduates are very concerned about ethics and far from supportive of GM food. To this extent, any generalisations from these findings on the role of religion and education in cultivating views about science should not be overstated.

9. Climate change

In this section we turn to a theme affecting numerous issues addressed in this report - climate change, global warming and sustainability. As we saw in chapter 1, all the energy technologies included in the index of technological optimism – wind, solar and nuclear power – are increasingly believed to be likely to improve our way of life over the next 20 years – an indication, perhaps, of public anxieties about the impacts of climate change. Yet, while many scientists and political figures are also anxious and debates highlight the need for action, the conference on climate policy in Copenhagen in autumn 2009 failed to agree a compromise to take matters beyond the Kyoto protocol of more than a decade ago. Indeed the parallel world-wide citizens' conference on climate change arrived at more radical views than most politicians would dare to countenance.

What do European citizens believe needs to be done about global warming and climate change?

In the survey, respondents were offered two possible ways of dealing with climate change and asked to indicate which was closest to their opinion:

- *Technology will stop climate change and global warming so we can maintain our way of life and economic growth*
- *To halt climate change and global warming, we have to rethink ways of living even if it means lower economic growth.*

Figure 43 shows the percentages for the options chosen across EU 27 and for each country. There are two trends of particular note.

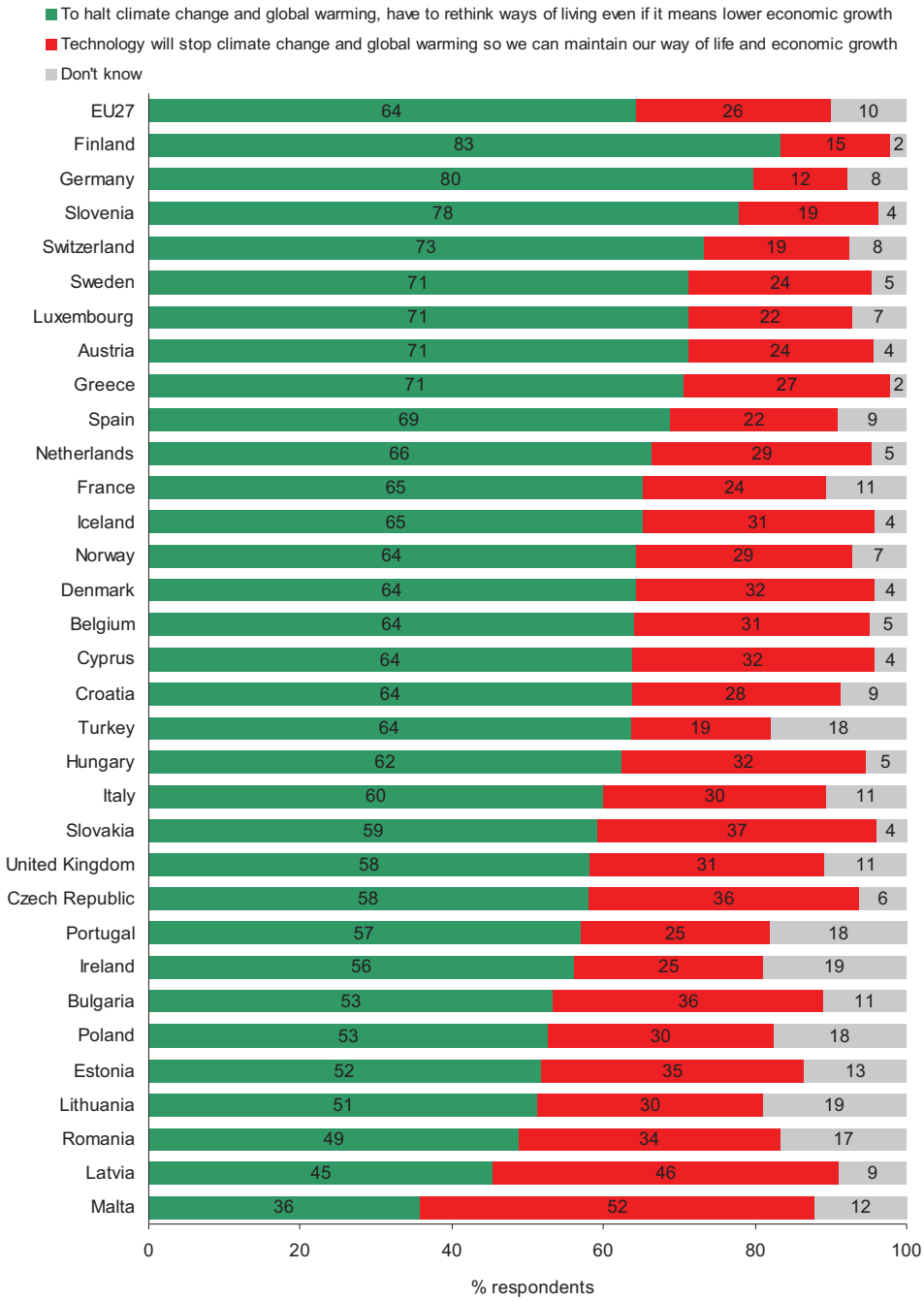
First, there are relatively few 'don't know' responses to this question - these range from 2 per cent in Finland to 19 per cent in Lithuania and Ireland. It is remarkable that there are 20 countries with less than 10 per cent of respondents answering don't know. This suggests that in the light of the ten or more years of debate about climate change, much of it mired in a seemingly inextricable entanglement of conflicting interests, the European public feels ready to take a stance.

And second, the European public take a radical stance. Respondents in all countries except two – Latvia and Malta – select the option of changes in ways of living over technological solutions, even if this means reduced economic growth. Across EU27 more than two to one favour this option. In only seven countries (Bulgaria, Poland, Estonia, Lithuania, Romania, Latvia and Malta) is support for the 'changing ways of life' solution below the 'comfortable majority' threshold of 55 per cent. It is also of note that in eight of the wealthier European countries support for changing life styles is above 70 per cent.

Of course, there is often a gap between 'what people say and what people do', particularly in social surveys where the cost of answering a question in a socially desirable way is minimal. But taking into account other findings in this Eurobarometer on optimism about energy technologies and support for

sustainable biofuels, we suggest that converging lines of inquiry point to a recognition that something needs to be done about climate change and that both society and technology has a contribution to make.

Figure 43: Favoured solutions for halting climate change

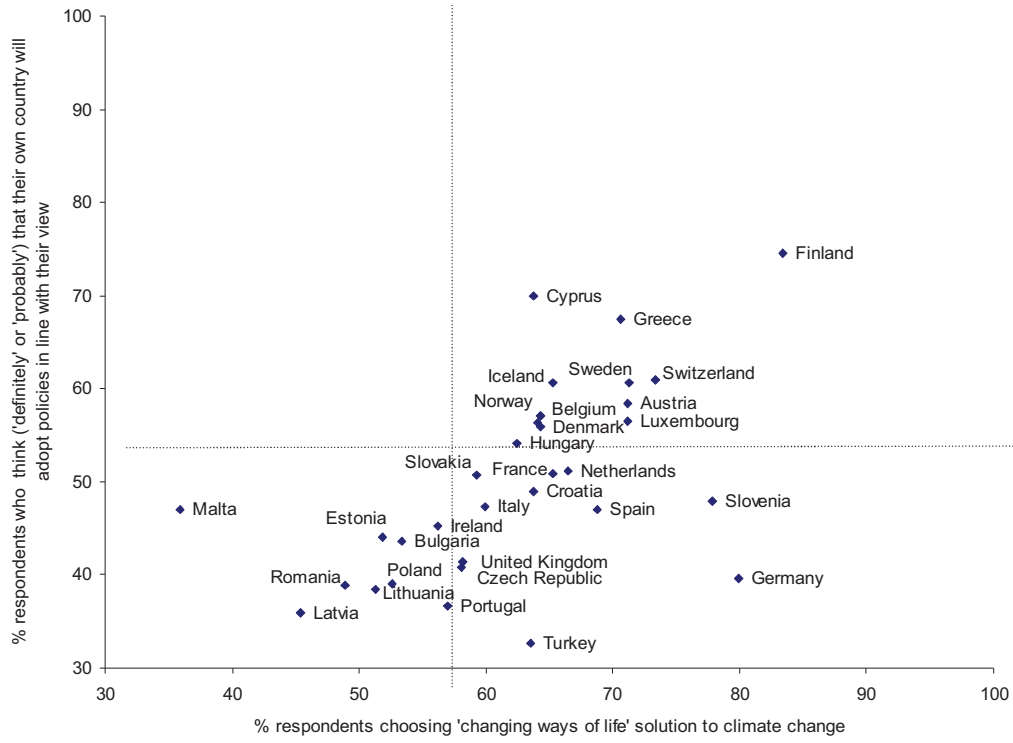


Perceived consensus and policy expectations regarding the 'changing ways of life' solution

Overall, the support for the view that there is a need for changing lifestyles – even if this implies reduced economic growth – is impressive. Do respondents perceive their views to be consensually shared and do they think that their views will be adopted by politics in their country? Interestingly, whatever view on climate change respondents hold, the majority is likely to assume that others share their views and that their views will be reflected in national policies. Out of those who think that technology will stop climate change, 58 per cent think that many other people share their views and 51 per cent assume that their views will be adopted by their country's policies (29 per cent and 36 per cent respectively do not think so, with the remaining respondents saying that they don't know). Out of those who think that a change of life is needed to stop climate change, 63 per cent think that their views are shared by others but only 48 per cent think that their country will adopt their preferred policy (26 per cent and 37 per cent do not think so). Given that an individual's beliefs are reinforced by the support – actual or perceived - of others, that so many believe that others share their views, is an indication of just how difficult is the task of changing beliefs about climate change.

The expectations of the public concerning their government's decisions are important in terms of future social debate. When the publics have clear preferences for certain solutions and do not expect governments to implement them, more social controversy and debate are to be expected. Figure 44 shows that in some countries (Finland, Switzerland, Greece, Sweden, Austria, Iceland) there is both a strong preference for the 'changing ways of life' solution and high confidence that the country will adopt policies consonant with this solution. In other countries, respondents – although strongly supporting the 'changing ways of life' solution – are less confident they will see corresponding policies (Germany, Slovenia, Spain, France). Countries like Latvia, Romania, Estonia or Malta show a lower preference for the 'changing ways of life' solution, but also low expectations regarding a consonant public policy.

Figure 44: Preference for 'changing ways of life' solution to climate change and confidence that one's government will adopt such policies, by country



Note: the two lines added mark the 'comfortable majority' threshold (55 per cent) for ease of interpretation.

10. Public ethics, technological optimism and support for biotechnology

This analysis and interpretation of the Eurobarometer 73.1 is a component of an EU funded project *Sensitive Technologies and European Public Ethics* (STEPE)[14]. In the analysis of the survey we have looked at the wider picture using summary scores across the EU27 countries, and presenting graphics that show comparative data for the individual 32 countries. In this final chapter, we return to the project's wider goal of investigating European public ethics, and we do so using a statistical technique – cluster analysis – that allows us to identify groups of countries that share broadly similar views on moral and ethical issues in relation to science and technology.

The analysis is based on those questions in the survey that addressed moral and ethical sensitivity:

- The percentage of respondents who think that in a disagreement between science and ethics in the context of regenerative medicine, the ethical view should prevail (*ethics over science or science over ethics*).
- For GM food, nanotechnology and animal cloning, the average level of concern about distributional fairness – whether 'it will benefit some people but put others at risk' and whether 'it will help people in developing nations'. Rather than 'distributional equity' we call this *distributional fairness.*
- The percentage of respondents who would want to know about the moral and ethical issues involved in synthetic biology if they were deciding how to vote in a referendum (*interest in ethics*).
- The percentage of respondents who think that the governance of science, in relation to synthetic biology, and separately, animal cloning, should be based on moral and ethical considerations rather than scientific evidence (*moral governance versus scientific governance*).

It is important to appreciate that cluster analysis is a procedure for summarizing a variety of data sources. It provides a number of possible 'solutions', identifying different numbers of clusters, from which the researcher chooses the most interpretable. In this sense, the outcome of a cluster analysis is tentative and provisional. For our analysis, we selected a five-cluster solution for the 32 countries. Each cluster comprises a set of countries, described in Table 13 below.

[14] Funded by the Science in Society Programme of the EU's Seventh Framework Programme for Research and Technological Development. For more information on STEPE, see http://www.stepe.eu

Table 13: Public ethics: five clusters

Cluster	Countries	Profile	Sensitivities and place of science
1	Belgium, Czech Republic, Estonia, France, Slovakia, Sweden and UK	• Low concern over distributional fairness • Balanced on governance of science • Moderate interest in ethics • Science over ethics	Interest in ethics Science 1st
2	Croatia, Finland, Latvia, Luxembourg, Norway, Poland, Portugal, Turkey	• Moderate concern about distributional fairness • Balanced on scientific governance • Low interest in ethics • Science over ethics	Distributional fairness Science 1st
3	Hungary, Italy, Lithuania, Romania and Spain	• Moderate concern about distributional fairness • Scientific governance • Low interest in ethics • Science over ethics	Science 1st Low to moderate interest in ethical issues
4	Austria, Bulgaria, Cyprus, Germany, Greece, Slovenia and Switzerland	• High concern about distributional fairness, particularly about GM food • High support for moral governance • Moderate interest in ethics • Ethics over science	Distributional fairness Science 2nd
5	Denmark, Iceland, Ireland, Netherlands and Malta	• Low fairness concerns, particularly for GM food • Moral governance • High interest in ethics • Ethics over science	Moral governance Science 2nd

We must take care in interpreting these clusters. First, Europe does not present a level playing field when it comes to matters of science and society. Some countries have a longish history of bringing moral and ethical issues into science; others have not. Equally, what constitutes 'ethical concerns' may vary across countries due to their wider history and more specific experiences with science and technology. For example, Austria's referendum in 1996 set in train a long history of sensitivities around genetic modification, and in the UK, the Human Embryology and Fertilisation Authority facilitated the development of regenerative medicines well in advance of many other European countries.

Table 14 shows some quite nuanced differences between the clusters. Countries in cluster 4 are characterized by a wide ranging moral and ethical imperative, while countries in cluster 5 are interested in ethical issues, but apparently not concerned about distributional fairness.

In contrast to clusters 4 and 5, the countries in clusters 1, 2 and 3 all prioritise science over ethics. Clusters 2 and 3 differ from countries in cluster 1 by a greater concern about issues of distribution fairness. And in cluster 1 we see a greater interest in the ethical implications of synthetic biology in comparison to clusters 2 and 3.

How do these patterns of ethical concerns relate to levels of support for science and technology? To investigate this, we take three indicators:

- Technological optimism - the number of technologies that people say would improve our way of life *(optimism)*
- Support for GM food, nanotechnology and animal cloning for food products - total percentage of supporters *(bio-nano)*
- Support for the various regenerative medicines – see Chapter 4; total percentage of supporters *(regenerative medicine)*

Table 14: Public ethics and support for biotechnology

Cluster	Sensitivities	Optimism	Support for bio-nano	Support for regenerative medicine
1	Interest in ethics science 1st	High	High	High
2	Distributional fairness Science 1st	Medium	Medium	Low
3	Science 1st	Medium	Medium	Medium
4	Distributional fairness Science 2nd	Low	Low	Low
5	Moral governance Science 2nd	Medium	High	High

Table 14 shows some interesting associations between public sensitivities and levels of support for the technologies. Cluster 4, predominantly German speaking countries, for whom all the moral and ethical issues appear to be highly sensitivities show, relatively speaking, the lowest technological optimism and lowest support for regenerative medicines and for bio-nano.

Cluster 5, which includes Denmark, the Netherlands and Ireland, also put science second and have strong views on the importance of moral and ethical issues in governance. At the same time they are, relatively speaking, among the most supportive of bio-nano and regenerative medicine, and show moderate technological optimism. Reflecting on the recent history of Denmark and the Netherlands the combination of public sensitivities about and support for science and technology might reflect the

successful embedding of societal issues in science – societies at ease with scientific progress, informed by ethical principles.

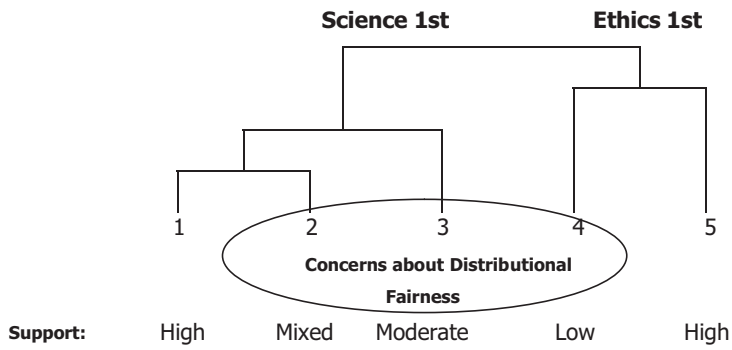
By contrast, cluster 1, which includes France, Sweden and the UK, put science first but also show an interest in, rather than possibly concerns about, ethics. In these countries distributional fairness is apparently not an issue. In this cluster of countries, relative to others, technological optimism is high and there are high levels of support for regenerative medicines and bio-nano.

Cluster 2 is a heterogeneous group of countries linked by putting science first, having some concerns about distributional fairness but otherwise at the centre of gravity in Europe. They are, relatively speaking, moderately optimistic about technology, not very keen on regenerative medicine and moderate supporters bio-nano.

Cluster 3, which includes Italy, Spain and Hungary also put science first. But in these countries ethical and moral issues are not on the public's radar screen. In comparison with the other clusters, these countries show moderate levels of technological optimism and equally moderate levels of support for bio-nano.

Figure 45 shows how the clusters are statistically related to each other. Looking from the bottom to the top of the graphic, it can be seen that clusters 1 and 2 are more similar to each other than to any other cluster. Cluster 3 is more similar to clusters 1 and 2 than it is to any other cluster. Clusters 4 and 5 are more similar to each other than to any other cluster. If we were to select a two cluster solution to these data, we would split the countries between those in clusters 1, 2 and 3 on the one hand, and clusters 4 and 5 on the other. Another way of expressing this is to say that the greatest division between countries is between those in the upper three rows of Table 14, and those in the lower two rows. And it turns out that the key characteristic distinguishing those two groups of countries from each other is the relative priority given to scientific versus ethical concerns. But having said that we need to move down the graphic and note that clusters where distributional fairness is a concern are rather different in their support for science and technology, than those clusters (1 and 5) where this is a lesser concern.

Figure 45: Relationships between clusters of countries



Looking at clusters 4 and 5 it is clear that we cannot conclude that giving priority to ethics over science leads to a profile of low technological optimism and low support for biotechnologies. Rather, technological optimism and support for biotechnologies must be seen as a combination of the priority given to *either* ethics over science, *or* science over ethics; and crucially, whether distributional fairness is a particular sensitivity. Where ethics takes priority, concerns about distributional fairness lead to a profile of low support. And when science taking priority over ethics is combined with concerns about distributional fairness, then support moderate. For the present we conclude that the relations between perceptions of science and technology, and public ethics are intriguing. In our continuing research we will dig deeper into the meaning and origins of distributional fairness, and into the wider implications of the relative priority that people give to science versus ethics.

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Annex 1

EB Special 73.1 Biotechnology and the Life Sciences

Questionnaire: English version

QB1 **I am going to read out a list of areas where new technologies are currently developing. For each of these, do you think it will have a positive, a negative or no effect on our way of life in the next 20 years?**

(ONE ANSWER PER LINE)

	(READ OUT)	Positive effect	Negative effect	No effect	DK
1	Solar energy	1	2	3	4
2	Computers and Information Technology	1	2	3	4
3	Biotechnology and genetic engineering	1	2	3	4
4	Space exploration	1	2	3	4
5	Nuclear energy (M)	1	2	3	4
6	Nanotechnology	1	2	3	4
7	Wind energy (N)	1	2	3	4
8	Brain and cognitive enhancement (M)	1	2	3	4

ASK QB2a TO QB4a ONLY TO SPLIT A - OTHERS GO TO QB2b

Let's speak now about genetically modified (GM) food made from plants or micro-organisms that have been changed by altering their genes. For example a plant might have its genes modified to make it resistant to a particular plant disease, to improve its food quality or to help it grow faster.

QB2a **Have you ever heard of genetically modified (or GM) foods before? (M)**

Yes	1
No	2

EB64.3 QB6a TREND MODIFIED

ASK QB3a IF "YES", CODE 1 IN QB2a - OTHERS GO TO QB4a

QB3a **Have you ever…?**

(SHOW CARD WITH SCALE – ONE ANSWER PER LINE)

	(READ OUT)	Yes, frequently	Yes, occasionally	Yes, only once or twice	No, never	DK
1	Talked about GM food with anyone before today	1	2	3	4	5
2	Searched for information about GM food	1	2	3	4	5

ASK ALL IN SPLIT A

QB4a **For each of the following issues regarding GM food please tell me if you agree or disagree with it.**

(SHOW CARD WITH SCALE – ONE ANSWER PER LINE)

	(READ OUT)	Totally agree	Tend to agree	Tend to disagree	Totally disagree	DK
1	GM food is good for the (NATIONALITY) economy	1	2	3	4	5
2	GM foods is not good for you and your family	1	2	3	4	5
3	GM food helps people in developing countries	1	2	3	4	5
4	GM food is safe for future generations	1	2	3	4	5
5	GM food benefits some people but puts others at risk	1	2	3	4	5
6	GM food is fundamentally unnatural	1	2	3	4	5
7	GM food makes you feel uneasy	1	2	3	4	5
8	GM food is safe for your health and your family's health	1	2	3	4	5
9	GM food does no harm to the environment	1	2	3	4	5
10	The development of GM food should be encouraged	1	2	3	4	5

ASK QB2b TO QB7b ONLY TO SPLIT B - OTHERS GO TO QB5a

And now thinking about nanotechnology: Nanotechnology involves working with atoms and molecules to make new particles that are used in cosmetics to make better anti-aging creams, suntan oils for better protection against skin cancer and cleaning fluids to make the home more hygienic. Despite these benefits, some scientists are concerned about the unknown and possibly negative effects of nano particles in the body and in the environment.

QB2b **Have you ever heard of nanotechnology before? (M)**

Yes	1
No	2

ASK QB3b IF "YES", CODE 1 IN QB2b - OTHERS GO TO QB4b

QB3b **Have you ever…?**

(SHOW CARD WITH SCALE – ONE ANSWER PER LINE)

	(READ OUT)	Yes, frequently	Yes, occasionally	Yes, only once or twice	No, never	DK
1	Talked about nanotechnology with anyone before today	1	2	3	4	5
2	Searched for information about nanotechnology	1	2	3	4	5

ASK ALL IN SPLIT B

QB4b **For each of the following statements regarding nanotechnology please tell me if you agree or disagree with it.**

(SHOW CARD WITH SCALE – ONE ANSWER PER LINE)

	(READ OUT)	Totally agree	Tend to agree	Tend to disagree	Totally disagree	DK
1	Nanotechnology is good for the (NATIONALITY) economy	1	2	3	4	5
2	Nanotechnology is not good for you and your family	1	2	3	4	5
3	Nanotechnology helps people in developing countries	1	2	3	4	5
4	Nanotechnology is safe for future generations	1	2	3	4	5
5	Nanotechnology benefits some people but puts others at risk	1	2	3	4	5
6	Nanotechnology is fundamentally unnatural	1	2	3	4	5
7	Nanotechnology makes you feel uneasy	1	2	3	4	5
8	Nanotechnology is safe for your health and your family's health	1	2	3	4	5
9	Nanotechnology does no harm to the environment	1	2	3	4	5
10	Nanotechnology should be encouraged	1	2	3	4	5

Let's speak now about cloning farm animals. Cloning may be used to improve some characteristics of farmed animals in food production. Due to the high cost of cloning, this technique would mainly be used to produce cloned animals which will reproduce with non-cloned animals. Their offspring would then be used to produce meat and milk of higher quality. However, critics have raised questions about ethics of animal cloning.

QB5b Have you ever heard of animal cloning in food production before?

Yes	1
No	2

ASK QB6b IF "YES", CODE 1 IN QB5b - OTHERS GO TO QB7b

QB6b Have you ever…?

(SHOW CARD WITH SCALE – ONE ANSWER PER LINE)

	(READ OUT)	Yes, frequently	Yes, occasionally	Yes, only once or twice	No, never	DK
1	Talked about animal cloning in food production with anyone before today	1	2	3	4	5
2	Searched for information about animal cloning in food production	1	2	3	4	5

ASK ALL IN SPLIT B

QB7b **For each of the following statements regarding animal cloning in food production please tell me if you agree or disagree with it.**

(SHOW CARD WITH SCALE – ONE ANSWER PER LINE)

	(READ OUT)	Totally agree	Tend to agree	Tend to disagree	Totally disagree	DK
1	Animal cloning in food production is good for the (NATIONALITY) economy	1	2	3	4	5
2	Animal cloning in food production is not good for you and your family	1	2	3	4	5
3	Animal cloning in food production helps people in developing countries	1	2	3	4	5
4	Animal cloning in food production is safe for future generations	1	2	3	4	5
5	Animal cloning in food production benefits some people but puts others at risk	1	2	3	4	5
6	Animal cloning in food production is fundamentally unnatural	1	2	3	4	5
7	Animal cloning in food production makes you feel uneasy	1	2	3	4	5
8	Animal cloning in food production is safe for your health and your family's health	1	2	3	4	5
9	Animal cloning in food production does no harm to the environment	1	2	3	4	5
10	Animal cloning in food production should be encouraged	1	2	3	4	5

ASK QB5a TO QB10a ONLY TO SPLIT A - OTHERS GO TO QB8b

Let's speak now about regenerative medicine which is a new field of medicine and clinical applications that focuses on the repairing, replacing or growing of cells, tissues, or organs.

QB5a **Stem cell research involves taking cells from human embryos that are less than 2 weeks old. They will never be transplanted into a woman's body but are used to grow new cells which then can be used to treat diseases in any part of the body. Would you say that…?**

(READ OUT – ONE ANSWER ONLY)

You fully approve and do not think that special laws are necessary	1
You approve as long as this is regulated by strict laws	2
You do not approve except under very special circumstances	3
You do not approve under any circumstances	4
DK	5

QB6a **Now suppose scientists were able to use stem cells from other cells in the body, rather than from embryos. Would you say that…?**

(READ OUT – ONE ANSWER ONLY)

You fully approve and do not think that special laws are necessary	1
You approve as long as this is regulated by strict laws	2
You do not approve except under very special circumstances	3
You do not approve under any circumstances	4
DK	5

NEW

QB7a **Scientists can put human genes into animals that will produce organs and tissues for transplant into humans, such as pigs for transplants or to replace pancreatic cells to cure diabetes. Would you say that…?**

(READ OUT – ONE ANSWER ONLY)

You fully approve and do not think that special laws are necessary	1
You approve as long as this is regulated by strict laws	2
You do not approve except under very special circumstances	3
You do not approve under any circumstances	4
DK	5

QB8a **Scientists also work on gene therapy which involves treating inherited diseases by intervening directly in the human genes themselves. Would you say that…?**

(READ OUT – ONE ANSWER ONLY)

You fully approve and do not think that special laws are necessary	1
You approve as long as this is regulated by strict laws	2
You do not approve except under very special circumstances	3
You do not approve under any circumstances	4
DK	5

QB9a **Regenerative medicine is not only about developing cures for people who are ill. It is also looking into ways of enhancing the performance of healthy people, for example to improve concentration or to increase memory. Would you say that…?**

(READ OUT – ONE ANSWER ONLY)

You fully approve and do not think that special laws are necessary	1
You approve as long as this is regulated by strict laws	2
You do not approve except under very special circumstances	3
You do not approve under any circumstances	4
DK	5

QB10a **Now I would like to know whether you agree or disagree with each of the following issues regarding regenerative medicine.**

(SHOW CARD WITH SCALE – ONE ANSWER PER LINE)

	(READ OUT)	Totally agree	Tend to agree	Tend to disagree	Totally disagree	DK
1	Research involving human embryos should be forbidden, even if this means that possible treatments are not made available to ill people	1	2	3	4	5
2	It is ethically wrong to use human embryos in medical research even if it might offer promising new medical treatments	1	2	3	4	5
3	We have a duty to allow research that might lead to important new treatments, even when it involves the creation or use of human embryos	1	2	3	4	5
4	Should ethical and scientific viewpoints on regenerative medicine differ, the scientific viewpoint should prevail	1	2	3	4	5
5	Mixing animal and human genes is unacceptable even if it helps medical research for human health	1	2	3	4	5
6	You do not support developments in regenerative medicine if it only benefits rich people	1	2	3	4	5
7	Immediately after fertilisation the human embryo can already be considered to be a human being	1	2	3	4	5
8	Research on regenerative medicine should be supported, even though it will benefit only a few people	1	2	3	4	5
9	Research into regenerative medicine should go ahead, even if there are risks to future generations	1	2	3	4	5

ASK QB8b TO QB11b ONLY TO SPLIT B - OTHERS GO TO QB11a

Some European researchers think there are new ways of controlling common diseases in apples– things like scab and mildew. There are two new ways of doing this. Both mean that the apples could be grown with limited use of pesticides, and so pesticide residues on the apples would be minimal.

QB8b The first way is to artificially introduce a resistance gene from another species such as a bacterium or animal into an apple tree to make it resistant to mildew and scab. For each of the following statements about this new technique please tell me if you agree or disagree.

(SHOW CARD WITH SCALE - SHOW PICTURE (Bacterium to apple) – ONE ANSWER PER LINE)

	(READ OUT)	Totally agree	Tend to agree	Tend to disagree	Totally disagree	DK
1	It is a promising idea	1	2	3	4	5
2	Eating apples produced using this technique will be safe	1	2	3	4	5
3	It will harm the environment	1	2	3	4	5
4	It is fundamentally unnatural	1	2	3	4	5
5	It makes you feel uneasy	1	2	3	4	5
6	It should be encouraged	1	2	3	4	5

QB9b And which of the following statements is closest to your view?

Apples created by this technique would be like GM food and should be clearly identified with a special label	1
Apples created by this technique would be the same as ordinary apples and would not need special labelling	2
DK	3

QB10b The second way is to artificially introduce a gene that exists naturally in wild/ crab apples which provides resistance to mildew and scab. For each of the following statements about this new technique please tell me if you agree or disagree.

(SHOW CARD WITH SCALE - SHOW PICTURE (Apple to apple) – ONE ANSWER PER LINE)

	(READ OUT)	Totally agree	Tend to agree	Tend to disagree	Totally disagree	DK
1	It will be useful	1	2	3	4	5
2	It will be risky	1	2	3	4	5
3	It will harm the environment	1	2	3	4	5
4	It is fundamentally unnatural	1	2	3	4	5
5	It makes you feel uneasy	1	2	3	4	5
6	It should be encouraged	1	2	3	4	5

QB11b And which of the following statements is closest to your view?

(READ OUT – ONE ANSWER ONLY)

Apples created by this technique would be like GM food and should be clearly identified with a special label	1
Apples created by this technique would be the same as ordinary apples and would not need special labelling	2
DK	3

ASK QB11a TO QB16a ONLY TO SPLT A - OTHERS GO TO QB12b

Synthetic biology is a new field of research bringing together genetics, chemistry and engineering. The aim of synthetic biology is to construct completely new organisms to make new life forms that are not found in nature. Synthetic biology differs from genetic engineering in that it involves a much more fundamental redesign of an organism so that it can carry out completely new functions.

QB11a Before today, have you ever heard anything about synthetic biology?

Yes	1
No	2

ASK QB12a IF "YES", CODE 1 IN QB11a - OTHERS GO TO QB13a1

QB12a Have you ever…?

(SHOW CARD WITH SCALE – ONE ANSWER PER LINE)

	(READ OUT)	Yes, frequently	Yes, occasionally	Yes, only once or twice	No, never	DK
1	Talked about synthetic biology with anyone before today	1	2	3	4	5
2	Searched for information about synthetic biology	1	2	3	4	5

ASK ALL IN SPLIT A

QB13a1 Suppose, there was a referendum about synthetic biology and you had to make up your mind whether to vote for or against. Among the following, what would be the most important issue on which you would like to know more? Firstly?

QB13a2 And secondly?

QB13a3 And thirdly?

(SHOW CARD – ONE ANSWER PER COLUMN)

(READ OUT)	QB13a1 FIRSTLY	QB13a2 SECONDLY	QB13a3 THIRDLY
What the scientific processes and techniques are	1	1	1
Who is funding the research and why	2	2	2
What the claimed benefits are	3	3	3
What the possible risks are	4	4	4
Who will benefit and who will bear the risks	5	5	5
What is being done to regulate and control synthetic biology	6	6	6
What is being done to deal with the social and ethical issues involved	7	7	7
Other (SPONTANEOUS)	8	8	8
None (SPONTANEOUS)	9	9	9
DK	10	10	10

QB14a Overall, what would you say about synthetic biology?

(READ OUT – ONE ANSWER ONLY)

You fully approve and do not think that special laws are necessary	1
You approve as long as this is regulated by strict laws	2
You do not approve except under very special circumstances	3
You do not approve under any circumstances	4
DK	5

Let's speak now about biofuels. Biofuels are made from crops like maize and sugar cane that are turned into ethanol and biodiesel for airplanes, cars and lorries. Unlike oil, biofuels are renewable, would reduce greenhouse gas emissions and make the European Union less dependent on imported oil. Critics, however, say that these biofuels take up precious agricultural land and may lead to higher food prices in the European Union and food shortages in the developing world.

QB15a To what extent do you think these biofuels should be encouraged or not be encouraged?

(READ OUT – ONE ANSWER ONLY)

Should definitely be encouraged	1
Should probably be encouraged	2
Should probably not be encouraged	3
Should definitely not be encouraged	4
DK	5

Now, scientists are working on more sustainable biofuels. These can be made from plant stems and leaves - the things we don't eat, or from trees and algae. With these second generation biofuels, there is no longer the need to use food crops.

QB16a To what extent do you think these sustainable biofuels should be encouraged or not be encouraged?

(READ OUT – ONE ANSWER ONLY)

Should definitely be encouraged	1
Should probably be encouraged	2
Should probably not be encouraged	3
Should definitely not be encouraged	4
DK	5

ASK QB12b TO QB18b ONLY TO SPLIT B - OTHERS GO TO QB19

And now thinking about biobanks for biomedical research: These are collections of biological materials (such as blood and/or tissues) and personal data (medical records, lifestyle data) from large numbers of people. Using biobanks, researchers will try to identify the genetic and environmental factors in diseases, to improve prevention, diagnosis and treatment. Participation in biobanks is voluntary. Critics, however, raise questions about privacy, confidentiality and commercial interests regarding the biobanks and about who is going to regulate them.

QB12b Before today, have you ever heard anything about biobanks?

Yes	1
No	2

ASK QB13b IF "YES", CODE 1 IN QB12b - OTHERS GO TO QB14b

QB13b Have you ever…?

(SHOW CARD WITH SCALE – ONE ANSWER PER LINE)

	(READ OUT)	Yes, frequently	Yes, occasionally	Yes, only once or twice	No, never	DK
1	Talked about biobanks with anyone before today	1	2	3	4	5
2	Searched for information about biobanks	1	2	3	4	5

ASK ALL IN SPLIT B

QB14b In a hospital doctors ask the patient to sign a form giving permission to carry out an operation – this is called 'informed consent' and it is also required of medical researchers who do research involving members of the public. When a scientist does research on data in a biobank, what do you think about the need for this kind of permission? Researchers should…

(READ OUT - ONE ANSWER ONLY)

Not need to ask for permission	1
Ask for permission only once	2
Ask for permission for every new piece of research	3
DK	4

DO NOT ASK QB15b2 IF "NONE" OR "DK", CODE 9-10 IN QB15b1

QB15b1 Biobanks will follow up participants over long periods of time. And many biobanks will work with industrial companies to develop new medicines. Who do you think should be primarily responsible for protecting the public interest? Firstly?

QB15b2 And secondly?

(SHOW CARD – ONE ANSWER PER COLUMN)

(READ OUT)	QB15b1 FIRSTLY	QB15b2 SECONDLY
Medical doctors	1	1
Researchers	2	2
Public institutions (universities, hospitals)	3	3
National governments	4	4
Ethics committees	5	5
International organisations such as the European Union or World Health Organisation	6	6
National Data Protection Authorities	7	7
Other (SPONTANEOUS)	8	8
None (SPONTANEOUS)	9	9
DK	10	10

QB16b Would you be willing to provide information about yourself to a biobank?

(READ OUT – ONE ANSWER ONLY)

Yes, definitely	1
Yes, probably	2
No, probably not	3
No, never	4
DK	5

QB17b In order to understand the causes of diseases researchers need as much information as possible about the people in the biobank. Would you personally be concerned or reluctant about the collection of any of the following types of data and materials from you?

(SHOW CARD – READ OUT – MULTIPLE ANSWERS POSSIBLE)

Blood samples	1,
Tissue collected during medical operations	2,
Your genetic profile	3,
Medical record from your doctor	4,
Lifestyle (what you eat, how much exercise you take, etc.)	5,
Other (SPONTANEOUS)	6,
None (SPONTANEOUS)	7,
DK	8,

QB18b Some countries in the European Union have one or more biobanks. Do you think the sharing and exchange of personal data and biological materials tissue across Member States should be encouraged?

(READ OUT – ONE ANSWER ONLY)

Yes, definitely	1
Yes, probably	2
No, probably not	3
No, definitely not	4
DK	5

ASK ALL

QB19 For each of the following people and groups, do you think they are doing a good job for society or not doing a good job for society?

(ONE ANSWER PER LINE)

	(READ OUT – ROTATE)	Doing a good job for society	Not doing a good job for society	DK
1	Newspapers, magazines and television which report on biotechnology	1	2	3
2	Industries which develop new products with biotechnology	1	2	3
3	University scientists who conduct research in biotechnology	1	2	3
4	Consumer organisations which test biotechnological products	1	2	3
5	Environmental groups who campaign about biotechnology	1	2	3
6	(NATIONALITY) Government making laws about biotechnology	1	2	3
7	Retailers who ensure our food is safe	1	2	3
8	The European Union making laws about biotechnology for all EU Member States	1	2	3
9	Ethics committees who consider the moral and ethical aspects of biotechnology	1	2	3
10	Religious leaders who say what is right and wrong in the development of biotechnology	1	2	3
11	Medical doctors	1	2	3

ASK QB20a TO QB22a ONLY TO SPLIT A - OTHERS GO TO QB20b

QB20a Which of the following views is closest to your own?

(READ OUT – ONE ANSWER ONLY)

Decisions about synthetic biology should be based primarily on scientific evidence	1
Decisions about synthetic biology should be based primarily on the moral and ethical issues	2
DK	3

QB21a Which of the following views is closest to your own?

(READ OUT – ONE ANSWER ONLY)

Decisions about synthetic biology should be based mainly on the advice of experts	1
Decisions about synthetic biology should be based mainly on what the majority of people in a country thinks	2
DK	3

QB22a Which of the following views is closest to your own?

(READ OUT – ONE ANSWER ONLY)

Synthetic biology should be tightly regulated by Government	1
Synthetic biology should be allowed to operate in the market place like a business	2
DK	3

ASK QB20b TO QB22b ONLY TO SPLIT B - OTHERS GO TO QB23

QB20b Which of the following views is closest to your own?

(READ OUT – ONE ANSWER ONLY)

Decisions about animal cloning should be based primarily on scientific evidence	1
Decisions about animal cloning should be based primarily on the moral and ethical issues	2
DK	3

QB21b Which of the following views is closest to your own?

(READ OUT – ONE ANSWER ONLY)

Decisions about animal cloning should be based mainly on the advice of experts	1
Decisions about animal cloning should be based mainly on what the majority of people in a country thinks	2
DK	3

QB22b Which of the following views is closest to your own?

(READ OUT – ONE ANSWER ONLY)

Animal cloning should be tightly regulated by Government	1
Animal cloning should be allowed to operate in the market place like a business	2
DK	3

ASK ALL

QB23 Which of the following views is closest to your own?

(READ OUT – ONE ANSWER ONLY)

The Government should take responsibility to ensure that new technologies benefit everyone	1
It is up to people to seek out the benefits from new technologies themselves	2
DK	3

QB24 And which of the following do you think is most important?

(READ OUT – ONE ANSWER ONLY)

Protecting freedom of speech and human rights	1
Fighting crime and terrorism	2
DK	3

QB25 And which of the following do you think is most important?

(READ OUT – ONE ANSWER ONLY)

Having strong European companies to compete in global markets	1
Reducing economic inequalities among people in the European Union	2
DK	3

QB26 And which of the following do you think is most important?

(READ OUT – ONE ANSWER ONLY)

To halt climate change and global warming we will all have to rethink our ways of living even if it means lower economic growth in (OUR COUNTRY)	1
Technology will find a way to stop climate change and global warming so that we can maintain our way of life and have economic growth	2
DK	3

QB27 To what extent do you think your view on climate change and global warming is shared in (OUR COUNTRY)?

(READ OUT – ONE ANSWER ONLY)

Everyone shares my views	1
A lot of people share my views	2
A few people share my views	3
No one shares my views	4
DK	5

QB28 Do you think (OUR COUNTRY) will adopt policies in line with your view on this matter?

(READ OUT – ONE ANSWER ONLY)

Yes, definitely	1
Yes, probably	2
No, probably not	3
No, definitely not	4
DK	5

QB29 Overall how strongly would you say you feel about issues concerning biotechnology that we have been talking about in this survey?

(READ OUT – ONE ANSWER ONLY)

Extremely strongly	1
Very strongly	2
Somewhat strongly	3
Not at all strongly	4
DK	5

QB30 Does/Did any of your family have a job or a university qualification in natural science, technology or engineering (for instance, physics, chemistry, biology, medicine)?

(READ OUT – MULTIPLE ANSWERS POSSIBLE)

Yes, your father	1,
Yes, your mother	2,
Yes, another member of your family	3,
No, no one in your family	4,
DK	5,

QB31 Have you ever studied natural science, technology or engineering: at school, in college, in the university or anywhere else?

(READ OUT – ONE ANSWER ONLY)

Yes, at the university	1
Yes, in college	2
yes, at school	3
Yes, elsewhere	4
No, you have never studied any of these	5
DK	6

QB32 Which of these statements comes closest to your beliefs?

(SHOW CARD - READ OUT - ONE ANSWER ONLY)

You believe there is a God	1
You believe there is some sort of spirit or life force	2
You don't believe there is any sort of spirit, God or life force	3
DK	4

EB63.1 QB2

QB33 Do you consider yourself to be…?

(DO NOT READ - SHOW CARD - PRECODED LIST - ONE ANSWER ONLY)

Catholic	1
Orthodox	2
Protestant	3
Other Christian	4
Jewish	5
Muslim	6
Sikh	7
Buddhist	8
Hindu	9
Atheist	10
Non believer\Agnostic	11
Other (SPONTANEOUS)	12
DK	13

EB71.2 D44

QB34 Apart from weddings or funerals, about how often do you attend religious services?

(SHOW CARD - READ OUT - ONE ANSWER ONLY)

More than once a week	1
Once a week	2
About once a month	3
About each 2 or 3 month	4
Only on special holy days	5
About once a year	6
Less often	7
Never	8
DK	9

Annex 2

Eurobarometer on Biotechnology and the Life Sciences, 2010 (73.1)

Descriptive statistics

Taken directly from TNS Opinion and Social Report

SPECIAL EUROBAROMETER 341 'Life Sciences and Biotechnology'
TECHNICAL SPECIFICATIONS

Between the 29th of January and the 25th of February 2010, TNS Opinion & Social, a consortium created between TNS plc and TNS opinion, carried out wave 73.1 of the EUROBAROMETER, on request of the EUROPEAN COMMISSION, Directorate-General for Communication, 'Research and Political Analysis'. The SPECIAL EUROBAROMTER n°341 ('Life Sciences and Biotechnology') is part of wave 73.1 and covers the population of the respective nationalities of the European Union Member States, resident in each of the Member States and aged 15 years and over. The EUROBAROMETER 73.1 has also been conducted in two candidate countries (Croatia and Turkey) and in Switzerland, Iceland and Norway. In these countries, the survey covers the national population of citizens and the population of citizens of all the European Union Member States that are residents in these countries and have a sufficient command of the national languages to answer the questionnaire. The basic sample design applied in all states is a multi-stage, random (probability) one. In each 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 order to do so, the sampling points were drawn systematically from each of the 'administrative regional units', after stratification by individual unit and type of area. They thus represent the whole territory of the countries surveyed according to the EUROSTAT NUTS II (or equivalent) and according to the distribution of the resident population of the respective nationalities in terms of metropolitan, urban and rural areas. In each of the selected sampling points, a starting address was drawn, at random. Further addresses (every Nth address) were selected by standard 'random route' procedures, from the initial address. In each household, the respondent was drawn, at random (following the 'closest birthday rule'). All interviews were conducted face-to-face in people's homes and in the appropriate national language. As far as the data capture is concerned, CAPI (*Computer Assisted Personal Interview)* was used in those countries where this technique was available.

For each country a comparison between the sample and the universe was carried out. The Universe description was derived from Eurostat population data or from national statistics offices. For all countries surveyed, a national weighting procedure, using marginal and intercellular weighting, was carried out based on this Universe description. In all countries, gender, age, region and size of locality were introduced in the iteration procedure. For international weighting (i.e. EU averages), TNS Opinion & Social applies the official population figures as provided by EUROSTAT or national statistic offices. The total population figures for input in this post-weighting procedure are listed above.

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 points	± 2.5 points	± 2.7 points	± 3.0 points	± 3.1 points

ABBREVIATIONS	COUNTRIES	INSTITUTES	N° INTERVIEWS	FIELDWORK DATES		POPULATION 15+
BE	Belgium	TNS Dimarso	1012	29/01	16/02	8.866.411
BG	Bulgaria	TNS BBSS	1009	29/01	07/02	6.584.957
CZ	Czech Rep.	TNS Aisa	1043	30/01	12/02	8.987.535
DK	Denmark	TNS Gallup DK	1006	29/01	17/02	4.503.365
DE	Germany	TNS Infratest	1531	30/01	16/02	64.545.601
EE	Estonia	Emor	1004	29/01	15/02	916.000
IE	Ireland	MRBI	1007	29/01	14/02	3.375.399
EL	Greece	TNS ICAP	1000	29/01	14/02	8.693.566
ES	Spain	TNS Demoscopia	1004	01/02	14/02	39.059.211
FR	France	TNS Sofres	1018	29/01	16/02	47.620.942
IT	Italy	TNS Infratest	1018	29/01	12/02	51.252.247
CY	Rep. of Cyprus	Synovate	502	30/01	14/02	651.400
LV	Latvia	TNS Latvia	1013	29/01	16/02	1.448.719
LT	Lithuania	TNS Gallup Lithuania	1026	29/01	09/02	2.849.359
LU	Luxembourg	TNS ILReS	503	29/01	13/02	404.907
HU	Hungary	TNS Hungary	1017	29/01	14/02	8.320.614
MT	Malta	MISCO	500	29/01	14/02	335.476
NL	Netherlands	TNS NIPO	1018	29/01	14/02	13.288.200
AT	Austria	Österreichisches Gallup-Institut	1000	29/01	14/02	6.973.277
PL	Poland	TNS OBOP	1000	30/01	14/02	32.306.436
PT	Portugal	TNS EUROTESTE	1027	30/01	16/02	8.080.915
RO	Romania	TNS CSOP	1060	29/01	10/02	18.246.731
SI	Slovenia	RM PLUS	1004	29/01	14/02	1.748.308
SK	Slovakia	TNS AISA SK	1030	30/01	11/02	4.549.954
FI	Finland	TNS Gallup Oy	1001	29/01	16/02	4.412.321
SE	Sweden	TNS GALLUP	1007	29/01	14/02	7.723.931
UK	United Kingdom	TNS UK	1316	29/01	15/02	51.081.866
HR	Croatia	Puls	1000	29/01	14/02	3.749.400
TR	Turkey	TNS Piar	1003	29/01	14/02	52.728.513
CH	Switzerland	Isopublic	1026	29/01	24/02	6.416.728
IS	Iceland	Capacent	501	30/01	14/02	252.277
NW	Norvay	TNS Gallup	1037	02/02	25/02	3.886.395
TOTAL EU27			**26676**	**29/01**	**17/02**	**406.557.138**

Eurobarometer 73.1
Biotechnology and the life sciences

Codebook

COUNTRY CODES USED IN TABLES

BE	Belgium
DK	Denmark
DE	Germany
GR	Greece
ES	Spain
FI	Finland
FR	France
IE	Ireland
IT	Italy
LU	Luxembourg
NL	Netherlands
AT	Austria
PT	Portugal
SE	Sweden
UK	United Kingdom
CY	Cyprus
CZ	Czech Republic
EE	Estonia
HU	Hungary
LV	Latvia
LT	Lithuania
MT	Malta
PL	Poland
SK	Slovakia
SI	Slovenia
BG	Bulgaria
RO	Romania
TR	Turkey
IS	Iceland
HR	Croatia
CH	Switzerland
NO	Norway

qb1
I am going to read out a list of areas where new technologies are currently developing. For each of these, do you think it will have a positive, a negative or no effect on our way of life in the next 20 years?

Solar energy

exp_solar	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Positive effect	85.2	95.9	92.6	92.3	87.7	94.3	89.2	89.1	80.5	89.9	93.6	88.7	81.3	92.1	85.4	90.8	86.7	82.6	85.3	76.0	58.3	87.1	81.2	87.7	82.0	87.9	79.1	70.1	74.4	90.2	91.4	93.6	86.6
No effect	6.5	2.6	4.1	1.6	2.2	4.1	5.0	2.0	7.7	3.0	5.0	8.5	4.1	4.9	6.5	2.9	6.6	7.2	9.9	10.0	12.5	.8	6.2	6.6	4.7	1.8	3.8	6.6	22.8	2.1	6.1	4.9	5.3
Negative effect	6.7	.8	1.9	5.0	4.5	.8	2.1	2.3	5.7	5.2	.6	1.7	8.2	1.5	3.7	3.2	5.4	4.7	3.2	6.9	17.6	7.0	7.6	3.3	9.7	1.9	7.1	8.4	1.9	3.5	1.4	.5	4.1
DK	1.6	.7	1.3	1.1	5.6	.8	3.6	6.7	6.2	1.9	.8	1.2	6.3	1.5	4.5	3.1	1.3	5.5	1.6	7.2	11.5	5.1	5.0	2.4	3.6	8.5	10.0	14.9	.9	4.3	1.0	1.0	4.1

Computers and Information Technology

exp_computer	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Positive effect	74.6	87.9	76.0	80.1	84.9	82.3	67.8	85.5	72.2	75.6	80.7	66.0	74.5	80.8	84.9	74.8	79.1	80.7	79.5	73.2	61.9	91.2	78.6	80.9	72.4	83.5	71.0	65.1	91.2	78.8	68.5	84.1	77.1
No effect	9.9	6.0	6.0	5.5	2.3	8.1	9.5	3.2	10.0	5.5	8.3	19.5	8.3	6.7	4.4	7.6	6.4	4.1	11.2	4.7	5.5	2.9	5.3	7.2	8.2	1.8	3.5	6.9	6.7	4.1	15.0	5.5	6.7
Negative effect	13.4	4.1	11.3	12.3	5.6	6.7	17.4	4.2	10.1	13.9	8.4	10.2	7.9	8.3	6.2	10.3	12.8	10.2	7.6	16.4	25.3	2.1	10.6	10.1	13.7	5.9	16.0	11.0	1.6	12.4	11.7	5.0	10.5
DK	2.1	2.1	6.7	2.1	7.2	2.9	5.3	7.1	7.7	5.0	2.6	4.3	9.3	4.2	4.5	7.3	1.6	5.1	1.7	5.7	7.3	3.9	5.5	1.8	5.7	8.8	9.4	17.0	.5	4.7	4.8	5.4	5.8

Biotechnology and genetic engineering

exp_biotech	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Positive effect	53.9	62.8	42.6	51.1	65.0	69.4	55.0	47.9	52.1	52.9	53.4	34.9	46.0	71.8	55.9	65.0	65.4	77.0	61.1	56.9	44.6	46.0	51.3	62.2	52.9	37.9	43.1	49.8	79.3	48.9	48.5	73.2	52.9
No effect	13.2	8.8	6.6	6.2	3.2	9.0	6.3	3.4	9.0	9.0	11.5	11.9	7.9	6.9	6.6	3.0	9.0	4.6	15.3	7.1	5.4	1.8	7.1	9.0	7.9	3.7	6.6	7.4	16.6	6.6	16.6	4.1	7.2
Negative effect	24.5	21.3	32.8	23.1	8.6	14.5	18.5	14.2	15.2	25.4	25.5	40.7	11.0	13.8	16.3	6.5	17.0	8.3	10.5	20.8	23.9	9.4	19.2	19.1	25.0	22.5	18.4	14.5	2.1	28.2	21.0	11.4	19.6
DK	8.3	7.1	18.0	19.6	23.2	7.1	20.3	34.4	23.7	12.7	9.6	12.5	35.1	7.5	21.2	25.4	8.6	10.1	13.1	15.2	26.1	42.8	22.4	9.8	14.3	35.9	31.9	28.3	2.0	16.4	14.0	11.3	20.3

Space exploration

exp_space	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Positive effect	46.3	45.9	41.5	64.7	57.1	46.6	36.3	33.9	50.2	31.7	32.3	37.8	45.4	42.6	39.2	54.6	62.6	62.3	55.3	61.2	52.1	33.4	55.6	64.3	52.7	67.6	51.1	49.6	25.2	48.1	28.7	45.6	46.8
No effect	29.8	39.7	35.0	15.0	17.3	37.4	37.7	24.8	25.2	33.1	46.9	40.5	17.3	42.3	35.5	18.9	24.0	18.8	33.5	17.8	16.2	27.4	19.6	21.6	24.1	5.9	11.2	11.9	69.3	20.1	47.7	36.7	28.7
Negative effect	19.0	9.8	12.9	14.9	8.4	10.0	15.9	16.2	12.3	24.8	14.9	12.9	13.2	8.9	16.4	8.9	10.7	10.0	5.6	12.3	13.0	8.7	11.6	10.0	15.9	5.9	15.4	13.2	3.8	21.5	17.0	6.5	13.0
DK	4.9	4.5	10.6	5.4	17.2	5.9	10.1	25.0	12.4	10.4	5.9	8.8	24.2	6.1	8.9	17.6	2.7	8.8	5.6	8.7	18.7	30.5	13.2	4.1	7.3	20.7	22.3	25.4	1.7	10.3	6.6	11.1	11.5

Nuclear energy

exp_nuclear	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Positive effect	37.2	30.6	29.7	22.5	37.3	48.4	38.9	36.1	34.2	25.5	35.2	16.9	27.7	53.8	52.4	40.5	58.0	53.5	43.5	41.7	39.8	28.6	46.1	56.3	37.6	49.2	35.1	39.7	20.3	28.1	32.8	34.8	38.8
No effect	17.8	24.6	9.1	4.9	5.9	16.9	12.9	9.5	9.7	11.2	19.3	13.4	9.7	14.5	8.3	7.0	10.2	8.1	18.4	8.8	7.5	8.7	5.8	7.6	10.5	3.4	5.7	8.8	45.5	9.2	17.8	12.9	9.8
Negative effect	41.0	40.2	49.9	66.4	42.7	28.8	38.3	32.1	40.4	56.0	39.4	61.3	39.6	24.7	26.8	40.0	27.1	30.2	28.1	38.3	33.2	35.9	32.3	30.5	44.7	24.6	37.3	22.0	31.1	51.2	40.1	37.9	38.8
DK	4.1	4.6	11.2	6.3	14.1	5.9	9.9	22.4	15.7	7.2	6.1	8.4	23.0	7.0	12.5	12.5	4.8	8.2	9.9	11.2	19.5	26.7	15.8	5.6	7.1	22.8	21.9	29.5	3.1	11.5	9.3	14.4	12.6

Nanotechnology

exp_nanotech	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Positive effect	44.5	61.5	43.4	37.1	42.4	58.1	45.5	27.2	36.1	50.8	51.6	29.8	29.2	63.3	39.9	46.3	57.9	54.1	44.2	48.9	31.9	19.7	33.8	46.0	42.1	28.6	28.5	32.5	46.4	38.7	47.3	59.4	41.1
No effect	16.4	11.2	7.1	10.1	3.3	12.5	7.6	4.9	12.6	7.8	9.4	16.6	7.2	8.0	8.1	3.3	10.8	7.1	18.3	6.7	4.8	3.4	8.8	15.6	10.2	3.1	5.3	8.0	26.5	7.9	12.7	5.7	8.6
Negative effect	14.0	8.7	12.6	21.2	7.7	6.9	8.2	10.2	10.8	17.0	9.5	24.8	10.7	4.6	5.4	8.3	10.4	5.8	6.4	10.8	8.0	1.2	9.8	14.3	15.1	8.2	13.3	11.2	3.1	19.1	10.3	5.7	10.0
DK	25.1	18.7	37.0	31.6	46.6	22.5	38.7	57.7	40.5	24.4	29.5	28.8	52.8	24.1	46.6	42.0	20.8	33.0	31.1	33.6	55.3	75.7	47.7	24.1	32.7	60.1	52.9	48.4	23.9	34.3	29.7	29.3	40.3

Wind energy

exp_wind	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Positive effect	85.1	96.0	91.0	91.0	85.3	92.0	81.1	89.3	74.1	86.6	89.1	86.3	79.5	86.5	84.3	89.4	84.8	84.4	85.7	84.8	82.4	88.1	84.0	85.5	88.0	84.5	78.0	59.7	75.9	86.5	88.4	91.8	84.1
No effect	7.0	2.7	4.1	1.2	2.2	6.0	8.5	1.1	8.9	5.1	7.0	9.0	4.9	8.8	6.7	.4	10.5	7.4	10.0	7.9	6.8	1.0	3.8	8.1	4.6	1.9	4.1	7.4	22.2	3.1	7.3	4.7	5.9
Negative effect	5.9	.9	3.5	3.0	2.8	1.2	6.1	2.0	5.9	4.4	3.5	3.0	5.3	3.1	4.4	1.2	3.7	3.2	2.8	2.8	2.9	2.2	5.3	3.2	3.6	1.3	4.1	7.7	1.2	5.1	2.2	2.4	4.3
DK	2.0	.4	1.4	4.9	9.7	.9	4.2	7.6	11.0	3.9	.4	1.6	10.2	1.6	4.6	9.0	1.0	5.1	1.5	4.4	7.9	8.7	6.9	3.2	3.9	12.2	13.9	25.1	.7	5.3	2.1	1.2	5.7

Brain and cognitive enhancement

exp_brain	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Positive effect	59.9	66.0	55.8	63.8	73.2	72.6	81.2	43.6	66.8	51.4	54.4	23.1	50.3	15.6	55.4	73.9	64.0	70.5	69.5	54.5	60.1	45.5	29.3	61.8	37.4	55.3	44.7	59.7	65.1	67.8	14.5	85.0	58.7
No effect	14.5	20.5	14.5	7.7	3.0	12.7	8.5	4.7	10.1	11.8	19.6	14.9	7.1	15.2	11.2	3.0	12.3	6.6	16.7	11.6	6.6	5.4	10.0	12.5	14.1	3.7	5.7	7.3	29.2	6.1	16.5	7.7	10.5
Negative effect	13.0	5.1	11.5	10.7	3.0	8.0	3.9	9.7	10.5	14.4	8.0	52.4	7.5	37.3	10.7	3.3	10.5	4.1	6.2	13.2	9.6	1.8	18.3	17.1	32.7	8.3	11.3	8.9	2.0	11.0	57.7	1.7	10.9
DK	12.6	8.5	18.2	17.9	20.8	6.7	6.4	42.0	12.6	22.4	18.1	9.6	35.1	31.9	22.7	19.8	13.2	18.8	7.5	20.7	23.8	47.3	42.4	8.7	15.7	32.7	38.3	24.1	3.7	15.0	11.4	5.6	19.9

qb2a - split ballot A
Let's speak now about genetically modified (GM) food made from plants or micro-organisms that have been changed by altering their genes. For example a plant might have its genes modified to make it resistant to a particular plant disease, to improve its food quality or to help it grow faster.

Have you ever heard of genetically modified (or GM) foods before?

heard_gmfood	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Heard	73.7	86.7	94.6	79.7	73.9	93.1	85.6	80.2	84.7	84.2	93.4	67.9	59.1	90.8	89.0	80.1	76.4	79.5	74.1	90.0	83.5	49.3	81.2	69.4	91.3	79.2	69.9	67.6	90.3	92.5	89.0	96.3	83.6
Not heard	26.3	13.3	5.4	20.3	26.1	6.9	14.4	19.8	15.3	15.8	6.6	32.1	40.9	9.2	11.0	19.9	23.6	20.5	25.9	10.0	16.5	50.7	18.8	30.6	8.7	20.8	30.1	32.4	9.7	7.5	11.0	3.7	16.4

qb3a
[IF YES] Have you ever talked about GM food with anyone before today?

talked_gmfood	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	5.9	8.8	16.0	7.7	4.0	8.1	13.6	6.2	7.8	19.4	11.6	10.1	4.5	11.1	9.2	4.3	3.7	7.2	3.5	9.1	15.0	4.3	5.3	3.3	9.0	6.3	4.6	8.7	14.8	14.7	20.1	7.8	9.5
Yes, occasionally	32.6	42.2	45.4	38.3	29.4	37.7	37.8	24.8	44.2	37.3	38.3	43.0	29.2	40.6	29.6	20.3	26.6	34.5	23.3	38.7	45.9	31.2	24.3	29.8	43.2	32.4	37.2	21.6	40.8	38.3	38.9	41.9	36.4
Yes, only once or	17.1	22.0	16.5	29.5	23.4	23.5	13.5	19.0	21.9	16.3	19.2	29.1	31.9	28.5	17.9	23.6	22.5	22.5	33.0	22.5	15.2	13.4	19.0	33.1	24.4	26.3	25.0	14.8	22.3	22.1	20.9	21.9	20.1
No, never	44.4	27.0	21.7	24.4	42.9	30.7	35.1	48.9	25.1	25.7	30.4	16.4	33.7	19.8	42.8	51.3	46.4	35.5	40.3	29.4	23.7	50.7	50.3	32.9	23.4	33.4	31.7	52.8	22.1	23.3	19.7	27.8	33.4
DK			.3		.3			1.1	.9	1.3	.5	1.3	.8		.6	.5	.8	.3		.2	.2	.4	1.2	1.0		1.6	1.5	2.2		1.6	.4	.6	.5

[IF YES] Have you ever searched for information about GM food?

infosearch_gmfood	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	2.5	5.0	6.6	5.2	2.1	4.9	7.1	3.6	4.9	11.3	5.4	4.6	2.9	4.0	3.2	3.3	2.9	4.2	3.1	4.4	9.0	3.9	4.5	2.1	5.4	2.2	3.7	3.6	7.1	7.4	12.4	2.6	4.7
Yes, occasionally	22.1	15.1	20.7	24.2	14.5	21.7	22.9	15.1	22.9	22.5	20.5	24.4	13.3	24.4	12.5	16.9	11.1	17.9	8.9	18.9	23.7	20.5	12.1	19.7	18.6	9.9	16.1	9.4	18.8	21.8	25.0	16.9	18.2
Yes, only once or	10.1	15.0	16.6	24.4	14.2	16.5	7.4	7.2	17.7	10.7	11.4	17.1	27.2	20.8	10.5	14.4	15.6	18.3	16.4	16.3	11.9	8.2	15.5	17.9	15.0	15.0	18.5	12.4	22.0	11.5	16.3	21.0	14.5
No, never	65.4	64.9	55.9	45.8	69.0	56.7	62.5	72.5	54.0	54.2	62.7	53.9	56.3	50.8	73.0	65.0	70.5	59.4	71.7	60.2	55.1	66.9	67.6	59.7	61.0	70.3	59.6	71.4	52.1	56.1	46.3	59.3	62.1
DK			.1	.4	.3	.2		1.6	.5	1.3			.3		.7	.5		.2		.2	.3	.4	.3	.5		2.6	2.2	3.1		3.3		.2	.4

qb4a
For each of the following issues regarding GM food please tell me if you agree or disagree with it.

GM food is good for the (NATIONALITY) economy

gmfood_economy	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	5.0	9.9	8.6	4.6	9.2	3.5	4.2	3.2	3.5	2.4	6.6	2.9	4.5	8.6	7.4	4.1	1.5	5.3	3.0	3.2	7.0	7.9	4.6	3.6	2.7	4.4	4.1	4.2	7.2	5.1	4.7	5.5	5.9
Tend to agree	29.2	37.8	24.0	16.1	31.4	17.5	20.4	17.6	23.4	16.5	34.3	16.2	24.9	23.8	35.2	13.8	31.4	20.6	21.9	18.1	21.9	19.9	14.9	26.7	15.3	12.2	20.9	5.1	25.4	9.8	19.0	24.9	24.9
Tend to disagree	33.4	26.7	31.9	27.3	18.9	40.6	29.4	21.6	30.9	32.0	29.2	31.5	25.5	28.0	25.8	26.2	36.6	32.8	29.1	32.8	19.9	17.0	32.0	36.7	36.5	27.1	22.1	15.7	38.0	23.1	28.7	24.6	28.5
Totally disagree	18.7	12.4	25.5	43.0	10.2	27.9	27.7	20.4	24.2	33.4	14.9	39.0	8.9	28.6	9.9	33.5	18.2	28.3	29.1	35.9	34.2	15.5	25.4	17.0	41.6	35.0	24.0	56.8	23.4	53.8	34.6	25.5	21.8
DK	13.6	13.2	10.1	8.9	30.4	10.5	18.2	37.2	18.0	15.7	15.0	10.4	36.2	11.1	21.7	22.4	12.3	13.0	17.0	9.9	16.9	39.7	23.1	16.0	4.0	21.2	28.8	18.3	6.0	8.2	13.0	19.5	18.9

GM foods is not good for you and your family

gmfood_family	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	20.2	28.9	44.0	61.0	15.4	31.2	29.2	14.5	28.4	35.0	16.4	36.2	16.0	34.1	10.3	59.3	17.1	31.3	29.6	49.7	46.5	8.4	26.3	19.0	44.5	27.0	25.5	48.4	29.1	44.0	31.0	29.3	27.1
Tend to agree	30.9	31.0	25.2	17.1	27.9	28.2	25.5	24.9	30.7	25.0	26.3	24.2	33.3	22.1	30.1	14.1	26.6	28.4	26.1	29.8	17.9	27.7	26.6	32.7	26.2	20.6	16.8	9.4	29.9	16.7	23.4	30.2	26.7
Tend to disagree	29.0	24.1	13.4	6.7	18.1	22.8	17.9	17.0	17.9	18.2	35.0	15.5	19.6	20.5	29.9	8.8	30.1	15.9	21.8	10.3	9.7	16.2	15.9	26.8	15.6	12.7	17.6	8.8	25.8	12.9	19.9	18.8	19.5
Totally disagree	11.1	6.4	7.3	9.4	11.4	10.6	9.2	8.9	11.9	9.2	9.3	16.9	5.0	11.9	8.4	10.7	13.9	11.5	9.3	3.4	14.9	14.4	15.1	9.4	10.8	19.2	17.7	16.3	8.5	19.4	17.1	7.6	10.6
DK	8.7	9.6	10.2	5.8	27.2	7.2	18.1	34.7	11.0	12.6	13.0	7.2	26.0	11.5	21.3	7.1	12.3	12.9	13.2	6.8	11.1	33.3	16.2	12.2	2.8	20.5	22.4	17.1	6.7	6.9	8.7	14.1	16.0

GM food helps people in developing countries

gmfood_developing	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	14.6	19.7	10.8	6.5	12.0	11.4	7.0	9.6	9.3	3.5	14.7	10.4	7.9	9.3	17.5	13.7	11.0	10.2	8.8	6.9	10.6	9.6	11.3	8.9	11.0	6.1	5.7	5.8	19.8	10.3	8.2	15.5	10.9
Tend to agree	38.4	45.1	29.9	20.3	34.3	35.5	31.1	33.0	24.8	27.9	40.7	26.0	28.0	41.5	41.6	23.1	37.0	37.3	33.4	34.5	31.8	29.9	27.5	35.9	27.4	20.7	22.0	4.7	46.1	26.9	30.3	34.0	31.6
Tend to disagree	20.9	14.7	21.6	29.0	13.9	27.3	20.6	10.5	25.8	27.1	21.8	28.1	21.0	15.5	18.7	15.8	22.1	20.5	24.3	25.0	17.5	9.1	18.0	26.8	28.0	16.7	18.0	13.9	24.7	21.0	23.2	18.1	20.5
Totally disagree	15.8	9.6	24.6	32.8	13.8	16.7	20.8	9.5	20.6	23.0	12.1	23.4	9.0	24.3	5.1	17.3	11.1	14.0	18.5	20.0	19.0	11.8	15.1	9.2	26.6	17.0	19.9	52.6	4.4	29.5	27.3	17.7	17.2
DK	10.4	10.9	13.2	11.4	26.0	9.2	20.5	37.5	19.5	18.6	10.7	12.2	34.2	9.3	17.1	30.0	18.7	17.9	15.1	13.6	21.1	39.6	28.1	19.1	7.0	39.5	34.4	23.0	5.0	12.3	11.1	14.7	19.7

GM food is safe for future generations

gmfood_safe	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	5.7	6.9	2.9	1.9	5.8	2.8	1.3	3.7	4.0	2.3	4.0	5.6	3.4	2.5	6.0	3.2	3.5	4.3	2.4	2.5	2.2	3.1	4.4	3.1	3.9	2.9	3.7	4.1	5.5	4.9	4.0	4.6	3.9
Tend to agree	26.6	26.3	12.6	8.4	23.5	17.7	9.6	19.0	19.1	13.9	30.1	16.2	22.0	7.2	25.3	5.1	27.8	17.0	18.8	5.8	6.0	12.9	12.6	26.5	16.5	8.3	9.9	3.6	26.5	10.8	10.8	19.7	17.3
Tend to disagree	31.1	34.2	34.2	24.6	20.8	40.7	30.6	17.3	29.4	33.9	30.0	26.6	29.0	29.1	28.3	23.4	32.3	28.8	34.0	30.5	20.7	19.7	30.0	34.2	32.6	22.7	22.9	12.3	37.3	26.8	32.4	29.3	29.1
Totally disagree	23.8	22.5	38.1	56.9	20.5	27.5	40.5	14.9	26.1	35.0	16.5	40.8	12.6	50.9	10.6	47.3	19.1	33.7	27.6	52.3	55.0	19.7	31.1	18.7	39.2	41.2	33.1	63.5	22.6	45.0	36.8	28.0	28.9
DK	12.8	10.2	12.2	8.2	29.4	11.3	18.0	45.2	21.4	14.9	19.5	10.9	33.0	10.2	29.7	21.1	17.3	16.3	17.1	8.9	16.1	44.5	21.9	17.6	7.8	24.9	30.5	16.6	8.1	12.5	15.9	18.4	20.8

GM food benefits some people but puts others at risk

gmfood_unequal	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	13.9	26.5	37.8	24.8	20.0	19.3	14.9	10.5	17.1	21.5	16.4	22.9	12.2	9.6	13.2	31.6	8.3	13.7	22.8	26.2	64.3	10.8	19.7	15.4	40.4	27.5	34.1	29.9	13.5	22.5	30.5	27.5	21.4
Tend to agree	42.4	45.0	36.8	34.6	34.6	39.0	28.4	32.7	34.0	30.5	46.5	38.4	33.2	27.0	41.8	30.3	42.9	31.2	35.6	34.9	19.2	23.5	35.7	42.0	35.1	34.1	29.9	11.9	37.9	33.4	32.1	37.2	35.7
Tend to disagree	19.3	13.1	12.3	16.9	14.7	24.9	16.4	11.0	17.0	17.9	16.8	17.5	15.3	16.8	15.9	6.4	23.6	19.6	17.6	16.5	3.3	10.8	15.9	22.1	10.0	7.3	8.2	13.2	27.7	14.4	13.6	12.1	15.2
Totally disagree	12.9	7.1	6.3	16.4	6.1	7.4	20.8	6.4	12.9	15.0	5.7	9.6	4.8	31.0	5.3	7.1	8.9	17.9	9.9	14.6	2.4	10.2	10.5	4.8	8.0	7.1	6.7	24.9	11.0	17.3	13.1	6.8	10.1
DK	11.5	8.3	6.9	7.2	24.6	9.3	19.4	39.4	19.0	15.1	14.6	11.6	34.5	15.7	23.8	24.6	16.4	17.6	14.2	7.8	10.8	44.7	18.2	15.5	6.5	24.0	21.1	20.1	10.0	12.3	10.7	16.4	17.6

GM food is fundamentally unnatural

gmfood_unnatural	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	38.8	53.4	40.0	71.5	37.5	46.6	44.9	26.1	37.0	45.7	37.5	44.8	25.1	59.1	29.6	69.6	38.1	42.2	42.7	55.9	58.8	27.1	36.9	34.2	59.1	37.5	31.3	53.6	31.3	55.0	44.1	53.7	39.0
Tend to agree	29.6	26.9	28.7	17.9	29.5	31.1	28.8	26.4	33.1	28.8	29.7	33.1	31.8	20.0	34.6	21.0	36.3	30.9	30.1	24.9	21.2	27.4	37.6	41.2	24.2	30.6	24.8	9.8	34.0	25.4	29.9	26.2	30.7
Tend to disagree	18.8	12.2	19.0	4.7	14.0	13.0	10.7	12.0	15.8	12.6	21.4	12.7	15.9	12.2	17.1	3.2	17.2	11.7	14.7	10.5	6.4	11.3	9.2	14.5	8.3	6.6	11.6	9.1	24.5	6.3	14.5	10.9	14.5
Totally disagree	5.7	2.6	5.9	1.4	5.6	4.6	5.6	4.6	7.0	6.3	8.3	2.8	4.7	5.0	6.2	.4	3.0	4.7	4.6	3.2	3.1	3.5	5.8	2.5	4.7	5.5	7.4	11.9	5.0	7.1	6.7	5.9	5.7
DK	7.1	4.9	6.5	4.5	13.3	4.7	10.0	30.9	7.1	6.6	3.1	6.6	22.5	3.7	12.5	5.8	5.3	10.6	7.9	5.4	10.4	30.6	10.5	7.5	3.7	19.8	24.9	15.6	5.1	6.1	4.8	3.3	10.1

GM food makes you feel uneasy

gmfood_uneasy	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	22.5	31.6	50.3	68.3	22.5	35.1	25.9	20.1	25.4	31.8	26.8	45.1	15.9	34.8	21.3	64.5	21.5	28.6	18.3	46.4	56.6	14.4	34.1	20.5	53.7	28.2	23.7	51.2	22.9	47.6	36.2	31.8	30.7
Tend to agree	30.3	38.1	27.6	20.3	28.8	28.3	29.3	27.9	31.3	28.7	31.3	32.6	34.5	24.2	28.4	20.4	34.0	32.4	28.4	25.9	22.6	25.7	34.5	38.0	25.4	27.5	29.3	11.0	29.9	29.1	29.7	33.6	29.6
Tend to disagree	25.9	14.4	12.4	5.3	22.7	21.9	19.1	15.6	20.7	16.1	23.7	13.3	19.4	20.1	26.7	7.2	29.3	17.8	22.3	16.3	7.5	12.8	13.2	26.8	13.3	7.2	14.5	9.7	24.1	6.9	15.1	17.2	18.8
Totally disagree	12.4	11.5	6.2	1.7	14.2	11.3	13.8	5.9	12.3	7.8	14.8	3.2	6.9	15.3	11.4	.8	8.5	11.7	8.9	3.9	4.1	7.5	7.9	6.3	5.1	7.4	10.3	11.3	21.4	10.2	12.3	13.4	10.3
DK	8.9	4.5	3.6	4.3	11.8	3.5	12.0	30.4	10.4	15.6	3.4	5.8	23.3	5.6	12.1	7.1	6.7	9.5	22.1	7.5	9.2	39.6	10.3	8.4	2.4	29.7	22.1	16.8	1.8	6.3	6.6	4.1	10.5

GM food is safe for your health and your family's health

gmfood_health	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	7.5	5.5	4.5	3.4	5.1	5.7	3.9	2.5	5.3	5.6	5.3	4.3	4.2	6.0	8.1	2.9	4.1	5.8	2.7	4.2	3.7	2.1	7.3	4.2	3.7	1.6	2.3	5.2	7.1	4.2	4.5	6.2	5.2
Tend to agree	22.9	16.8	13.2	5.3	20.3	15.9	12.0	18.2	16.4	14.4	32.2	13.2	21.2	11.4	25.4	5.1	26.3	17.4	19.8	9.0	4.7	11.8	15.1	23.0	11.7	8.4	9.8	3.9	24.7	7.2	10.9	20.2	17.0
Tend to disagree	33.5	40.5	28.6	18.1	21.0	32.8	26.3	20.1	27.8	21.2	28.2	27.1	26.2	27.7	25.3	17.9	30.0	27.4	27.4	25.6	19.2	21.6	26.6	34.5	28.5	23.7	19.2	12.2	32.9	21.1	27.4	29.3	26.3
Totally disagree	25.4	29.1	44.8	66.6	26.1	36.6	36.0	19.7	34.7	41.9	17.8	46.2	21.5	43.3	13.6	65.1	24.4	34.6	32.3	52.5	59.8	21.8	33.4	23.6	49.7	44.7	42.7	61.3	28.4	58.1	41.9	32.6	33.1
DK	10.7	8.2	8.9	6.6	27.5	9.0	21.8	39.5	15.9	16.9	16.6	9.2	26.9	11.6	27.7	8.9	15.2	14.8	17.9	8.8	12.6	42.8	17.6	14.6	6.4	21.6	26.1	17.3	6.9	9.4	15.3	11.7	18.5

GM food does no harm to the environment

gmfood_environment	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	7.1	3.4	4.5	3.4	5.6	5.4	3.9	2.5	5.9	4.1	3.2	4.7	4.1	2.5	5.1	2.0	7.2	5.1	4.9	6.8	5.3	4.1	6.3	4.6	10.2	5.1	5.2	3.9	4.1	7.3	4.2	4.9	5.0
Tend to agree	23.4	21.1	16.0	10.3	22.1	20.7	11.5	14.8	19.2	15.5	18.9	16.8	23.7	8.4	19.9	9.7	33.9	25.5	27.0	16.1	8.7	16.8	19.4	31.0	17.8	12.3	15.7	3.7	17.4	12.2	11.6	13.0	18.2
Tend to disagree	38.5	37.6	29.1	29.9	20.1	34.0	28.6	18.5	30.8	26.1	35.6	25.3	21.4	32.8	29.8	24.2	26.7	27.7	27.4	28.3	24.1	15.4	24.4	33.7	27.7	23.2	19.3	14.4	41.2	21.8	30.9	29.0	27.8
Totally disagree	17.9	23.6	35.3	44.2	13.3	28.2	35.6	15.1	22.6	30.1	17.7	38.2	11.4	40.6	14.9	37.4	13.6	18.3	16.8	33.7	38.8	14.0	22.7	10.9	32.1	25.6	22.3	56.9	25.3	40.9	33.2	26.7	24.6
DK	13.1	14.3	15.1	12.2	38.9	11.8	20.4	49.1	21.4	24.2	24.6	14.9	39.4	15.7	30.3	26.8	18.6	23.4	23.9	15.1	23.1	49.7	27.3	19.8	12.3	33.9	37.4	21.1	12.1	17.7	20.1	26.5	24.4

The development of GM food should be encouraged

gmfood_encourage	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	6.4	5.4	4.3	2.4	5.5	7.5	2.4	2.7	3.3	3.5	6.7	4.0	2.8	5.0	7.0	1.2	5.5	4.8	4.9	2.7	3.2	2.8	5.9	4.9	3.8	4.2	3.6	2.7	8.7	3.5	5.7	7.7	4.6
Tend to agree	19.4	23.5	15.7	6.9	21.4	19.6	11.4	18.6	16.6	13.5	20.6	17.4	22.0	21.2	28.4	6.9	29.6	19.3	22.0	10.3	6.5	16.9	18.6	27.3	16.2	6.4	7.7	2.5	29.0	8.3	12.2	19.1	18.2
Tend to disagree	34.8	30.2	27.4	24.3	21.9	30.8	28.2	16.1	31.6	23.2	37.8	24.6	25.7	27.7	27.0	23.9	32.5	29.5	28.6	28.2	21.5	19.3	29.8	37.6	26.7	26.7	22.0	11.9	34.6	20.4	30.5	28.3	27.9
Totally disagree	30.3	30.4	44.7	58.2	27.0	32.7	42.8	20.5	32.1	49.0	25.0	45.3	17.3	38.6	17.5	50.4	17.3	32.6	29.4	52.2	55.3	22.7	27.0	15.3	49.1	41.8	38.8	61.8	23.8	57.1	41.0	33.5	33.1
DK	9.1	10.5	7.9	8.1	24.2	9.3	15.2	42.0	16.4	10.9	9.8	8.7	32.2	7.5	20.0	17.6	15.1	13.8	15.0	6.6	13.4	38.3	18.6	14.9	4.3	20.8	27.9	21.1	3.9	10.7	10.6	11.3	16.3

Split ballot B

And now thinking about nanotechnology: Nanotechnology involves working with atoms and molecules to make new particles that are used in cosmetics to make better anti-aging creams, suntan oils for better protection against skin cancer and cleaning fluids to make the home more hygienic. Despite these benefits, some scientists are concerned about the unknown and possibly negative effects of nano particles in the body and in the environment

qb2b

Have you ever heard of nanotechnology before?

heard_nanotech	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Heard	41.0	77.1	64.7	44.7	32.1	73.3	53.9	33.4	37.3	56.5	61.2	47.0	20.9	74.8	47.5	36.7	58.7	46.6	47.0	52.0	35.5	21.7	30.7	34.5	45.5	30.6	25.5	25.3	59.5	45.4	75.7	77.7	46.3
Not heard	59.0	22.9	35.3	55.3	67.9	26.7	46.1	66.6	62.7	43.5	38.8	53.0	79.1	25.2	52.5	63.3	41.3	53.4	53.0	48.0	64.5	78.3	69.3	65.5	54.5	69.4	74.5	74.7	40.5	54.6	24.3	22.3	53.7

qb3b

[IF YES] Have you ever talked about nanotechnology with anyone before today?

talked_nanotech	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	2.9	9.2	9.9	4.2	3.1	5.1	7.4	3.4	4.2	5.1	6.9	3.3	3.3	4.3	3.0	3.3	1.3	2.0	3.7	4.3	4.1	3.6	2.7	3.1	5.4	4.0	3.5	2.0	7.7	3.7	7.5	6.3	5.6
Yes, occasionally	21.6	30.7	27.7	29.9	14.4	27.0	21.5	18.6	37.5	21.6	25.5	28.1	35.0	19.1	22.4	15.9	14.8	21.9	14.9	20.7	26.2	20.2	17.2	18.6	24.3	28.0	23.2	9.0	25.4	21.5	30.2	30.8	24.5
Yes, only once or	18.8	27.3	21.4	35.4	28.0	16.5	15.4	24.0	18.9	14.8	18.5	39.9	26.8	28.4	16.0	22.8	25.8	25.4	25.6	25.0	19.7	17.2	21.1	36.8	26.2	25.0	16.0	17.2	26.2	25.5	27.8	23.7	21.1
No, never	56.7	32.8	40.4	30.5	54.5	51.5	55.7	53.4	38.3	57.0	49.1	28.1	34.9	47.3	57.5	58.0	56.9	50.7	55.8	50.1	49.4	59.1	58.5	41.4	44.1	42.2	52.1	70.5	40.7	47.9	34.3	38.9	48.2
DK			.6					.6	1.1	1.5		.6		.9	1.1		1.2				.5		.5			.8	5.2	1.4		1.4	.2	.3	.6

[IF YES] Have you ever searched for information about nanotechnology?

infosearch_nanotech	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	2.5	6.9	5.7	3.6	3.0	4.4	5.7	3.8	2.4	5.0	4.1	2.5	7.6	3.3	1.7	3.4	1.1	2.2	1.5	2.4	2.9	3.6	3.4	2.3	5.2	1.7	4.8	2.0	3.2	4.8	4.7	3.8	3.9
Yes, occasionally	16.1	15.9	15.4	16.9	10.3	17.5	18.0	13.1	22.4	16.9	18.1	13.2	20.9	13.0	9.5	10.9	8.1	12.0	15.0	14.5	17.4	18.5	8.6	16.1	13.8	17.9	16.9	4.4	15.6	12.1	17.9	17.0	15.0
Yes, only once or	17.7	16.9	13.5	22.0	10.7	13.9	10.3	14.0	20.0	12.8	16.3	24.8	22.0	15.5	9.0	14.7	20.9	16.4	16.0	19.2	14.5	10.9	18.9	24.5	12.8	19.4	11.9	10.6	15.4	16.5	14.9	19.5	14.5
No, never	63.6	60.4	64.6	57.4	76.0	64.3	66.1	69.1	55.2	63.9	61.5	59.5	48.3	67.8	78.7	71.0	69.9	69.4	67.5	63.9	65.2	67.0	67.8	57.2	68.2	59.8	63.7	80.8	65.7	65.0	62.0	59.4	66.1
DK			.8							1.5			1.3	.4	1.1								1.2			1.2	2.7	2.2		1.6	.4	.3	.5

qb4b

For each of the following statements regarding nanotechnology please tell me if you agree or disagree with it.

Nanotechnology is good for the (NATIONALITY) economy

nanotech_economy	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	8.0	9.5	19.0	13.7	9.5	13.5	9.2	5.9	6.0	7.8	12.7	5.7	4.6	15.2	7.5	14.3	13.5	12.5	9.1	3.1	10.4	4.9	6.4	5.0	10.7	8.0	5.4	11.3	6.5	11.5	14.5	12.4	10.0
Tend to agree	42.7	40.8	38.2	37.1	28.2	45.5	34.8	21.9	34.6	31.0	40.9	29.0	27.2	36.1	36.5	36.0	42.6	39.7	41.0	20.3	30.3	15.6	30.3	42.9	38.6	30.5	24.6	13.5	40.1	33.9	36.9	33.8	34.6
Tend to disagree	19.6	19.5	11.8	18.1	10.1	19.4	14.8	5.8	15.4	19.1	17.1	17.6	10.5	13.2	11.9	7.9	15.4	12.9	14.8	27.9	13.2	13.0	9.1	21.7	18.1	10.0	8.0	13.8	22.9	13.7	10.1	17.2	13.1
Totally disagree	5.8	4.8	5.6	10.4	7.5	4.5	7.6	3.0	9.0	6.9	5.4	10.0	4.7	7.4	5.3	6.4	4.7	5.9	5.1	11.8	6.3	8.8	3.8	3.9	14.1	3.5	4.8	14.0	4.5	13.4	5.1	6.4	6.4
DK	23.9	25.4	25.4	20.7	44.8	17.1	33.6	63.5	35.0	35.2	23.9	37.7	53.0	28.1	38.8	35.4	23.8	29.0	29.9	36.9	39.9	57.7	50.4	26.5	18.5	48.0	57.2	47.4	26.0	27.5	33.5	30.2	36.0

Nanotechnology is not good for you and your family

nanotech_family	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	8.5	9.0	8.4	18.4	9.6	5.0	6.8	2.6	10.5	5.2	6.5	10.6	7.5	7.3	6.7	11.0	7.4	5.7	7.5	5.2	8.5	3.9	4.9	5.7	15.0	5.6	4.2	10.9	3.1	10.9	6.9	4.8	7.9
Tend to agree	25.0	24.3	19.8	26.1	16.4	21.9	19.3	14.4	21.1	21.9	15.4	25.0	23.3	17.6	18.0	19.7	27.7	18.6	16.9	11.9	17.1	16.1	16.5	28.0	28.5	18.1	13.7	12.0	17.8	20.1	13.7	19.6	19.3
Tend to disagree	36.6	33.9	31.5	25.6	18.2	44.1	28.2	16.5	22.9	28.2	37.8	18.3	16.6	29.5	27.6	26.7	33.7	31.5	34.1	33.2	24.8	14.4	22.8	31.8	27.8	17.6	14.5	14.4	46.5	23.9	27.3	34.2	26.3
Totally disagree	8.3	11.2	12.4	10.2	14.6	11.9	11.3	6.3	14.3	14.4	12.1	11.6	4.7	17.0	7.4	8.7	6.0	11.4	11.5	12.9	12.2	8.4	7.2	8.5	10.2	9.3	10.7	12.9	8.2	19.0	15.1	19.7	11.0
DK	21.6	21.7	27.9	19.8	41.1	17.0	34.4	60.3	31.1	30.3	28.1	34.5	47.9	28.6	40.3	34.0	25.2	32.8	29.9	36.8	37.4	57.3	48.6	26.0	18.5	49.4	57.0	49.9	24.3	26.0	37.1	21.8	35.5

Nanotechnology helps people in developing countries

nanotech_developing	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	5.4	6.2	4.7	14.7	7.0	8.3	5.3	4.1	7.1	6.5	5.4	7.3	3.8	9.4	5.0	19.3	6.8	10.8	11.8	9.6	10.0	4.5	7.9	4.7	9.6	6.9	5.8	8.4	2.8	8.2	4.1	9.4	6.4
Tend to agree	28.1	32.5	22.6	33.1	25.7	34.1	22.4	19.8	26.0	23.2	23.1	21.1	21.3	28.5	29.9	35.6	34.2	33.0	40.5	33.7	28.2	14.5	28.9	36.4	30.4	24.4	19.9	12.0	34.7	30.8	23.4	27.8	26.2
Tend to disagree	30.5	23.2	27.2	19.1	14.5	27.8	21.7	11.0	20.1	27.7	25.6	19.8	16.7	16.7	16.9	7.2	21.3	14.2	14.1	12.7	12.9	14.4	9.6	23.1	22.8	8.7	9.4	14.2	29.5	16.1	23.4	20.8	19.1
Totally disagree	13.5	14.1	17.9	11.0	11.4	11.0	15.4	3.2	12.1	5.9	18.4	14.5	6.2	14.6	8.0	5.8	7.2	6.7	6.5	5.7	6.1	9.4	2.4	5.5	16.7	4.7	6.9	13.2	8.6	16.6	15.1	14.7	11.4
DK	22.4	24.0	27.6	22.1	41.3	18.9	35.1	61.8	34.8	36.6	27.4	37.3	52.0	30.9	40.3	32.0	30.6	35.2	27.2	38.3	42.7	57.2	51.3	30.3	20.5	55.4	58.0	52.2	24.4	28.4	33.9	27.3	36.9

Nanotechnology is safe for future generations

nanotech_safe	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	4.4	5.6	6.0	9.8	7.1	5.7	6.3	3.5	6.8	7.5	4.3	7.2	2.7	2.5	5.1	7.1	8.4	5.8	10.5	5.2	5.5	1.6	5.0	5.3	11.3	3.7	7.5	8.6	2.1	7.7	5.2	8.3	6.1
Tend to agree	33.3	33.1	20.0	26.8	26.9	43.2	19.0	17.0	28.8	26.5	25.0	18.9	19.7	11.2	26.4	27.0	43.9	30.5	37.7	24.0	21.6	7.6	23.5	40.2	26.0	17.4	20.7	13.1	36.6	28.1	17.6	25.1	24.7
Tend to disagree	29.2	30.2	27.1	25.5	13.9	21.8	26.2	9.5	16.5	25.3	27.4	21.1	18.4	32.9	14.4	13.5	14.4	20.4	16.8	25.2	17.3	15.9	11.8	23.6	21.5	17.2	8.4	13.0	23.1	20.6	23.5	25.8	19.6
Totally disagree	10.4	7.7	13.1	13.6	8.0	6.4	16.1	4.5	9.2	4.8	8.8	16.5	7.5	25.0	5.0	7.0	4.9	6.3	6.1	7.6	9.1	9.9	5.3	5.6	15.7	8.3	6.9	14.7	7.6	13.0	15.2	10.6	9.8
DK	22.8	23.4	33.8	24.3	44.0	22.9	32.3	65.5	38.7	35.9	34.5	36.3	51.7	28.3	49.2	45.4	28.5	37.0	29.0	38.0	46.5	65.0	54.3	25.4	25.5	53.3	56.5	50.6	30.5	30.7	38.4	30.2	39.8

Nanotechnology benefits some people but puts others at risk

nanotech_unequal	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	14.1	20.6	21.8	17.0	11.6	9.0	16.1	3.7	9.5	14.1	17.4	17.0	9.8	15.8	8.3	21.9	7.2	13.1	14.4	17.2	24.1	5.6	12.1	7.9	23.8	12.0	13.2	11.8	8.9	14.9	19.9	20.1	13.8
Tend to agree	42.7	46.1	39.3	41.5	28.6	44.2	45.2	20.2	31.6	38.0	41.5	36.9	24.9	39.8	37.7	33.8	37.5	35.5	40.1	34.3	29.7	26.2	29.1	41.1	38.2	29.8	23.3	12.8	35.9	32.9	37.3	39.6	35.9
Tend to disagree	19.8	11.7	12.4	16.0	11.7	23.6	6.2	10.8	16.5	14.3	13.9	14.5	10.7	8.8	12.2	9.1	22.2	15.4	17.8	13.3	8.6	7.8	8.8	20.9	14.3	7.8	6.8	13.2	20.8	15.1	10.1	12.3	12.2
Totally disagree	4.5	3.4	3.3	5.3	6.9	4.2	5.1	2.6	7.9	4.9	3.2	3.0	4.2	5.8	2.9	2.0	4.6	6.5	5.4	3.2	3.2	2.4	2.3	4.2	4.2	2.3	4.9	10.2	3.8	9.6	4.9	5.9	4.6
DK	18.9	18.2	23.2	20.2	41.2	19.0	27.3	62.7	34.5	28.8	24.0	28.5	50.4	29.8	38.8	33.1	28.5	29.4	22.3	32.0	34.4	57.9	47.6	25.9	19.5	48.0	51.8	52.0	30.6	27.6	27.9	22.2	33.6

Nanotechnology is fundamentally unnatural

nanotech_unnatural	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	20.2	22.4	13.6	30.5	21.1	10.9	26.5	4.1	14.9	16.9	19.2	20.5	19.6	22.0	11.8	22.4	10.5	11.3	12.9	19.8	24.4	11.9	10.1	12.1	37.7	7.8	11.2	17.5	8.6	23.9	19.8	19.6	16.5
Tend to agree	33.4	30.9	20.0	28.0	22.8	32.1	36.0	20.8	28.1	42.2	26.8	24.4	21.5	24.6	25.9	17.3	31.1	25.1	31.5	23.8	24.9	25.5	23.8	41.5	28.4	24.0	15.8	11.4	32.3	32.4	29.8	24.2	26.1
Tend to disagree	23.8	22.9	28.8	20.0	16.1	29.5	9.3	14.7	19.3	11.3	24.4	21.6	9.5	18.1	21.3	21.2	34.7	23.5	26.0	16.8	9.5	7.5	17.8	20.0	9.3	17.1	9.5	10.2	29.4	14.7	14.8	19.3	19.6
Totally disagree	6.7	8.1	11.7	4.5	10.3	10.7	4.3	4.7	7.8	6.5	11.3	6.2	2.3	16.3	6.2	6.0	3.4	10.0	9.3	4.8	3.1	1.7	3.7	3.9	7.1	4.4	4.0	9.2	4.7	6.2	11.4	19.3	7.4
DK	16.0	15.8	25.8	17.1	29.7	16.8	23.9	55.7	29.7	23.2	18.3	27.3	47.0	19.0	34.8	33.1	20.3	30.1	20.3	34.7	38.0	53.4	44.6	22.5	17.5	46.8	59.6	51.7	25.0	22.7	24.2	17.7	30.5

Nanotechnology makes you feel uneasy

nanotech_uneasy	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	10.2	11.8	16.7	26.2	10.6	8.1	11.7	6.6	6.9	9.9	14.1	18.1	9.8	5.9	9.0	20.9	4.0	5.8	5.1	7.8	13.0	5.2	8.3	7.9	24.9	4.4	5.7	14.0	1.6	17.0	13.3	5.7	10.7
Tend to agree	26.0	22.6	21.3	31.6	18.5	19.5	18.3	18.6	22.3	24.2	19.2	32.3	21.1	16.9	22.7	24.4	19.4	16.0	17.3	15.7	18.6	15.0	19.4	23.4	27.4	14.6	14.7	9.5	16.2	27.5	20.8	17.7	20.7
Tend to disagree	33.7	29.8	28.0	26.0	24.6	32.4	26.8	16.4	24.1	21.9	29.2	21.9	17.3	19.5	24.5	24.5	41.7	29.6	33.9	27.0	23.5	11.6	24.8	37.5	20.7	20.1	14.3	13.1	38.5	20.0	28.5	25.9	25.7
Totally disagree	12.5	22.2	17.4	4.0	24.9	27.6	22.7	6.3	18.0	19.7	23.6	9.6	5.7	40.9	14.5	12.4	17.1	24.9	15.5	16.6	12.0	7.0	9.2	10.2	14.4	9.9	10.2	10.8	33.9	15.3	20.1	37.5	17.1
DK	17.7	13.6	16.6	12.3	21.5	12.5	20.5	52.1	28.7	24.4	13.9	18.0	46.1	16.9	29.2	17.8	17.8	23.7	28.2	32.9	32.9	61.1	38.3	21.0	12.7	50.9	55.1	52.6	9.8	20.2	17.4	13.1	25.9

Nanotechnology is safe for your health and your family's health

nanotech_health	Country																															
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	3.8	5.3	6.5	6.0	5.3	5.5	3.3	1.0	3.4	5.8	4.1	4.7	1.2	10.7	3.5	3.8	4.8	5.8	7.5	6.9	3.7	5.3	5.2	2.6	6.3	2.7	2.4	5.6	3.2	5.8	5.7	11.2	4.5
Tend to agree	27.9	29.9	19.6	23.9	22.8	42.1	12.6	16.2	24.6	16.5	26.9	20.7	16.5	16.7	24.9	23.4	42.5	31.0	32.3	24.8	17.9	10.3	23.7	38.4	25.5	18.1	15.2	9.8	35.4	21.6	17.8	24.2	22.3
Tend to disagree	35.6	32.7	31.1	28.2	14.4	23.9	28.1	11.1	19.9	32.9	27.1	25.2	18.3	27.8	17.7	19.5	17.6	20.8	19.2	20.8	19.7	10.9	11.7	27.2	25.9	16.6	11.7	12.4	24.3	20.2	28.8	26.1	21.9
Totally disagree	9.9	10.4	12.9	20.8	12.6	8.3	18.9	6.2	12.3	9.4	10.0	17.9	12.5	13.1	5.4	16.0	5.8	8.3	7.3	10.2	12.8	9.2	5.6	6.8	20.3	9.5	8.8	18.0	6.6	22.8	13.5	12.8	11.4
DK	22.8	21.7	29.9	21.1	44.9	20.3	37.1	65.6	39.8	35.4	31.9	31.5	51.5	31.7	48.5	37.4	29.3	34.1	33.7	37.4	46.0	64.2	53.8	25.0	22.0	53.1	61.9	54.1	30.6	29.5	34.3	25.8	39.9

Nanotechnology does no harm to the environment

nanotech_environmen	Country																															
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	2.4	4.8	4.8	7.7	3.3	4.4	2.8	1.1	4.2	3.1	2.5	5.2	2.0	4.5	3.1	3.6	7.4	5.8	8.1	4.3	4.0	3.1	4.0	4.2	9.4	3.4	2.9	6.2	.7	5.7	5.0	6.7	3.9
Tend to agree	23.3	22.9	17.2	22.7	18.8	33.7	13.7	15.5	21.5	24.2	15.9	21.1	14.3	13.5	16.0	17.9	39.2	25.2	30.1	19.3	14.0	8.7	20.9	33.2	20.8	18.0	15.6	6.6	15.8	20.3	12.5	14.9	18.9
Tend to disagree	39.8	34.7	30.0	28.1	17.1	29.6	28.2	9.6	18.9	21.4	33.6	23.3	18.3	33.4	20.9	17.4	19.2	23.3	21.5	26.5	20.7	12.4	15.5	30.4	25.9	14.9	9.8	14.5	38.7	19.9	26.3	28.9	23.0
Totally disagree	11.0	10.6	13.0	16.0	9.9	7.0	13.8	4.7	10.5	12.0	10.5	14.5	7.3	13.0	5.6	10.1	5.2	6.4	6.0	9.3	9.3	5.5	5.9	6.3	18.2	6.5	7.4	16.0	5.6	19.6	15.6	10.4	9.9
DK	23.5	27.1	35.0	25.4	50.9	25.3	41.5	69.1	45.0	39.3	37.5	35.9	58.1	35.5	54.5	51.1	29.0	39.2	34.2	40.6	51.9	70.3	53.7	25.9	25.7	57.2	64.4	56.7	39.2	34.6	40.6	39.2	44.2

Nanotechnology should be encouraged

nanotech_encourage	Country																															
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	7.7	15.7	12.6	8.9	8.4	17.2	6.8	4.6	6.2	8.6	9.8	6.1	2.0	16.3	9.5	9.8	15.2	10.1	12.2	11.4	7.3	5.5	6.5	7.0	9.6	6.6	5.6	8.8	16.0	9.6	11.4	21.3	8.8
Tend to agree	35.7	32.1	33.0	29.4	28.6	47.2	34.0	17.2	28.7	28.1	31.3	27.3	22.1	33.8	28.8	37.2	42.6	34.3	39.6	33.2	29.3	14.2	30.1	39.3	32.2	21.6	20.7	9.4	52.4	27.3	32.8	32.5	30.7
Tend to disagree	25.4	23.2	18.8	27.8	11.6	13.1	17.0	6.6	17.7	25.9	25.2	22.3	15.3	18.6	15.7	6.6	14.7	17.2	17.6	15.9	13.7	8.5	8.2	22.9	23.2	10.4	7.9	11.7	11.8	15.6	18.0	17.1	16.2
Totally disagree	9.6	7.0	10.3	13.1	10.6	5.4	10.1	4.1	11.2	6.8	10.3	13.9	8.2	6.5	5.7	7.6	2.7	6.3	6.7	6.8	7.6	9.5	4.4	5.8	15.9	8.4	6.9	14.6	1.9	13.4	8.1	8.5	8.7
DK	21.7	21.9	25.3	20.8	40.8	17.1	32.2	67.5	36.2	30.7	23.3	30.4	52.3	24.9	40.4	38.8	24.8	32.2	23.9	32.6	42.0	62.2	50.7	24.9	19.0	53.0	58.9	55.4	17.9	34.2	29.7	20.5	35.6

Let's speak now about cloning farm animals. Cloning may be used to improve some characteristics of farmed animals in food production. Due to the high cost of cloning, this technique would mainly be used to produce cloned animals which will reproduce with non-cloned animals. Their offspring would then be used to produce meat and milk of higher quality. However, critics have raised questions about ethics of animal cloning.

qb5b

Have you ever heard of animal cloning in food production before?

heard_animalcloning	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Heard	74.6	81.3	87.4	84.5	73.7	84.4	76.5	61.4	62.8	78.6	86.8	71.1	58.5	87.0	80.8	72.7	71.2	67.4	76.4	70.0	56.6	53.5	69.5	65.9	74.7	70.0	53.9	54.8	41.9	78.5	75.5	73.8	74.9
Not heard	25.4	18.7	12.6	15.5	26.3	15.6	23.5	38.6	37.2	21.4	13.2	28.9	41.5	13.0	19.2	27.3	28.8	32.6	23.6	30.0	43.4	46.5	30.5	34.1	25.3	30.0	46.1	45.2	58.1	21.5	24.5	26.2	25.1

qb6b

[IF YES] Have you ever talked about animal cloning in food production with anyone before today?

talked_animalcloning	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	4.0	9.0	12.8	3.3	4.0	4.6	5.1	2.1	5.5	6.6	9.3	3.9	1.9	5.6	3.9	2.2	1.4	2.2	2.6	1.5	2.9	4.6	2.7	3.3	5.0	.6	.6	2.4	4.9	9.1	10.3	5.0	5.8
Yes, occasionally	19.0	36.0	37.5	37.8	20.0	31.8	29.0	18.2	36.7	35.8	30.9	38.3	32.0	34.8	26.0	17.6	23.4	25.5	14.5	25.2	26.3	28.4	17.2	23.3	34.9	26.9	22.3	9.2	27.4	28.9	37.0	38.6	28.9
Yes, only once or	20.9	26.6	20.4	29.5	31.1	26.5	16.1	28.4	25.0	22.0	22.2	31.8	28.9	29.7	20.4	33.9	29.9	21.8	35.5	21.8	20.0	9.0	26.3	30.4	26.9	29.8	25.4	17.4	28.8	25.0	28.3	25.0	23.8
No, never	54.9	28.2	29.1	29.2	44.4	37.1	49.4	49.0	31.1	34.0	36.9	25.4	36.5	29.2	49.5	45.4	44.8	50.2	47.4	50.4	49.9	57.9	53.1	43.0	32.9	40.6	47.8	68.0	38.9	36.8	24.5	30.3	40.8
DK	1.2	.2	.1	.2	.5		.3	2.3	1.7	1.6	.6	.6	.6	.7	.2	1.0	.4	.3		1.2	.9		.8		.3	2.2	3.8	3.1		.2		1.1	.7

[IF YES] Have you ever talked about animal cloning in food production with anyone before today?

infosearch_animalclon	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	2.0	3.6	3.0	2.4	1.3	3.3	3.2	1.3	2.0	2.7	3.5	2.9	1.0	1.6	3.7	1.7	.9	.9	.7	.8	1.6	2.4	1.1	1.1	3.0	.3	.8	.8	1.9	4.5	3.8	1.3	2.4
Yes, occasionally	8.6	11.1	13.6	18.7	11.2	15.7	10.9	7.6	22.5	20.3	13.6	11.7	11.3	13.4	8.8	8.8	9.8	8.8	7.6	8.9	12.7	12.4	10.2	13.2	13.0	8.7	10.2	3.7	4.7	15.1	15.0	11.5	12.6
Yes, only once or	11.9	14.9	14.0	28.0	9.9	19.7	8.3	9.6	14.5	14.3	14.2	18.9	19.0	17.9	6.5	14.3	13.8	9.7	15.6	12.1	9.6	8.0	11.2	14.6	17.0	12.8	15.0	7.6	7.8	10.4	16.6	11.3	12.4
No, never	77.0	70.1	69.1	50.6	77.3	61.1	77.6	79.0	60.1	62.7	68.7	65.5	68.1	66.8	80.8	74.2	75.5	80.2	76.1	77.2	74.5	77.2	77.2	71.1	66.7	76.0	70.4	84.8	85.5	69.5	63.9	75.5	72.2
DK	.4	.2	.3	.2	.3	.1		2.5	1.0			1.0	.6	.4	.2	1.0		.3		1.0	1.6		.3		.3	2.3	3.7	3.1		.5	.7	.4	.5

qb7b

For each of the following statements regarding animal cloning in food production please tell me if you agree or disagree with it.

Animal cloning in food production is good for the (NATIONALITY) economy

animalcloning_econor	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	3.5	8.4	6.2	6.3	5.9	3.8	3.0	1.1	3.6	1.4	5.0	1.2	2.3	5.3	4.8	3.9	3.4	3.5	2.3	1.4	4.1	1.2	2.3	2.5	1.9	5.0	3.2	9.9	2.5	3.6	3.2	6.5	4.2
Tend to agree	18.8	30.0	20.1	21.8	26.2	15.3	12.3	14.3	17.7	9.0	21.7	11.2	22.4	18.9	23.7	17.2	25.4	18.5	20.9	10.4	18.3	17.3	9.7	22.9	12.3	17.5	14.2	13.6	13.4	8.5	10.6	21.0	18.7
Tend to disagree	38.6	27.7	27.2	27.5	18.6	35.6	30.6	25.5	27.6	32.2	30.4	32.9	24.8	22.2	30.8	21.0	36.1	28.7	33.2	31.9	25.0	20.8	31.5	41.9	27.2	27.1	18.3	20.4	27.2	16.5	26.9	22.6	28.1
Totally disagree	30.2	19.7	35.4	35.9	18.6	38.7	42.5	26.6	34.5	46.2	33.9	48.0	18.7	43.6	24.2	32.2	24.3	34.3	29.3	38.6	28.0	19.8	31.2	23.6	52.3	27.1	32.0	29.3	50.9	62.0	53.4	36.0	31.7
DK	9.0	14.2	11.1	8.4	30.7	6.5	11.5	32.5	16.6	11.3	9.1	6.6	31.8	10.1	16.5	25.7	10.7	14.9	14.3	17.7	24.5	40.9	25.4	9.1	6.3	23.3	32.3	26.8	6.0	9.3	5.9	13.9	17.2

Animal cloning in food production is not good for you and your family

animalcloning_family	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	23.3	26.2	42.8	48.6	18.9	32.9	37.5	20.8	29.8	31.4	26.7	42.1	22.3	42.8	18.2	57.6	22.6	27.6	27.7	31.4	28.1	13.6	26.8	17.3	46.7	24.6	22.3	31.7	41.8	44.5	43.4	34.8	29.8
Tend to agree	31.8	34.8	26.5	26.3	26.7	27.6	28.2	28.9	26.7	28.0	23.2	27.4	30.5	20.0	31.8	18.3	28.1	24.3	30.9	27.2	22.3	27.9	24.6	32.2	23.5	23.9	17.5	14.7	20.7	19.8	21.6	25.2	27.0
Tend to disagree	27.0	20.7	11.6	12.1	14.3	20.0	11.7	11.8	15.6	15.7	26.6	12.2	11.7	16.8	20.6	8.8	27.5	19.3	20.7	18.5	13.5	15.6	14.3	28.1	13.8	16.9	15.6	14.9	24.5	8.3	11.6	18.2	15.9
Totally disagree	9.7	7.1	7.2	7.7	13.8	11.9	10.5	7.3	16.0	14.8	12.2	13.3	9.2	10.6	8.8	7.3	10.6	10.6	7.4	6.2	14.6	6.8	11.2	14.0	12.3	10.2	18.2	14.8	5.6	18.7	14.4	8.2	11.1
DK	8.2	11.2	11.9	5.2	26.4	7.6	12.2	31.1	11.9	10.0	11.4	5.0	26.3	9.7	20.6	8.0	11.2	18.1	13.4	16.6	21.5	36.1	23.0	8.5	3.6	24.5	26.4	23.9	7.3	8.7	9.0	13.6	16.2

Animal cloning in food production helps people in developing countries

animalcloning_develo	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	7.7	9.4	7.1	9.2	11.5	6.6	3.8	3.9	6.0	2.9	5.7	4.9	4.3	4.1	7.3	9.9	8.5	9.9	7.7	7.8	6.2	4.2	4.6	6.4	6.9	8.0	4.7	12.4	8.4	6.6	3.5	10.4	6.6
Tend to agree	28.8	31.9	21.4	31.4	26.4	28.0	18.9	27.0	22.5	20.2	23.0	20.6	26.9	21.2	32.7	27.7	35.6	31.4	28.1	31.2	27.5	18.7	17.9	29.6	23.7	26.6	18.1	11.5	25.8	20.1	18.2	33.7	24.2
Tend to disagree	30.8	26.5	23.7	27.0	17.3	30.4	25.5	16.3	26.2	31.5	27.4	35.4	23.0	19.0	22.4	16.5	23.6	20.4	27.9	22.3	17.7	15.2	25.5	33.1	27.7	12.7	18.9	20.1	25.6	18.1	21.7	17.3	23.9
Totally disagree	23.1	18.3	36.3	25.1	17.6	24.8	36.2	13.0	26.6	34.0	33.4	27.6	14.3	44.3	18.1	15.9	16.4	18.5	20.6	21.2	17.1	16.2	20.3	16.4	34.2	13.5	21.4	24.0	32.2	39.2	48.4	25.4	25.8
DK	9.7	13.8	11.5	7.3	27.2	10.1	15.7	39.8	18.7	11.3	10.5	11.5	31.5	11.4	19.5	29.9	15.9	19.9	15.7	17.5	31.4	45.6	31.7	14.4	7.5	39.1	36.9	32.0	8.2	16.1	8.2	13.2	19.5

Animal cloning in food production is safe for future generations

animalcloning_safe	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	2.8	3.2	2.4	2.2	4.9	1.5	1.6	1.0	3.7	1.6	3.7	6.1	1.2	2.9	4.0	1.7	3.8	4.6	3.8	3.0	3.2	1.1	2.0	3.8	3.4	3.7	3.5	8.0	1.7	3.4	2.6	3.3	3.1
Tend to agree	18.1	21.7	10.7	13.6	22.9	12.8	5.9	14.8	15.5	11.2	13.9	10.5	15.8	6.2	18.1	10.5	26.7	19.0	19.4	10.2	5.7	12.0	10.9	20.0	15.3	12.1	11.9	7.6	20.0	9.0	8.2	17.8	14.1
Tend to disagree	40.5	37.3	30.2	26.4	19.7	40.0	29.2	17.5	26.3	35.5	34.2	30.7	30.5	24.4	29.6	19.8	31.1	31.9	36.2	31.7	23.6	16.6	30.7	40.4	27.3	27.0	21.9	21.8	30.1	19.5	26.7	28.3	28.6
Totally disagree	28.9	25.0	44.9	50.1	24.3	37.7	49.6	22.2	35.3	40.9	34.0	42.2	20.3	58.0	21.1	42.5	23.8	24.4	26.7	37.3	38.4	21.3	30.7	23.3	46.4	26.8	29.9	35.9	35.8	54.3	51.3	32.4	34.6
DK	9.6	12.7	11.8	7.6	28.3	8.0	13.7	44.6	19.1	10.7	14.2	10.4	32.2	8.6	27.2	25.4	14.6	20.0	13.8	17.8	29.2	49.0	25.7	12.5	7.6	30.4	32.7	26.7	12.4	13.9	11.3	18.2	19.6

Animal cloning in food production benefits some people but puts others at risk

animalcloning_unequa	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	13.3	19.2	37.1	24.4	18.5	23.7	12.5	7.1	16.5	19.9	22.6	23.4	15.2	8.9	14.4	32.1	10.4	15.4	21.8	24.8	41.9	8.9	18.0	13.3	38.4	26.2	26.5	24.4	11.7	25.5	27.1	25.3	20.5
Tend to agree	40.8	41.9	33.4	44.2	33.5	39.0	31.0	31.0	29.7	34.8	34.2	40.8	32.2	27.5	37.4	36.4	35.1	35.9	40.2	36.1	26.9	29.3	32.4	45.9	33.6	34.6	28.6	18.9	28.2	30.6	32.5	35.4	33.7
Tend to disagree	21.6	18.9	10.6	14.3	12.2	18.3	12.9	10.7	19.4	18.0	17.9	15.5	13.5	16.0	19.2	7.6	26.3	15.0	19.9	12.2	6.3	6.7	13.4	22.5	11.7	8.3	6.4	12.8	23.2	10.7	10.9	14.4	14.8
Totally disagree	16.4	11.0	8.4	9.6	9.5	11.1	27.3	7.8	16.7	18.1	12.6	10.9	7.1	31.9	7.4	6.1	9.1	15.5	8.3	10.2	4.6	6.8	10.9	8.9	9.9	5.2	11.4	13.6	22.5	17.0	17.2	10.1	12.8
DK	7.9	8.9	10.5	7.5	26.3	7.9	16.3	43.4	17.7	9.2	12.8	9.3	32.0	15.6	21.6	17.8	19.0	18.2	9.8	16.6	20.4	48.3	25.3	9.4	6.4	25.8	27.2	30.3	14.3	16.2	12.3	14.9	18.1

Animal cloning in food production is fundamentally unnatural

animalcloning_unnatu	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	56.4	63.9	59.9	64.0	44.1	59.4	63.6	34.4	38.7	51.9	67.0	52.5	32.8	80.5	43.9	70.4	47.5	44.2	54.6	56.8	49.4	26.0	46.5	42.1	64.5	32.8	34.2	37.6	61.3	61.7	68.4	74.3	50.6
Tend to agree	25.3	25.2	24.1	23.8	23.8	25.2	21.2	27.6	28.9	31.3	17.0	32.3	30.0	8.1	31.6	14.1	29.1	27.0	26.0	23.4	26.8	33.4	27.9	35.9	20.1	30.3	21.9	15.6	24.9	21.2	22.1	13.2	25.7
Tend to disagree	8.9	5.4	6.5	6.6	9.8	6.6	3.4	9.0	13.5	8.1	7.9	7.4	10.9	4.6	9.7	5.0	14.7	12.0	10.3	6.5	3.7	5.0	6.7	11.6	6.3	8.8	9.1	8.7	6.7	3.5	2.6	6.9	8.4
Totally disagree	4.5	1.8	3.6	2.2	6.7	4.6	5.6	2.7	8.4	3.5	5.1	4.2	3.8	4.0	4.5	.4	2.5	6.3	4.5	2.9	4.4	2.6	5.3	5.5	5.9	5.6	9.7	12.5	2.6	6.9	4.7	2.8	5.4
DK	4.9	3.7	5.8	3.5	15.6	4.2	6.1	26.3	10.4	5.2	3.0	3.5	22.5	2.8	10.3	10.1	6.1	10.4	4.6	10.4	15.7	33.0	13.5	4.8	3.2	22.5	25.1	25.6	4.5	6.7	2.2	2.8	9.9

Animal cloning in food production makes you feel uneasy

animalcloning_uneasy	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	36.3	40.8	58.7	62.4	21.7	39.2	39.9	27.6	27.5	38.0	50.1	56.9	26.5	58.2	37.5	65.6	30.2	29.2	31.6	48.0	41.6	23.6	38.1	30.2	58.3	28.6	23.9	32.4	50.1	54.7	55.9	36.3	38.9
Tend to agree	31.5	34.8	23.9	27.5	34.6	31.0	27.1	30.6	29.5	35.4	24.8	26.1	31.1	21.9	28.2	20.5	30.6	27.4	33.7	24.9	30.0	23.8	28.0	34.2	27.1	28.2	27.0	17.0	24.5	21.9	26.9	29.7	28.3
Tend to disagree	19.4	11.4	8.2	7.5	16.6	16.7	14.8	9.9	18.6	11.9	14.6	7.9	13.7	8.6	14.4	6.5	24.1	16.7	18.3	12.2	10.1	10.7	15.1	22.8	8.9	13.1	13.1	11.3	14.1	6.1	7.2	12.6	14.2
Totally disagree	7.8	8.7	5.3	.7	14.4	9.5	12.6	3.9	11.9	9.1	8.3	5.7	6.7	8.6	10.2	3.3	8.2	13.6	6.4	4.6	3.7	3.1	5.8	6.9	4.1	6.1	12.0	13.4	7.8	9.3	7.1	17.1	9.1
DK	4.9	4.3	3.8	1.9	12.8	3.7	5.6	27.9	12.5	5.5	2.2	3.4	22.0	2.7	9.7	4.1	6.8	13.0	10.0	10.3	14.7	38.7	12.9	5.9	1.6	23.9	23.9	26.0	3.5	8.1	2.9	4.3	9.5

Animal cloning in food production is safe for your health and your family's health

animalcloning_health	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	5.3	5.3	2.4	4.1	1.7	4.1	4.2	1.1	2.7	5.6	3.1	3.7	2.0	7.2	3.2	3.3	3.0	9.7	5.0	4.0	2.5	.3	3.4	3.4	2.4	3.6	3.9	4.4	7.6	4.5	5.0	6.5	3.2
Tend to agree	16.3	19.7	11.0	11.3	18.2	12.9	5.9	10.1	16.5	15.1	17.3	12.0	14.3	11.2	17.3	6.0	24.5	22.3	19.1	14.6	6.2	9.0	10.1	18.6	11.2	11.2	9.5	8.3	21.0	5.7	7.4	15.4	13.5
Tend to disagree	37.3	34.9	25.3	24.0	21.7	36.3	25.8	19.3	22.9	23.7	27.8	23.1	28.1	22.8	27.9	17.3	29.5	27.6	26.1	23.6	25.2	21.0	26.4	37.5	24.8	20.8	19.2	18.4	22.0	14.6	21.9	27.7	25.5
Totally disagree	30.0	27.9	46.5	54.5	28.6	37.7	43.9	25.9	39.3	42.9	33.8	53.9	28.2	45.0	24.9	60.7	26.3	23.9	33.8	38.9	42.7	26.3	34.4	29.3	53.7	31.3	37.1	40.9	38.1	63.8	51.4	33.8	37.0
DK	11.1	12.2	14.8	6.1	29.7	8.9	20.2	43.5	18.5	12.7	18.0	7.3	27.4	13.8	26.8	12.7	16.8	16.6	15.9	19.0	23.4	43.5	25.7	11.3	7.9	33.0	30.3	27.9	11.2	11.4	14.2	16.6	20.8

Animal cloning in food production does no harm to the environment

animalcloning_environ	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	5.1	8.2	5.9	4.3	6.6	4.7	3.7	1.2	4.8	3.6	6.3	6.5	2.2	6.6	5.3	3.4	6.5	8.1	6.9	4.2	5.0	.5	5.4	3.0	8.9	4.7	4.4	7.9	2.8	8.8	5.2	8.6	5.3
Tend to agree	23.7	25.5	15.4	12.7	21.2	20.5	12.8	11.7	20.5	15.8	21.0	14.2	18.7	14.3	22.2	11.2	39.5	22.9	26.8	19.4	11.6	13.6	13.0	26.6	17.7	13.0	13.0	10.0	19.8	11.0	12.9	15.9	18.1
Tend to disagree	36.4	33.3	25.1	31.4	18.1	35.4	22.5	19.2	22.7	28.6	28.0	31.6	22.3	25.5	24.5	16.5	24.5	25.0	25.7	25.4	22.9	15.1	21.7	34.7	25.2	17.9	16.0	18.2	31.2	19.2	22.8	24.1	23.7
Totally disagree	20.6	17.6	32.7	40.0	13.6	27.3	33.3	16.3	27.5	30.5	25.2	30.7	15.2	36.1	15.8	31.4	11.5	18.4	16.4	27.5	29.9	13.0	26.4	21.3	34.9	20.3	24.5	33.2	30.8	39.3	39.7	25.4	25.1
DK	14.2	15.4	20.9	11.5	40.4	12.0	27.7	51.7	24.5	21.4	19.5	17.0	41.6	17.4	32.1	37.4	18.0	25.5	24.3	23.5	30.6	57.7	33.5	14.4	13.3	44.1	42.0	30.7	15.5	21.7	19.4	26.0	27.7

Animal cloning in food production should be encouraged

animalcloning_encour	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	2.4	3.3	2.5	2.6	4.3	3.8	1.6	1.0	3.1	3.5	2.0	3.1	2.5	1.2	6.2	.8	4.0	3.9	3.8	1.7	2.5	.3	2.6	3.6	1.4	3.7	2.0	5.4	1.1	1.9	3.5	4.2	3.2
Tend to agree	14.5	14.9	8.0	9.7	19.1	13.3	3.8	9.6	16.7	6.4	12.5	10.0	14.6	8.4	14.5	10.7	24.9	15.3	20.7	9.8	6.5	11.8	9.8	19.0	14.5	11.2	9.9	7.3	13.3	4.8	7.0	11.5	12.2
Tend to disagree	33.8	28.0	22.1	29.3	19.3	29.6	24.5	21.4	24.3	25.9	28.4	26.9	28.7	18.5	33.4	22.6	34.1	26.8	26.0	26.9	22.9	14.2	25.9	38.0	23.0	22.8	19.1	21.9	23.1	16.1	17.9	25.2	25.5
Totally disagree	42.1	45.5	60.0	51.6	31.8	45.3	60.5	29.0	39.4	53.8	51.1	52.9	24.5	67.6	32.3	46.2	26.3	37.6	40.1	49.1	44.7	29.7	40.1	28.4	57.2	33.8	39.3	34.5	56.2	64.6	67.6	51.1	44.5
DK	7.2	8.4	7.4	6.8	25.4	8.0	9.6	39.0	16.4	10.4	6.0	7.1	29.6	4.3	13.6	19.7	10.7	16.4	9.5	12.5	23.3	44.0	21.5	11.0	3.8	28.5	29.7	30.9	6.3	12.7	4.1	7.9	14.7

Split ballot A
qb5a
Let's speak now about regenerative medicine which is a new field of medicine and clinical applications that focuses on the repairing, replacing or growing of cells, tissues, or organs.
Stem cell research involves taking cells from human embryos that are less than 2 weeks old. They will never be transplanted into a woman's body but are used to grow new cells which then can be used to treat diseases in any part of the body. Would you say that...?

stemcell_embryonic	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Fully approve and do not think that special laws are necessary	13.3	12.7	9.2	8.1	16.0	11.8	11.7	5.8	16.0	12.4	10.5	5.9	5.4	7.0	14.6	5.3	8.0	9.5	10.5	10.5	11.5	5.5	12.9	9.2	2.1	8.7	12.4	11.0	9.4	8.6	7.3	8.2	12.1
Approve as long as this is regulated by strict laws	59.9	62.8	38.7	53.2	57.4	53.0	59.1	49.1	48.5	45.0	63.0	31.8	58.1	63.7	60.9	45.7	43.2	57.5	56.4	45.7	43.0	43.0	36.5	38.6	45.5	42.1	47.2	31.2	66.5	39.8	47.4	64.2	50.6
Do not approve except under very special circumstances	16.7	15.8	26.5	20.3	11.1	18.2	15.7	16.4	18.3	20.4	14.3	26.5	16.4	21.3	9.0	20.7	25.7	11.2	18.7	22.0	18.6	12.1	16.7	25.4	23.7	21.0	10.5	12.0	16.9	22.8	24.7	17.2	17.3
Do not approve under any circumstances	8.7	6.1	22.0	14.7	9.6	12.8	7.8	16.1	10.4	15.8	10.0	31.3	10.2	5.6	10.0	20.7	21.1	10.6	11.0	14.4	16.4	24.4	21.2	23.2	24.9	9.4	10.0	18.9	5.5	18.7	16.4	7.9	13.5
DK	1.3	2.5	3.6	3.7	5.9	4.2	5.8	12.5	6.8	6.4	2.2	4.5	9.9	2.4	5.4	7.5	1.9	11.1	3.3	7.4	10.5	15.0	12.7	3.7	3.7	18.7	19.9	26.9	1.7	10.1	4.2	2.5	6.5

qb6a
Now suppose scientists were able to use stem cells from other cells in the body, rather than from embryos. Would you say that...?

stemcell_nonembryon	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Fully approve and do not think that special laws are necessary	16.1	14.3	12.9	8.0	18.6	17.6	14.8	9.7	16.5	14.3	15.2	7.6	6.8	14.8	17.4	6.9	11.4	12.0	7.2	12.7	14.0	5.6	16.9	12.7	4.3	7.5	13.4	10.9	11.4	8.7	10.6	11.9	14.7
Approve as long as this is regulated by strict laws	59.9	66.2	46.7	62.7	59.8	60.9	59.1	56.6	52.1	56.7	68.6	39.3	57.0	67.1	63.3	47.4	43.2	54.3	63.0	47.7	44.2	53.9	36.8	49.2	48.6	46.1	44.9	34.5	70.0	45.3	52.8	73.2	53.9
Do not approve except under very special circumstances	15.4	12.7	22.7	16.2	8.8	11.4	11.9	11.8	17.5	12.1	9.7	28.6	16.6	12.1	7.0	26.9	30.9	12.4	19.6	20.7	19.9	13.2	15.8	21.2	24.1	17.3	9.5	11.4	11.0	20.9	20.4	9.4	15.0
Do not approve under any circumstances	6.7	4.3	13.2	9.2	6.8	5.2	7.7	10.0	8.1	8.6	3.9	20.9	6.9	2.8	5.9	9.5	12.5	8.7	6.4	11.2	11.8	9.9	16.5	11.5	20.6	8.5	7.7	15.7	4.0	13.8	11.4	2.6	9.2
DK	1.9	2.5	4.5	3.9	6.1	4.9	6.5	11.9	5.8	8.3	2.5	3.8	12.7	3.2	6.3	9.3	2.0	12.6	3.8	7.6	10.1	17.5	14.0	5.4	2.5	20.5	24.6	27.6	3.6	11.4	4.7	2.8	7.2

qb7a
Scientists can put human genes into animals that will produce organs and tissues for transplant into humans, such as pigs for transplants or to replace pancreatic cells to cure diabetes. Would you say that...?

xeno_organs	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Fully approve and do not think that special laws are necessary	13.4	11.4	7.1	4.9	14.7	8.0	11.6	6.2	15.3	11.9	7.6	9.1	6.8	10.3	12.7	4.7	8.9	11.4	9.5	8.7	12.0	6.0	11.5	10.9	3.1	7.2	14.1	9.3	7.7	6.8	10.1	9.4	11.2
Approve as long as this is regulated by strict laws	57.7	60.2	39.9	38.4	52.0	39.6	52.6	53.5	43.0	52.1	58.8	28.0	53.1	58.5	52.5	35.2	42.3	44.7	54.3	41.5	35.8	45.4	36.3	44.7	41.7	42.0	39.7	38.1	60.6	39.1	41.5	61.5	46.5
Do not approve except under very special circumstances	13.8	18.2	24.7	25.2	11.8	24.1	16.0	11.2	21.2	17.2	18.3	27.3	17.1	17.5	12.5	21.4	29.1	15.8	19.5	21.6	19.8	10.5	20.0	25.4	22.4	20.0	12.5	13.5	21.1	21.8	20.8	18.6	18.5
Do not approve under any circumstances	12.4	8.7	24.0	26.9	14.2	23.2	14.3	19.4	13.9	14.2	12.8	32.5	11.5	10.3	16.9	32.4	17.8	17.6	13.5	20.6	22.3	21.7	20.1	15.5	31.0	14.2	13.5	18.1	9.3	23.1	21.9	8.9	17.2
DK	2.6	1.5	4.3	4.5	7.2	5.0	5.5	9.7	6.6	4.7	2.4	3.1	11.4	3.4	5.4	6.2	2.0	10.5	3.3	7.7	10.0	16.4	12.2	3.5	1.7	16.5	20.1	21.0	1.3	9.2	5.7	1.6	6.7

qb8a
Scientists also work on gene therapy which involves treating inherited diseases by intervening directly in the human genes themselves. Would you say that...?

gene_therapy	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Fully approve and do not think that special laws are necessary	13.6	9.9	4.8	7.3	15.0	10.4	14.2	5.8	13.9	12.7	7.8	4.6	7.7	10.2	15.5	10.7	6.8	13.6	8.6	14.3	11.5	9.4	13.8	10.6	2.4	7.1	13.6	10.1	8.0	9.7	6.9	8.5	11.4
Approve as long as this is regulated by strict laws	63.0	57.3	38.5	59.7	62.3	56.3	57.0	57.1	56.0	53.9	64.3	32.5	60.1	60.9	58.0	52.8	42.7	53.4	59.0	50.5	38.7	49.2	37.7	50.3	47.3	48.0	46.5	39.0	61.6	44.4	42.6	66.5	52.1
Do not approve except under very special circumstances	13.2	21.7	30.7	20.4	9.9	17.9	14.8	14.0	17.0	15.8	17.2	35.5	15.3	19.3	10.6	23.3	34.0	12.3	20.8	19.7	21.4	9.8	16.4	22.4	23.7	18.2	12.4	12.2	22.8	21.4	25.9	17.2	18.1
Do not approve under any circumstances	7.4	8.7	21.1	8.6	5.4	10.6	6.8	11.0	7.9	11.0	7.9	22.4	6.4	5.5	7.4	7.7	13.8	10.2	7.4	9.6	18.3	12.6	17.1	13.2	23.6	9.6	7.3	14.0	4.6	14.6	18.4	5.4	10.8
DK	2.7	2.4	4.9	3.9	7.4	4.8	7.2	12.0	5.2	6.7	2.8	5.0	10.5	4.0	8.5	5.5	2.7	10.4	4.3	5.8	10.1	18.9	15.0	3.4	2.9	17.2	20.2	24.7	3.1	9.9	6.3	2.3	7.5

qb9a
Regenerative medicine is not only about developing cures for people who are ill. It is also looking into ways of enhancing the performance of healthy people, for example to improve concentration or to increase memory. Would you

regenerative_medicine	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Fully approve and do not think that special laws are necessary	11.3	8.3	5.4	7.4	17.3	8.6	10.8	4.6	13.5	13.4	6.4	6.4	9.8	11.9	13.7	8.1	11.9	16.9	5.4	16.4	19.3	5.2	14.3	13.1	5.2	9.5	13.8	10.9	10.8	10.7	6.8	8.0	11.3
Approve as long as this is regulated by strict laws	48.5	42.6	34.2	55.0	54.3	43.4	42.8	53.6	45.8	39.5	43.8	32.6	57.8	44.4	50.2	50.0	36.2	47.7	47.6	47.9	41.9	47.2	38.5	47.9	47.9	42.9	45.2	39.5	50.3	43.2	27.4	50.4	44.4
Do not approve except under very special circumstances	21.2	26.2	29.5	21.4	9.2	22.4	21.0	15.5	18.1	15.4	29.2	27.7	13.3	25.6	14.9	28.4	31.0	15.0	20.1	15.4	15.5	12.5	16.1	22.9	16.9	18.0	11.7	11.5	26.4	21.8	25.8	21.2	19.7
Do not approve under any circumstances	16.5	18.9	26.0	11.4	11.3	21.0	19.3	12.6	15.6	25.1	18.8	29.7	8.8	13.9	14.5	8.5	18.8	8.8	23.5	11.9	13.0	16.0	15.6	13.2	27.9	11.0	9.6	13.6	11.4	14.6	35.2	17.4	17.2
DK	2.5	4.0	4.8	4.7	7.9	4.6	6.1	13.7	6.9	6.7	1.9	3.6	10.3	4.3	6.7	5.0	2.1	11.7	3.4	8.4	10.2	19.1	15.4	2.9	2.2	18.6	19.6	24.5	1.2	9.6	4.8	3.1	7.4

qb10a
Now I would like to know whether you agree or disagree with each of the following issues regarding regenerative medicine.

Research involving human embryos should be forbidden, even if this means that possible treatments are not made available to ill people

forbid_embryo_resear	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	8.2	14.0	23.7	23.6	10.3	11.9	13.2	14.9	12.3	19.2	15.4	25.3	8.6	7.8	10.1	24.0	12.0	12.1	15.6	19.2	15.2	15.2	14.9	18.3	24.9	14.5	15.3	23.9	5.8	24.2	18.7	9.0	14.7
Tend to agree	24.7	24.5	25.2	29.9	21.2	21.9	19.2	18.4	25.7	34.8	18.4	34.9	31.0	20.1	16.7	16.7	19.0	20.5	26.5	25.8	17.0	22.0	26.7	30.9	28.6	19.1	20.3	18.3	18.9	17.8	22.3	16.4	22.7
Tend to disagree	43.2	33.0	31.0	31.8	30.2	42.9	37.7	31.5	32.8	26.4	42.2	25.5	32.0	32.1	40.7	30.8	46.1	31.7	35.6	31.9	35.0	29.4	31.7	33.8	25.9	26.9	25.4	24.3	45.6	28.5	29.7	36.3	34.1
Totally disagree	18.4	24.5	13.6	7.6	27.8	15.5	20.7	14.3	16.8	11.6	20.5	7.0	10.1	34.5	24.0	10.1	16.2	13.7	15.0	12.1	14.3	11.9	12.8	9.4	14.9	12.3	13.1	13.2	25.0	14.5	19.0	32.2	18.1
DK	5.4	3.9	6.5	7.1	10.5	7.8	9.3	20.9	12.4	8.0	3.6	7.3	18.3	5.6	8.6	18.4	6.8	21.9	7.2	11.0	18.5	21.5	13.9	7.5	5.7	27.2	26.0	20.3	4.6	15.0	10.3	6.1	10.4

It is ethically wrong to use human embryos in medical research even if it might offer promising new medical treatments

ethics_embryo_resear	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	11.6	14.9	24.5	29.8	12.0	17.3	10.4	16.3	12.7	21.6	17.6	27.1	9.6	11.4	12.3	36.7	15.4	13.0	18.2	23.2	19.8	18.7	16.4	23.1	32.1	16.5	14.5	30.3	9.6	24.3	20.6	14.0	15.9
Tend to agree	28.2	28.3	27.6	31.0	20.5	27.5	28.7	24.0	28.0	32.5	20.7	34.9	30.1	24.2	20.0	30.7	28.3	26.1	31.4	31.1	26.4	29.6	30.5	37.6	30.1	28.7	27.0	22.3	21.4	23.5	28.4	20.5	26.5
Tend to disagree	40.7	29.6	28.2	26.4	32.3	34.6	32.7	27.7	30.0	29.8	38.0	24.8	32.0	28.4	36.1	16.1	37.6	29.2	34.1	26.5	25.8	22.7	25.6	27.5	23.2	22.4	21.6	18.8	43.3	27.4	25.5	34.1	30.7
Totally disagree	15.8	23.1	11.9	5.3	24.2	13.1	17.0	11.1	17.9	7.2	20.5	6.6	10.0	33.0	22.6	4.9	11.1	11.4	10.6	9.2	10.4	8.8	10.6	5.3	9.9	6.9	14.3	9.4	22.8	12.5	17.2	28.3	16.2
DK	3.6	4.1	7.7	7.4	11.0	7.5	11.1	20.9	11.4	8.9	3.2	6.6	18.3	3.0	9.1	11.6	7.5	20.4	5.7	10.0	17.5	20.2	17.0	6.5	4.6	25.5	22.5	19.1	2.9	12.3	8.2	3.1	10.7

We have a duty to allow research that might lead to important new treatments, even when it involves the creation or use of human embryos

duty_embryo_researc	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	12.0	21.0	11.7	10.9	19.6	15.9	11.0	11.8	14.9	9.2	12.4	7.0	8.7	20.2	18.2	9.8	12.0	12.2	10.2	7.7	11.0	3.8	13.1	7.2	12.8	10.8	9.3	15.2	21.6	8.1	12.0	21.7	13.7
Tend to agree	41.6	34.0	28.1	30.0	43.3	41.9	39.8	30.4	35.6	29.5	32.9	30.9	41.8	35.8	42.5	32.4	44.7	35.2	40.4	28.1	29.3	22.9	29.8	37.4	29.9	33.7	34.5	21.9	45.4	30.5	28.0	38.7	36.2
Tend to disagree	29.6	27.2	27.4	28.2	13.4	25.1	25.5	22.0	22.1	30.2	26.8	27.1	20.9	25.6	17.5	18.5	21.5	18.1	24.8	27.2	18.7	22.9	23.5	29.9	27.5	18.5	20.8	22.6	21.5	22.3	26.1	18.8	22.7
Totally disagree	12.0	12.3	24.7	23.6	12.5	10.6	11.8	14.2	14.3	21.8	23.6	27.1	8.8	15.2	11.9	22.8	13.5	11.8	16.7	23.8	19.7	28.2	12.5	17.7	25.7	13.6	12.3	18.5	7.6	27.0	25.3	15.5	15.7
DK	4.8	5.4	8.1	7.4	11.2	6.5	11.9	21.5	13.0	9.2	4.3	8.0	19.7	3.3	9.9	16.5	8.3	22.6	7.9	13.3	21.4	22.2	21.0	7.9	4.2	23.4	23.1	21.9	3.9	12.1	8.7	5.2	11.7

Should ethical and scientific viewpoints on regenerative medicine differ, the scientific viewpoint should prevail

science_vs_ethics	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	13.9	13.3	12.8	9.6	20.9	6.8	9.9	4.2	11.7	7.8	5.4	7.3	8.6	15.7	10.4	13.4	13.8	16.1	14.9	12.9	16.0	5.8	14.9	8.4	15.7	10.9	7.2	23.2	5.1	8.4	7.3	12.0	12.2
Tend to agree	35.9	31.6	29.4	30.1	34.3	32.5	29.9	21.2	37.3	33.6	22.0	33.0	37.5	33.4	30.4	28.2	49.5	35.2	43.3	38.8	33.8	17.9	34.8	34.1	29.7	29.0	30.5	20.3	33.8	34.9	26.5	33.1	32.6
Tend to disagree	31.8	30.6	32.5	31.1	17.3	31.9	26.2	24.7	20.6	32.9	38.5	33.6	23.5	26.9	24.7	26.8	21.6	20.5	23.8	20.9	19.4	22.6	21.0	35.6	23.5	24.3	20.5	18.7	39.6	23.3	24.2	27.8	25.4
Totally disagree	12.4	18.5	16.8	17.3	10.7	19.3	18.4	12.0	13.8	13.4	27.7	14.3	6.1	18.0	11.7	20.3	7.0	6.4	7.0	12.8	11.9	23.4	11.4	11.5	21.4	11.0	8.6	12.2	17.2	17.2	26.8	18.1	14.0
DK	6.0	6.0	8.5	11.9	16.8	9.4	15.7	37.9	16.6	12.2	6.4	11.9	24.4	6.1	22.9	11.3	8.1	21.8	11.0	14.7	18.9	30.3	18.0	10.4	9.7	24.8	33.3	25.7	4.3	16.1	15.2	9.0	15.8

Mixing animal and human genes is unacceptable even if it helps medical research for human health

mix_genes	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	22.8	22.0	28.7	34.7	20.9	32.5	27.5	25.2	28.5	29.4	26.7	34.4	15.8	22.5	25.6	48.7	25.7	28.0	28.2	33.8	33.8	19.5	35.6	26.5	36.6	20.2	21.2	36.3	26.5	37.0	33.8	25.2	27.0
Tend to agree	26.6	26.3	27.0	32.7	28.4	25.5	25.2	23.3	25.9	31.5	20.9	30.6	33.1	24.3	25.1	17.5	28.3	26.7	28.8	24.7	22.6	26.1	26.6	33.6	26.4	24.3	21.5	17.2	28.3	22.4	26.0	25.3	26.3
Tend to disagree	35.0	33.4	28.1	18.1	24.4	27.3	23.5	21.6	23.0	23.0	36.3	23.2	23.6	30.7	28.2	16.4	31.6	21.6	27.3	20.7	18.5	17.4	14.0	27.0	18.8	26.4	17.8	13.9	31.0	16.3	19.3	29.9	25.0
Totally disagree	11.6	14.6	8.9	6.4	14.8	8.2	13.4	8.3	12.6	7.4	9.3	4.7	7.2	18.3	12.1	7.7	5.9	8.5	7.7	11.0	12.4	14.7	8.4	5.0	13.9	7.5	10.9	12.7	11.4	10.1	11.0	13.7	11.0
DK	4.0	3.7	7.2	8.2	11.5	6.5	10.3	21.7	9.9	8.7	6.9	7.1	20.3	4.2	9.0	9.7	8.6	15.2	8.0	9.8	12.7	22.2	15.4	7.9	4.3	21.5	28.6	20.0	2.8	14.2	9.9	5.8	10.7

You do not support developments in regenerative medicine if it only benefits rich people

inequality_regen_med	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	50.0	63.0	63.9	57.0	56.8	55.2	50.7	29.1	40.3	50.8	70.0	50.2	36.5	69.4	47.3	75.8	52.3	43.2	55.1	35.2	42.3	30.6	43.5	43.5	68.5	40.5	27.7	41.6	62.5	58.5	57.0	68.9	50.8
Tend to agree	26.7	21.3	12.8	25.0	21.5	25.5	28.3	25.6	27.9	22.3	14.3	29.8	26.7	9.7	22.5	8.6	27.7	23.9	26.8	26.6	26.1	29.7	29.5	32.1	15.6	26.3	23.6	15.7	17.7	16.0	19.8	10.3	23.0
Tend to disagree	14.2	6.4	6.8	10.8	8.5	10.1	6.0	12.8	15.8	10.3	7.5	13.4	17.8	6.1	11.0	4.0	12.5	10.2	10.6	18.5	11.3	10.2	8.9	14.6	5.9	11.1	15.8	9.6	12.3	8.4	9.1	7.7	10.2
Totally disagree	7.1	6.1	11.8	2.0	6.4	3.4	6.9	9.2	8.6	10.7	6.5	3.7	3.1	11.0	11.7	4.1	2.8	8.4	4.6	10.5	7.6	14.3	5.2	4.5	7.8	5.7	11.7	11.9	6.4	7.1	9.5	9.2	8.2
DK	2.0	3.2	4.7	5.1	6.7	5.8	8.1	23.3	7.4	5.9	1.6	2.9	15.9	3.7	7.5	7.5	4.8	14.3	2.9	9.2	12.7	15.1	12.9	5.2	2.3	16.4	21.2	21.3	1.2	10.1	4.6	4.0	7.8

Immediately after fertilisation the human embryo can already be considered to be a human being

embryo_humanbeing	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	29.4	25.6	42.7	47.2	21.4	23.9	30.3	24.1	24.7	29.0	30.1	36.4	18.6	14.0	19.9	71.4	21.2	26.8	41.9	42.7	34.8	39.2	27.1	34.2	43.6	21.8	26.3	39.0	17.7	37.9	37.9	17.0	28.8
Tend to agree	31.9	23.0	23.4	32.4	27.5	22.3	29.1	31.5	29.3	29.2	22.7	33.5	40.7	21.1	25.1	12.6	27.0	23.4	28.4	21.8	22.7	32.9	26.6	32.2	24.1	27.4	26.9	15.3	23.9	22.5	25.3	18.4	27.0
Tend to disagree	25.6	24.2	19.7	9.0	20.4	27.8	17.8	14.3	21.3	20.8	27.2	20.2	17.8	23.6	27.0	7.8	34.2	20.2	19.5	18.3	18.6	4.6	19.1	21.6	18.0	16.3	13.0	13.0	36.7	15.1	15.5	23.5	20.9
Totally disagree	10.0	21.2	8.5	2.5	18.2	15.9	14.0	5.2	13.6	10.7	17.9	4.9	5.5	35.6	15.2	.8	13.0	10.4	6.1	7.4	10.9	5.1	10.4	5.4	10.8	6.7	7.0	12.1	20.0	11.0	12.6	34.7	12.5
DK	3.1	6.0	5.8	9.0	12.5	10.1	8.8	24.8	11.2	10.4	2.1	5.0	17.4	5.7	12.8	7.3	4.5	19.2	4.1	9.8	13.1	18.2	16.7	6.6	3.5	27.8	26.8	20.6	1.7	13.4	8.7	6.3	10.9

Research on regenerative medicine should be supported, even though it will benefit only a few people

benefits_regen_medic	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	13.8	18.6	11.7	7.4	10.8	8.3	12.8	7.2	9.0	5.7	13.1	10.3	7.5	14.6	15.2	8.4	4.2	10.5	9.3	7.7	12.7	12.9	12.6	4.7	13.9	4.7	6.3	18.1	9.5	8.0	11.7	13.4	11.2
Tend to agree	39.4	34.4	26.9	29.3	35.3	35.7	37.5	30.0	27.5	33.8	39.1	30.5	32.9	30.5	37.5	32.7	33.8	31.7	35.3	32.1	34.5	19.6	32.0	35.6	24.9	25.7	22.8	17.8	59.7	17.9	24.4	32.7	32.2
Tend to disagree	27.2	25.5	26.3	31.7	19.5	26.9	21.2	20.0	30.7	23.5	26.8	23.4	23.4	22.3	25.1	21.1	33.3	22.9	24.3	27.3	22.7	24.4	22.2	32.6	23.6	24.5	24.7	17.0	17.7	20.7	29.6	21.9	25.1
Totally disagree	15.2	16.6	27.5	24.6	25.6	20.5	17.8	12.1	22.1	27.9	15.0	28.9	17.1	26.7	9.3	24.1	20.2	17.7	24.0	21.1	13.5	23.7	11.7	20.5	33.6	19.1	21.9	24.7	10.3	39.1	26.3	26.5	19.9
DK	4.4	5.0	7.5	7.1	8.7	8.5	10.7	30.8	10.7	9.1	6.1	7.0	19.1	5.9	12.8	13.7	8.6	17.3	7.1	11.9	16.5	19.4	21.5	6.5	4.1	25.9	24.4	22.4	2.7	14.4	7.9	5.5	11.6

Research into regenerative medicine should go ahead, even if there are risks to future generations

risks_regen_medicine	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	6.9	6.9	3.6	3.2	5.8	6.4	4.1	3.3	6.5	5.6	4.4	6.6	3.3	5.9	6.1	5.1	5.0	3.6	9.2	5.0	4.6	1.9	7.6	5.3	6.5	1.9	4.9	14.3	2.9	3.7	5.3	6.1	5.3
Tend to agree	31.5	24.7	16.0	14.6	22.4	31.1	22.0	16.6	26.2	21.5	32.6	16.3	27.7	22.9	24.2	18.9	42.3	14.8	40.8	8.9	12.5	13.4	24.1	35.7	21.0	14.4	15.4	18.0	34.2	12.0	12.3	19.3	23.0
Tend to disagree	37.6	35.7	31.5	35.0	24.7	25.8	35.9	24.9	29.7	33.8	36.7	30.7	26.9	30.7	35.4	28.3	30.6	22.9	25.2	34.0	30.3	29.6	28.2	35.4	30.8	33.4	25.9	19.1	40.5	27.6	30.2	34.1	31.2
Totally disagree	18.6	25.9	39.9	41.1	34.7	29.2	24.3	22.2	24.8	28.1	18.8	42.0	20.1	34.7	18.3	35.1	12.2	43.2	14.7	41.3	37.5	35.0	20.6	13.8	35.7	28.9	27.5	25.5	17.1	40.5	42.9	32.0	27.3
DK	5.4	6.8	9.1	6.2	12.5	7.4	13.8	33.0	12.9	11.0	7.5	4.5	22.0	5.9	15.9	12.6	9.9	15.6	10.1	10.7	15.0	20.1	19.6	9.8	6.1	21.4	26.2	23.1	5.3	16.3	9.4	8.6	13.3

Split ballot B
Some European researchers think there are new ways of controlling common diseases in apples– things like scab and mildew. There are two new ways of doing this. Both mean that the apples could be grown with limited use of pesticides, and so pesticide residues on the apples would be minimal.
qb8b
The first way is to artificially introduce a resistance gene from another species such as a bacterium or animal into an apple tree to make it resistant to mildew and scab. For each of the following statements about this new technique please tell me if you agree or disagree.

It is a promising idea

transapple_promising	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	14.9	15.2	14.7	7.9	16.6	15.1	10.8	6.0	7.4	7.3	21.4	7.2	5.7	16.3	14.6	7.8	12.6	9.6	12.2	9.7	11.4	11.7	9.5	12.1	7.8	9.4	10.8	13.9	14.3	11.6	10.3	22.6	12.3
Tend to agree	41.2	32.5	24.6	20.6	31.7	34.7	31.7	35.1	32.4	30.6	37.5	30.4	40.5	28.2	37.1	22.5	36.5	30.3	36.1	25.7	28.6	33.7	32.1	35.1	26.8	25.5	26.7	17.6	40.3	19.5	24.3	31.4	31.5
Tend to disagree	23.1	21.2	24.8	29.2	22.0	25.1	18.6	18.8	24.6	27.2	14.8	28.5	23.5	20.6	18.4	20.8	26.8	23.2	29.1	24.8	19.3	14.1	25.5	28.9	28.2	20.2	20.3	13.5	23.2	19.7	27.9	17.7	22.5
Totally disagree	16.6	25.9	26.3	36.9	18.2	19.5	27.3	16.8	18.5	27.0	20.3	22.3	16.8	30.2	20.7	22.9	16.3	23.8	18.7	29.0	22.6	17.4	14.8	18.9	33.5	16.4	18.1	26.3	17.9	41.0	28.1	22.0	21.5
DK	4.2	5.2	9.6	5.4	11.5	5.6	11.6	23.4	17.1	7.9	5.9	11.6	13.5	4.7	9.3	26.0	7.9	13.1	4.0	10.9	18.1	23.0	18.1	5.0	3.7	28.6	24.1	28.8	4.3	8.2	9.4	6.3	12.1

Eating apples produced using this technique will be safe

transapple_safe	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	8.1	7.0	7.7	4.4	7.6	8.5	3.6	3.1	5.8	3.0	10.5	7.1	3.4	9.6	7.9	3.9	9.7	4.3	8.0	3.5	5.5	3.9	5.1	7.1	3.9	5.4	6.6	8.5	6.6	6.4	6.7	17.6	6.6
Tend to agree	28.6	27.7	21.2	12.7	24.2	26.5	12.4	21.1	28.2	15.1	30.5	17.8	28.4	19.4	26.9	9.9	32.6	23.1	29.9	17.6	20.5	17.5	22.9	26.1	16.6	15.6	16.4	14.0	41.4	16.6	13.4	25.7	22.7
Tend to disagree	35.5	33.0	30.0	31.6	25.8	32.2	29.9	18.6	25.1	30.8	21.7	35.0	29.3	29.7	23.2	24.3	26.8	31.6	29.3	33.1	23.9	20.9	25.8	34.0	32.0	23.8	22.8	16.4	24.5	24.2	29.9	22.1	27.2
Totally disagree	19.1	21.9	27.2	44.8	21.3	22.7	30.3	18.3	22.3	34.5	17.4	24.3	16.7	27.0	15.8	31.7	16.8	23.2	20.0	34.7	29.6	19.7	17.8	19.7	36.8	24.7	22.2	29.9	12.7	41.5	30.2	16.0	23.0
DK	8.7	10.4	13.9	6.5	21.1	10.1	23.8	39.0	18.6	16.6	19.9	15.8	22.1	14.3	26.2	30.1	14.1	17.9	12.7	11.1	20.4	37.9	28.4	13.0	10.7	30.6	32.0	31.2	14.7	11.3	19.8	18.6	20.4

It will harm the environment

transapple_environme	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	11.6	18.8	20.2	34.7	14.8	19.1	22.8	11.8	13.3	27.8	12.4	21.6	10.3	25.1	13.5	23.7	9.8	14.5	7.7	23.4	19.7	5.6	14.5	10.3	32.2	11.0	12.0	24.4	10.7	29.1	17.9	17.2	16.5
Tend to agree	30.7	31.1	26.6	36.2	27.5	34.3	29.1	22.4	21.7	33.5	23.1	33.2	29.4	33.8	27.3	19.1	24.5	30.3	27.2	27.3	22.6	23.1	26.0	35.7	33.3	27.3	22.2	16.9	27.4	27.0	32.6	24.2	26.9
Tend to disagree	36.6	30.9	25.4	15.0	22.2	27.9	18.2	20.0	26.9	17.9	36.7	22.2	22.6	18.9	26.0	13.7	39.7	26.4	32.7	26.1	22.6	19.3	25.4	33.3	20.2	16.0	19.6	14.4	40.7	17.0	19.4	21.4	24.8
Totally disagree	10.7	8.9	12.7	5.6	10.6	8.3	7.1	7.9	12.6	4.7	12.8	6.9	9.7	7.4	10.1	5.3	11.5	9.6	16.3	8.1	11.7	8.9	6.1	8.9	4.8	8.6	10.9	11.5	8.4	13.1	10.8	15.4	10.2
DK	10.4	10.2	15.0	8.5	24.9	10.4	22.8	37.9	25.4	16.1	14.9	16.1	27.9	14.7	23.2	38.2	14.5	19.3	16.0	15.2	23.4	43.1	27.9	11.7	9.6	37.2	35.4	32.8	12.9	13.9	19.3	21.8	21.7

It is fundamentally unnatural

transapple_unnatural	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	36.2	54.9	40.9	56.3	39.6	41.3	54.2	24.7	30.2	50.7	48.0	37.5	29.0	67.4	36.2	60.7	37.5	34.5	39.2	49.9	39.1	21.5	31.0	30.1	56.6	22.7	19.8	32.8	32.0	48.8	50.8	58.0	38.9
Tend to agree	39.5	30.1	31.3	29.6	32.6	31.6	28.5	32.5	32.4	34.2	26.0	35.8	36.9	15.7	34.5	19.7	34.9	32.0	33.0	27.5	33.9	39.6	42.1	47.0	29.2	33.4	27.1	16.2	36.1	29.5	27.6	19.1	32.5
Tend to disagree	16.0	7.7	15.2	7.4	13.6	19.8	7.0	12.1	18.9	7.0	15.5	15.8	14.7	8.3	15.0	8.9	19.6	15.1	17.8	10.2	8.7	13.1	13.4	13.6	8.2	12.5	15.5	10.0	22.8	9.3	10.7	12.0	14.0
Totally disagree	5.5	4.3	7.5	3.3	7.9	4.9	3.1	5.4	8.9	3.4	6.6	4.0	5.6	4.7	5.6	.8	4.3	4.8	7.0	4.0	6.3	9.1	2.7	6.1	2.7	6.6	8.0	10.1	3.9	7.0	7.6	6.6	6.0
DK	2.8	2.9	5.2	3.4	6.3	2.4	7.1	25.2	9.5	4.7	3.8	7.0	13.7	3.9	8.7	9.9	3.7	13.6	2.9	8.4	12.0	16.6	10.8	3.2	3.3	24.7	29.6	30.9	5.3	5.4	3.3	4.3	8.5

It makes you feel uneasy

transapple_uneasy	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	21.7	39.6	41.3	53.2	20.6	27.4	28.3	23.1	20.2	37.9	33.3	36.7	21.9	33.1	29.2	48.9	18.9	26.5	23.8	39.0	31.4	21.0	24.4	21.3	47.4	18.3	16.0	30.5	20.7	41.8	37.7	27.2	28.2
Tend to agree	32.8	30.2	29.4	31.8	33.2	32.7	27.1	28.9	26.4	31.4	20.2	38.6	34.3	25.7	29.3	31.3	33.1	25.2	30.4	26.5	27.9	34.4	36.5	36.2	29.2	28.4	25.6	14.6	25.3	29.4	31.0	24.6	29.7
Tend to disagree	28.4	17.4	15.7	9.4	25.1	24.0	20.7	17.0	28.2	15.0	27.9	14.2	21.6	17.6	22.7	10.6	29.9	18.5	25.7	19.2	15.9	12.8	23.4	30.3	16.4	16.8	18.6	12.4	37.3	12.0	13.3	18.4	21.9
Totally disagree	12.7	8.0	10.1	3.3	16.7	13.8	17.1	6.4	12.5	9.5	16.5	4.9	8.7	20.3	11.5	2.5	11.4	17.3	13.7	6.8	11.3	7.4	6.0	9.6	4.6	8.7	11.9	10.3	15.8	10.7	14.0	25.0	12.0
DK	4.4	4.7	3.5	2.2	4.5	2.1	6.7	24.7	12.7	6.2	2.1	5.6	13.5	3.4	7.3	6.8	6.8	12.5	6.5	8.5	13.4	24.3	9.8	2.6	2.3	27.9	27.9	32.2	.9	6.2	4.0	4.7	8.2

It should be encouraged

transapple_encourage	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	5.6	8.2	8.6	3.5	7.8	11.4	4.4	3.4	5.4	5.6	7.8	6.1	3.4	6.4	9.8	4.4	8.1	5.8	8.7	4.2	5.4	5.9	6.8	6.3	4.3	4.3	5.0	8.0	4.5	5.9	5.4	12.7	6.9
Tend to agree	28.9	21.0	15.9	13.1	23.6	21.2	19.3	20.0	24.5	9.5	29.2	17.8	26.3	18.5	25.2	13.4	31.3	17.3	28.6	17.4	15.7	19.7	22.4	29.6	16.6	16.4	15.7	11.3	31.5	14.4	16.0	21.8	21.6
Tend to disagree	29.4	26.5	28.4	30.2	21.9	33.3	22.5	15.8	27.6	23.6	25.3	27.8	27.2	21.9	27.9	22.2	29.9	31.4	24.9	26.9	25.1	18.7	24.5	34.6	28.1	22.2	16.6	15.5	31.6	17.8	25.4	22.0	25.7
Totally disagree	28.7	33.5	40.6	47.8	30.7	26.2	39.4	25.3	22.3	52.7	31.9	35.1	21.1	47.0	25.4	33.0	20.1	29.7	28.9	41.0	33.4	24.1	23.4	23.1	44.0	26.7	30.3	30.6	27.4	49.0	44.9	32.4	31.2
DK	7.3	10.9	6.5	5.5	16.1	7.9	14.4	35.5	20.2	8.6	5.7	13.2	22.0	6.2	11.8	26.9	10.6	15.8	8.9	10.6	20.3	31.5	22.9	6.4	7.1	30.5	32.4	34.7	5.0	13.0	8.4	11.0	14.6

qb9b
And which of the following statements is closest to your view?

transapple_label	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
These apples would be the same as ordinary apples and would not need special labelling	11.7	8.5	8.8	5.4	10.5	9.1	7.0	7.1	12.6	10.6	14.2	13.2	15.1	8.0	8.1	.8	10.3	9.9	14.5	7.0	12.5	2.0	10.4	9.5	3.7	7.9	10.3	6.4	10.0	6.7	10.1	11.4	9.8
These apples would be like GM food and should be clearly identified with a special label	84.1	89.1	87.6	92.6	84.9	89.2	85.9	69.2	75.4	87.6	83.5	77.8	72.2	89.5	87.3	95.9	86.1	78.4	82.4	90.4	79.5	91.7	81.2	87.1	93.8	76.2	70.6	61.0	88.7	81.5	84.8	85.2	83.3
DK	4.2	2.4	3.6	2.0	4.7	1.8	7.1	23.7	12.0	1.7	2.3	9.0	12.6	2.6	4.6	3.3	3.6	11.7	3.1	2.6	8.0	6.3	8.4	3.4	2.5	15.9	19.1	32.6	1.3	11.9	5.1	3.5	6.9

qb10b
The second way is to artificially introduce a gene that exists naturally in wild/ crab apples which provides resistance to mildew and scab. For each of the following statements about this new technique please tell me if you agree or
It will be useful

cisapple_useful	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	22.7	31.5	26.1	19.5	23.0	37.1	19.2	14.1	11.2	13.5	34.4	12.3	13.9	40.4	27.0	28.3	27.8	30.3	27.8	31.6	28.9	22.2	22.9	22.5	19.1	15.6	17.4	18.4	29.6	22.9	21.4	52.7	22.4
Tend to agree	48.3	44.5	37.9	42.5	42.0	37.6	41.4	44.7	38.6	45.0	41.1	48.9	46.4	34.2	45.5	40.5	44.8	38.9	44.8	37.3	36.7	40.9	37.2	49.2	38.0	36.5	35.7	19.3	46.4	28.9	37.4	30.1	40.8
Tend to disagree	14.4	11.3	15.1	21.7	13.9	11.7	13.3	10.1	19.9	21.6	11.2	20.5	17.6	6.8	10.6	6.8	14.6	12.5	16.6	15.0	9.9	10.7	15.3	16.5	18.1	13.2	12.4	11.8	12.7	17.2	14.6	4.9	14.6
Totally disagree	11.5	8.1	12.6	10.6	9.8	8.1	14.8	7.1	13.3	15.6	9.4	10.2	7.4	13.4	7.5	5.0	5.9	5.8	5.9	9.4	9.2	7.3	7.2	7.6	19.0	9.8	9.5	22.6	4.5	21.8	17.3	4.5	10.6
DK	3.0	4.7	8.3	5.7	11.3	5.5	11.4	24.1	17.1	4.3	3.9	8.1	14.8	5.2	9.4	19.5	6.8	12.5	5.0	6.6	15.4	18.9	17.4	4.1	5.9	25.0	25.0	27.9	6.8	9.2	9.3	7.7	11.7

It will be risky

cisapple_risky	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	9.5	9.4	16.4	12.7	18.5	13.5	16.0	9.2	15.3	17.1	8.1	15.2	11.3	10.8	9.4	7.7	10.5	6.5	9.4	12.5	11.7	5.8	12.1	10.1	21.5	8.8	10.5	31.1	22.0	21.0	16.7	7.9	13.5
Tend to agree	26.3	28.0	21.9	22.8	34.5	19.5	29.1	30.3	28.7	36.6	15.7	32.0	30.2	25.9	30.2	12.8	23.3	14.5	27.5	25.8	21.6	26.1	28.1	34.4	30.1	22.2	19.0	18.8	51.9	24.1	23.3	20.0	27.0
Tend to disagree	44.4	37.7	35.3	39.8	23.6	41.8	25.3	24.5	23.2	26.5	43.1	33.4	29.7	28.7	33.4	33.3	42.3	37.8	39.5	35.6	29.0	22.5	30.7	40.4	26.9	27.2	30.3	11.5	10.9	23.4	30.2	29.9	31.0
Totally disagree	13.0	16.8	16.6	17.7	12.5	18.1	12.7	8.4	10.2	8.4	20.1	9.5	10.5	28.4	13.6	21.6	15.6	25.1	17.2	18.6	18.2	11.0	10.5	10.4	13.4	13.7	13.8	10.2	2.6	20.0	16.1	27.1	13.8
DK	6.7	8.1	9.8	7.0	10.9	7.1	16.9	27.5	22.6	11.5	13.0	9.9	18.3	6.2	13.4	24.6	8.4	16.1	6.3	7.5	19.6	34.7	18.6	4.7	8.1	28.1	26.4	28.3	12.6	11.5	13.6	15.0	14.7

It will harm the environment

cisapple_environment	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	8.6	6.9	12.0	14.2	10.1	10.0	12.6	6.2	9.8	15.4	7.9	15.7	6.1	8.2	6.8	8.1	5.6	5.5	4.6	8.2	10.0	4.6	11.6	8.5	22.8	7.4	10.1	25.0	2.9	16.2	12.3	5.5	10.0
Tend to agree	24.8	20.5	19.0	21.5	22.9	18.2	23.5	18.0	20.4	32.2	16.2	26.3	26.0	20.1	19.7	10.2	15.7	13.2	14.5	20.5	14.3	16.5	18.3	21.4	24.4	15.0	14.5	16.8	12.6	20.4	18.6	12.7	20.0
Tend to disagree	44.8	41.5	31.5	33.8	26.2	43.4	29.7	29.7	31.5	25.6	42.9	36.2	29.2	32.4	35.9	28.1	44.8	35.5	41.0	33.8	30.6	29.2	36.7	48.3	28.2	26.5	29.3	14.1	55.3	28.1	31.5	29.2	33.3
Totally disagree	14.5	21.9	20.5	22.3	16.8	21.9	14.7	10.6	13.5	10.6	20.7	9.3	13.6	26.2	18.4	20.6	23.9	30.3	30.6	23.8	22.1	11.9	12.6	14.2	15.7	20.2	15.5	12.1	18.6	22.0	20.1	33.2	17.3
DK	7.3	9.3	17.0	8.2	24.0	6.5	19.6	35.4	24.8	16.2	12.3	12.5	25.1	13.1	19.1	33.0	10.0	15.6	9.3	13.8	23.0	37.9	20.9	7.7	8.9	30.8	30.5	32.0	10.6	13.3	17.6	19.4	19.4

It is fundamentally unnatural

cisapple_unnatural	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	22.8	35.7	21.4	23.2	29.4	15.4	31.7	12.4	26.1	30.0	32.7	22.3	24.3	30.9	17.3	15.0	17.7	12.0	19.0	16.8	18.4	9.6	18.3	16.8	40.8	11.9	12.4	31.1	14.3	28.0	29.8	24.2	23.2
Tend to agree	37.8	31.8	25.5	27.0	30.8	22.9	33.2	31.7	28.0	40.6	25.1	33.1	30.0	25.4	30.7	21.4	29.4	21.0	25.9	27.8	26.8	35.0	33.6	43.3	29.2	21.1	21.5	19.3	27.1	28.6	30.3	22.3	29.2
Tend to disagree	27.0	17.4	29.4	29.4	21.0	39.2	19.7	22.6	27.1	16.6	25.9	31.1	25.4	19.8	29.6	33.4	35.2	30.4	34.0	27.7	25.5	23.7	25.7	30.2	17.9	26.3	25.9	11.4	41.8	22.6	19.4	23.7	26.4
Totally disagree	9.1	11.5	16.7	15.9	12.2	17.7	8.2	9.6	8.6	9.4	14.0	7.4	9.1	20.3	14.1	17.5	13.8	24.6	19.0	19.9	15.1	12.9	9.7	6.7	7.8	16.0	14.4	9.7	13.4	14.4	16.2	26.1	12.5
DK	3.2	3.6	7.1	4.5	6.6	4.7	7.1	23.8	10.2	3.4	2.3	6.2	11.2	3.6	8.4	12.7	3.8	12.0	2.1	7.8	14.2	18.8	12.8	2.9	4.4	24.6	25.8	28.5	3.5	6.4	4.3	3.7	8.8

It makes you feel uneasy

cisapple_uneasy	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	14.0	19.2	22.5	22.4	15.7	12.8	18.1	11.3	16.5	20.5	19.7	21.2	13.5	11.7	13.1	14.9	7.6	6.9	10.0	12.3	13.4	7.3	14.3	9.8	30.2	8.7	10.5	27.1	9.3	25.1	24.1	8.7	16.2
Tend to agree	27.1	27.0	21.8	24.3	32.8	16.1	22.1	28.5	28.3	32.0	19.4	30.6	26.8	16.9	21.2	23.0	24.7	13.5	19.1	20.8	19.2	31.7	26.7	27.0	28.9	19.3	18.9	19.8	12.1	23.0	20.5	18.4	24.2
Tend to disagree	37.9	32.0	30.0	34.1	26.9	38.4	26.6	27.0	28.7	25.9	33.7	32.8	31.9	24.8	35.9	31.3	41.4	29.2	38.4	30.7	29.9	27.5	33.7	46.9	22.8	26.2	24.7	12.3	48.5	26.1	27.8	23.4	30.9
Totally disagree	17.5	16.9	20.2	16.0	21.0	30.1	27.3	10.4	13.3	16.0	24.3	10.4	14.4	43.5	21.8	21.2	22.2	36.7	27.1	27.8	24.3	12.0	15.3	14.3	15.0	19.4	19.6	10.3	28.0	17.9	22.0	46.4	20.3
DK	3.5	4.9	5.5	3.2	3.7	2.6	5.8	22.8	13.2	5.7	2.9	4.9	13.3	3.1	7.9	9.6	4.2	13.7	5.4	8.4	13.1	21.5	10.0	2.0	3.1	26.4	26.3	30.5	2.0	7.9	5.6	3.1	8.3

It should be encouraged

cisapple_encourage	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Totally agree	12.1	17.5	17.2	17.7	9.6	28.1	11.6	10.4	6.6	9.3	15.3	8.5	9.3	21.9	17.1	22.4	21.1	21.6	21.8	23.7	19.1	12.2	16.7	14.5	16.2	13.6	13.1	9.5	10.7	16.7	14.1	33.6	14.1
Tend to agree	36.5	33.9	28.0	35.3	34.6	36.2	30.5	30.1	28.3	22.5	32.7	37.9	36.3	31.6	37.1	32.9	40.6	35.1	43.8	35.4	28.7	27.0	33.3	44.2	27.7	29.1	27.4	13.5	46.4	24.3	25.6	25.2	32.4
Tend to disagree	27.7	20.8	23.9	22.2	16.8	16.0	17.8	12.0	27.2	27.0	24.4	21.7	19.9	18.0	20.0	10.2	20.9	16.6	17.3	17.7	16.5	10.5	16.5	23.3	22.6	11.5	12.1	17.4	23.5	17.0	20.9	17.2	20.4
Totally disagree	16.1	18.4	23.2	15.5	22.4	12.1	26.9	13.6	17.3	32.9	21.2	20.0	15.2	22.0	12.4	6.9	7.1	9.8	10.6	14.8	13.5	16.4	12.1	10.1	24.7	14.6	14.9	24.4	12.6	29.3	30.0	12.8	18.2
DK	7.7	9.4	7.7	9.3	16.5	7.7	13.2	33.9	20.7	8.2	6.4	11.9	19.3	6.6	13.4	27.7	10.3	16.9	6.6	8.4	22.2	33.8	21.4	7.9	8.8	31.2	32.5	35.1	6.9	12.8	9.4	11.2	14.9

qb11b
And which of the following statements is closest to your view?

cisapple_label	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
These apples would be the same as ordinary apples and would not need special labelling	17.0	19.6	24.2	24.0	14.0	40.0	14.3	11.8	16.5	12.9	25.1	26.9	22.9	29.8	18.8	15.3	28.1	34.7	37.1	28.6	29.8	5.8	21.8	23.4	6.5	25.6	19.3	10.7	29.0	22.1	18.2	32.8	20.4
These apples would be like GM food and should be clearly identified with a special label	79.1	77.9	70.3	72.2	81.7	57.6	78.9	66.2	70.7	84.8	72.6	64.7	64.0	67.1	75.1	80.2	68.3	55.0	59.5	68.1	61.0	86.6	68.7	73.3	91.4	57.5	63.5	62.7	68.0	68.9	76.6	64.5	72.1
DK	3.9	2.5	5.5	3.8	4.2	2.4	6.8	22.1	12.8	2.3	2.3	8.4	13.1	3.1	6.0	4.5	3.6	10.2	3.4	3.3	9.2	7.6	9.6	3.3	2.1	17.0	17.2	26.7	2.9	9.0	5.3	2.7	7.5

Split ballot A
qb11a
Before today, have you ever heard anything about synthetic biology?

heard_synbiology	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Heard	17.3	14.9	17.8	15.3	18.1	28.1	12.0	21.9	12.6	26.9	19.9	15.3	16.5	22.6	20.7	16.2	11.8	17.7	20.4	22.2	18.5	19.4	15.0	20.3	21.6	16.0	20.5	9.5	14.7	28.2	29.2	23.9	16.9
Not heard	82.7	85.1	82.2	84.7	81.9	71.9	88.0	78.1	87.4	73.1	80.1	84.7	83.5	77.4	79.3	83.8	88.2	82.3	79.6	77.8	81.5	80.6	85.0	79.7	78.4	84.0	79.5	90.5	85.3	71.8	70.8	76.1	83.1

qb12a
[IF YES] Have you ever talked about synthetic biology with anyone before today?

talked_synbiology	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	3.1	4.8	1.9	4.3	3.4	2.9	2.8	2.4	5.3	2.2	4.4	10.6	4.8	1.0	7.5	2.5	1.4	3.4	4.4		2.2	2.1	3.3	1.3	4.7	3.4		7.0	5.1	5.9	4.4	2.8	3.8
Yes, occasionally	28.8	7.2	28.5	15.3	19.0	26.6	14.9	18.4	37.3	30.6	23.1	38.0	26.3	15.0	16.6	16.1	10.2	14.3	15.9	12.3	22.4	19.9	12.4	26.5	29.1	27.1	26.7	4.5	1.9	20.1	21.7	20.9	22.3
Yes, only once or	17.8	30.3	18.7	36.2	20.7	18.9	20.7	33.2	30.1	19.6	22.6	27.1	21.9	18.3	22.8	38.8	27.4	28.7	30.1	24.8	23.4	13.7	20.8	24.5	22.5	17.8	22.1	12.3	35.8	25.4	21.8	22.1	22.6
No, never	50.3	57.6	50.9	44.2	56.9	50.3	61.7	43.1	25.4	47.6	49.9	23.0	44.6	63.8	49.8	42.6	61.0	53.6	49.5	62.0	52.0	63.0	61.9	47.6	43.8	51.7	46.0	69.8	57.1	47.0	52.1	53.5	50.0
DK						1.3		2.9	1.8			1.3	2.4	1.9	3.3					.9		1.3	1.7				5.2	6.5		1.5		.7	1.3

[IF YES] Have you ever searched for information about synthetic biology?

infosearch_synbiology	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	2.5	4.0	.4	2.9	3.5	1.1	1.4		8.4	1.0	4.4	6.1		2.0	4.3	2.5	1.4	3.8	5.2	1.0	2.1		4.3	1.3	3.4	2.9	1.7	7.0		2.3	3.8	1.9	3.1
Yes, occasionally	17.2		12.3	12.0	17.6	17.4	13.1	12.7	16.7	17.9	14.7	29.9	18.0	9.0	7.9	18.7	8.8	5.8	11.9	9.5	13.9	16.0	9.3	17.2	15.0	8.4	7.4	1.7	10.3	16.4	13.8	10.2	12.6
Yes, only once or	12.5	12.5	13.6	24.7	7.7	17.5	13.7	23.2	15.5	9.9	9.2	12.8	24.5	10.5	9.1	18.6	16.9	17.1	20.4	13.5	18.3	5.8	15.4	23.1	10.7	13.5	21.4	15.3	17.1	16.7	13.4	8.2	13.7
No, never	67.8	83.5	73.8	60.4	71.1	63.3	71.7	62.1	59.5	71.3	71.7	50.1	57.5	77.7	78.6	60.2	72.8	73.3	62.4	75.2	65.6	76.9	71.0	58.3	71.0	75.3	65.9	69.6	72.7	61.1	69.1	79.8	70.3
DK						.7		2.1				1.2		.8	.1					.9		1.3					3.7	6.5		3.6			.3

Split ballot A
qb13a

Suppose, there was a referendum about synthetic biology and you had to make up your mind whether to vote for or against. Among the following, what would be the most important issue on which you would like to know more? Firstly?

synbiology_info1	Country																																	EU27
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	
What the scientific processes and techniques are	14.9	10.7	13.3	13.5	15.0	26.4	13.4	18.7	12.8	25.7	14.2	15.7	15.6	9.7	14.8	13.0	45.6	20.6	13.0	22.0	10.4	15.2	11.5	9.9	27.3	38.4	17.5	11.0	13.3	15.3	22.8	18.0	15.1
Who is funding the research and why	11.3	4.0	6.3	8.9	7.0	7.4	12.6	11.5	11.5	10.8	3.4	7.7	7.4	5.9	5.0	8.4	5.2	4.9	7.4	5.0	3.5	7.5	8.9	7.8	4.9	5.4	7.5	2.9	3.3	9.3	6.3	6.3	7.9
What the claimed benefits are	10.8	15.7	28.6	24.5	25.0	22.6	15.6	15.6	25.3	16.1	8.5	28.4	25.9	15.8	17.6	24.6	6.0	9.0	22.4	12.7	32.1	25.7	19.0	23.9	16.6	23.1	23.7	17.8	28.1	23.5	16.3	17.0	21.3
What the possible risks are	30.1	29.4	21.5	32.8	22.4	19.8	28.7	19.3	21.7	17.6	23.3	24.2	30.3	23.1	24.4	33.5	19.9	26.9	23.8	18.9	17.5	23.4	24.9	18.4	18.4	13.8	21.9	13.4	19.5	24.9	18.0	24.9	23.7
Who will benefit and who will bear the risks	15.1	13.0	11.4	10.4	7.1	10.9	6.6	8.7	8.8	6.4	26.0	7.3	5.5	16.7	8.7	7.8	14.9	13.6	9.8	10.9	9.4	8.3	9.9	22.5	10.8	6.9	8.2	9.5	12.3	12.1	8.5	17.1	10.0
What is being done to regulate and control synthetic biology	4.1	9.7	3.7	1.0	3.1	1.7	7.0	6.5	5.8	6.9	7.3	5.7	2.3	12.3	7.1	2.0	2.8	4.5	8.5	4.7	5.9	2.8	3.5	5.7	4.9	3.1	2.3	1.8	8.3	5.0	9.9	6.7	5.1
What is being done to deal with the social and ethical issues involved	5.1	10.8	2.9	2.5	3.7	6.4	2.7	6.0	2.3	3.3	9.8	2.7	.8	7.7	3.8	5.0	.9	2.7	2.0	4.4	1.0	.7	2.6	3.6	6.2	.8	2.7	3.6	7.9	1.9	4.1	4.6	3.4
Other (SPONTANEOUS)	.8	.3			.9	.2					1.1	.2		.2			.4	.9	.4		.2		.2	.3	.7		.2		.3		.6	.3	.2
None (SPONTANEOUS)	3.5	1.4	3.4	2.1	5.5	1.4	2.2	1.2	2.7	1.7	1.1	3.0	1.8	1.0	4.4	5.1	1.3	1.6	3.5	9.2	5.4	1.1	5.6	2.0	5.3	.4	1.5	1.4	1.2	1.5	2.2	1.2	3.3
DK	4.1	5.1	9.0	4.3	10.2	3.3	11.1	12.5	9.3	11.5	5.3	5.2	10.3	7.6	14.2	.5	3.2	15.3	9.2	12.2	14.5	15.3	14.1	5.8	5.0	8.1	14.4	38.5	5.9	6.5	11.4	3.8	10.1

And secondly?

synbiology_info2	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
What the scientific processes and techniques are	10.5	7.1	8.5	5.7	6.8	10.6	8.9	10.4	10.0	9.3	6.8	9.4	9.9	9.1	7.3	5.6	14.9	11.3	7.1	10.9	6.6	6.9	10.7	7.7	9.6	6.9	9.1	6.3	5.7	7.9	10.8	9.5	8.7
Who is funding the research and why	9.2	7.4	9.2	5.8	6.0	6.7	8.7	10.1	8.6	13.4	4.3	8.9	10.0	8.4	10.5	8.0	7.1	7.0	4.8	11.5	5.6	4.4	11.1	10.2	5.6	6.8	10.8	10.4	5.2	11.6	6.3	9.3	8.6
What the claimed benefits are	13.7	22.8	23.4	30.2	24.8	26.3	16.1	19.8	24.5	20.4	17.2	21.3	29.4	17.5	17.2	24.0	13.5	16.6	25.4	23.9	21.4	25.4	22.8	20.1	21.2	30.3	25.8	20.1	19.9	19.9	23.8	21.0	21.7
What the possible risks are	26.8	27.7	25.0	34.1	31.9	29.4	31.5	24.9	31.4	30.2	22.9	30.7	23.9	22.9	25.2	34.2	29.2	28.5	34.0	22.7	39.7	32.3	28.1	28.6	25.2	35.4	32.7	27.2	27.3	30.0	23.5	23.2	28.7
Who will benefit and who will bear the risks	19.8	12.7	17.0	18.5	14.7	14.8	13.1	13.7	11.2	11.1	19.4	18.9	14.3	16.7	17.1	19.3	22.5	16.9	13.6	17.2	14.6	16.1	12.6	19.0	20.5	12.5	11.2	22.3	14.7	18.6	16.9	18.2	15.1
What is being done to regulate and control synthetic biology	14.0	9.5	10.5	2.9	7.8	6.4	17.0	13.3	10.0	11.8	15.8	6.2	6.0	14.5	12.6	3.8	7.2	10.0	11.8	8.2	7.1	7.6	7.4	9.9	10.1	6.1	5.8	6.5	13.8	6.4	9.0	11.0	10.6
What is being done to deal with the social and ethical issues involved	5.2	12.2	5.6	2.5	4.0	4.6	3.0	6.4	3.8	3.6	11.8	3.8	3.7	10.1	7.7	5.1	5.0	5.4	2.8	4.0	3.7	4.5	5.0	4.4	6.5	1.7	2.8	6.0	13.0	4.8	9.0	5.7	5.1
Other (SPONTANEOUS)	.6				1.6	.6		.1			.8	.5	.2	.2							.2		.2		.5				.3	.2	.4	.2	.2
None (SPONTANEOUS)	.2	.2	.4	.2	.6	.1	.4	.5	.5		.5		.2	.1	.9		.3	.4	.2	.6	.5		.2		.8		1.0				.3	1.3	.5
DK		.5	.2		1.9	.6	1.1	.9			.5	.2	2.4	.4	1.6		.2	3.8	.3	1.1	.5	2.7	1.8			.2	.7	1.2		.6		.5	.8

And thirdly?

synbiology_info3	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
What the scientific processes and techniques are	9.7	7.2	8.5	12.5	12.3	8.7	7.7	8.9	11.9	8.5	9.9	9.5	11.6	12.6	11.4	13.2	8.8	12.2	11.0	10.3	7.4	8.8	13.6	7.2	10.7	7.4	9.1	12.8	10.8	9.4	7.8	8.7	10.3
Who is funding the research and why	9.2	8.8	7.7	10.5	9.2	7.2	9.5	11.3	10.0	9.7	7.6	8.3	9.0	7.5	12.3	7.3	7.8	7.4	9.5	10.7	7.2	11.1	10.8	9.9	11.5	7.0	15.4	5.5	8.8	9.7	7.7	9.3	9.7
What the claimed benefits are	14.5	12.5	14.8	15.7	12.8	13.6	12.3	15.6	16.3	14.2	13.1	14.5	15.9	12.8	12.3	11.3	15.5	15.2	14.2	18.0	13.9	17.1	11.2	15.2	11.2	15.6	11.7	13.9	11.1	16.0	11.3	19.0	13.7
What the possible risks are	16.8	13.8	17.7	14.2	18.8	18.2	15.6	15.2	17.6	21.2	15.8	14.8	20.1	16.0	13.8	16.8	21.1	17.8	18.7	19.1	17.3	17.9	16.6	20.1	17.3	19.6	16.8	15.5	18.2	16.3	14.7	17.7	16.9
Who will benefit and who will bear the risks	16.1	18.9	18.8	26.0	21.9	25.1	20.5	17.8	21.4	17.1	18.1	27.1	17.9	14.2	15.8	26.8	22.5	17.2	18.0	16.2	27.4	21.1	24.4	22.0	18.1	22.5	23.3	19.5	16.2	21.3	19.1	15.6	20.3
What is being done to regulate and control synthetic biology	18.4	19.1	21.3	10.2	12.4	12.6	20.3	16.2	13.9	16.8	15.2	16.4	15.1	20.5	19.5	6.2	13.3	15.1	18.9	13.6	15.2	12.0	15.2	14.5	14.7	16.4	9.5	12.7	19.1	14.9	21.1	16.2	16.7
What is being done to deal with the social and ethical issues involved	14.0	14.4	10.5	9.9	8.0	10.3	9.5	10.3	7.6	9.8	17.4	8.4	7.2	15.5	10.7	17.0	10.0	8.2	8.3	9.7	7.4	8.7	6.2	11.0	14.1	8.1	10.1	14.5	15.4	10.4	15.7	11.4	9.7
Other (SPONTANEOUS)	1.1	.3			1.5	1.4		.1	.2	1.4	1.0	.5		.2		.4		.3			.8	.4			.5		1.9	.8	.3	.7	.3	.1	.4
None (SPONTANEOUS)	.3	1.3	.4	.8	.9	1.5	2.6		.2		.6		.4	.3	2.6	.3	.6	.6	.2	.7			1.3		1.3		.7	.4			.5	1.4	1.0
DK		3.6	.3		2.1	1.3	2.0	4.6	.9	1.3	1.3	.3	2.8	.4	1.7	.8	.4	5.9	1.2	1.7	3.3	3.0	.7		.8	3.4	1.4	4.3		1.4	1.8	.4	1.3

Mentioned (first, second or third)

What the scientific processes and techniques are

synbiology_process	Country - labels																															
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first, second or third)	33.5	24.0	28.2	30.5	30.9	44.8	27.7	35.3	32.0	41.2	29.7	33.1	34.2	29.4	29.9	30.8	68.2	39.7	28.7	38.5	21.6	28.1	30.8	23.7	45.3	51.4	32.6	22.4	28.6	31.1	38.9	35.2	31.4
Not mentioned	66.5	76.0	71.8	69.5	69.1	55.2	72.3	64.7	68.0	58.8	70.3	66.9	65.8	70.6	70.1	69.2	31.8	60.3	71.3	61.5	78.4	71.9	69.2	76.3	54.7	48.6	67.4	77.6	71.4	68.9	61.1	64.8	68.6

Who is funding the research and why

synbiology_funding	Country																															
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first, second or third)	28.2	19.1	21.1	24.2	19.6	20.6	28.3	29.9	27.7	30.9	14.5	23.5	23.9	20.5	23.3	22.9	19.4	16.7	19.8	22.2	13.7	20.2	26.3	26.3	20.1	18.0	29.3	12.5	16.4	28.9	18.4	23.9	23.7
Not mentioned	71.8	80.9	78.9	75.8	80.4	79.4	71.7	70.1	72.3	69.1	85.5	76.5	76.1	79.5	76.7	77.1	80.6	83.3	80.2	77.8	86.3	79.8	73.7	73.7	79.9	82.0	70.7	87.5	83.6	71.1	81.6	76.1	76.3

What the claimed benefits are

synbiology_benefits	Country																															
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first, second or third)	36.8	48.7	62.0	67.5	56.4	60.5	40.1	46.0	61.2	46.2	36.7	61.2	65.3	43.5	41.3	57.9	33.6	34.9	56.9	45.4	60.3	60.9	46.1	56.5	45.6	65.1	55.1	38.2	56.9	56.4	46.5	54.7	51.8
Not mentioned	63.2	51.3	38.0	32.5	43.6	39.5	59.9	54.0	38.8	53.8	63.3	38.8	34.7	56.5	58.7	42.1	66.4	65.1	43.1	54.6	39.7	39.1	53.9	43.5	54.4	34.9	44.9	61.8	43.1	43.6	53.5	45.3	48.2

What the possible risks are

synbiology_risks	Country																															
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first, second or third)	70.4	68.0	58.8	78.1	64.8	65.0	69.3	53.8	64.7	62.1	59.4	66.1	68.5	58.7	55.8	81.6	67.9	64.8	69.8	51.6	63.0	65.0	60.5	63.2	56.4	64.0	63.4	39.0	61.9	67.5	50.9	63.4	63.0
Not mentioned	29.6	32.0	41.2	21.9	35.2	35.0	30.7	46.2	35.3	37.9	40.6	33.9	31.5	41.3	44.2	18.4	32.1	35.2	30.2	48.4	37.0	35.0	39.5	36.8	43.6	36.0	36.6	61.0	38.1	32.5	49.1	36.6	37.0

Who will benefit and who will bear the risks

synbiology_equity	Country																															
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first, second or third)	48.2	42.3	42.7	52.0	37.5	48.9	35.4	35.7	37.4	30.9	61.0	49.5	33.4	44.9	35.2	51.3	57.8	41.4	37.2	36.9	42.9	38.9	39.2	60.4	45.2	39.0	36.9	34.5	41.0	48.7	39.6	49.0	40.4
Not mentioned	51.8	57.7	57.3	48.0	62.5	51.1	64.6	64.3	62.6	69.1	39.0	50.5	66.6	55.1	64.8	48.7	42.2	58.6	62.8	63.1	57.1	61.1	60.8	39.6	54.8	61.0	63.1	65.5	59.0	51.3	60.4	51.0	59.6

What is being done to regulate and control synthetic biology

synbiology_regulate	Country - labels																															
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first, second or third)	34.0	36.2	31.4	13.3	19.9	19.8	39.1	31.8	26.8	31.8	36.1	26.4	20.5	44.2	32.9	11.4	22.2	24.8	35.2	21.7	23.7	19.0	21.4	28.3	27.0	23.7	15.1	13.2	38.9	24.5	35.8	32.3	28.6
Not mentioned	66.0	63.8	68.6	86.7	80.1	80.2	60.9	68.2	73.2	68.2	63.9	73.6	79.5	55.8	67.1	88.6	77.8	75.2	64.8	78.3	76.3	81.0	78.6	71.7	73.0	76.3	84.9	86.8	61.1	75.5	64.2	67.7	71.4

What is being done to deal with the social and ethical issues involved

synbiology_ethics	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first, second or third)	22.8	35.6	16.9	14.1	13.7	20.5	13.5	20.3	12.3	14.9	37.0	13.9	10.2	31.1	18.5	25.9	15.2	13.8	11.7	15.1	9.9	11.5	11.5	17.9	24.5	9.8	13.5	15.9	34.3	15.8	25.4	20.6	16.1
Not mentioned	77.2	64.4	83.1	85.9	86.3	79.5	86.5	79.7	87.7	85.1	63.0	86.1	89.8	68.9	81.5	74.1	84.8	86.2	88.3	84.9	90.1	88.5	88.5	82.1	75.5	90.2	86.5	84.1	65.7	84.2	74.6	79.4	83.9

Other (SPONTANEOUS)

synbiology_other	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first, second or third)	1.3	.6			2.2	1.4		.2	.2	1.2	1.3	.9	.2	.2		.3	.4	1.2	.4		.6	.3	.2	.3	.9		1.8	.5	.3	.7	1.0	.6	.5
Not mentioned	98.7	99.4	100.0	100.0	97.8	98.6	100.0	99.8	99.8	98.8	98.7	99.1	99.8	99.8	100.0	99.7	99.6	98.8	99.6	100.0	99.4	99.7	99.8	99.7	99.1	100.0	98.2	99.5	99.7	99.3	99.0	99.4	99.5

None (SPONTANEOUS)

synbiology_none	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
No issue (SPONTANEOUS)	4.0	2.7	4.1	3.1	6.7	2.9	4.8	1.6	3.3	1.7	2.1	3.0	2.4	1.3	7.2	5.5	2.2	2.4	3.9	10.2	5.8	1.1	6.8	2.0	7.2	.4	2.9	1.6	1.2	1.5	2.8	3.7	4.5
(some issue mentioned)	96.0	97.3	95.9	96.9	93.3	97.1	95.2	98.4	96.7	98.3	97.9	97.0	97.6	98.7	92.8	94.5	97.8	97.6	96.1	89.8	94.2	98.9	93.2	98.0	92.8	99.6	97.1	98.4	98.8	98.5	97.2	96.3	95.5

DK (SPONTANEOUS)

synbiology_DK	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
DK	4.1	5.1	9.0	4.3	10.2	3.3	11.1	12.5	9.3	11.5	5.3	5.2	10.3	7.6	14.2	.5	3.2	15.3	9.2	12.2	14.5	15.3	14.1	5.8	5.0	8.1	14.4	38.5	5.9	6.5	11.4	3.8	10.1
(some non-DK response)	95.9	94.9	91.0	95.7	89.8	96.7	88.9	87.5	90.7	88.5	94.7	94.8	89.7	92.4	85.8	99.5	96.8	84.7	90.8	87.8	85.5	84.7	85.9	94.2	95.0	91.9	85.6	61.5	94.1	93.5	88.6	96.2	89.9

qb14a
Overall, what would you say about synthetic biology?

synbiology_approve	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Fully approve and do not think that special laws are necessary	4.2	1.7	2.7	2.2	5.9	4.9	3.2	1.7	3.7	3.9	1.9	2.5	3.5	2.9	2.8	.4	2.2	5.9	3.9	2.6	3.8	2.1	3.8	1.8	1.4	1.9	5.0	6.8	1.8	2.3	4.1	2.0	3.4
Approve as long as this is regulated by strict laws	47.3	44.3	26.6	40.2	38.5	31.6	44.0	39.2	36.2	38.6	37.0	31.1	48.0	36.2	41.7	35.1	31.3	40.9	44.8	31.5	31.2	32.3	28.5	37.9	33.4	27.2	36.7	24.4	32.3	34.6	32.7	45.8	36.4
Do not approve except under very special circumstances	21.5	21.0	30.8	22.6	14.9	27.1	17.3	13.2	16.0	12.9	23.0	29.8	14.3	27.9	20.7	15.9	34.2	13.1	23.8	22.5	19.5	11.4	18.1	28.9	17.9	21.0	12.2	12.0	32.8	22.2	25.3	25.9	20.9
Do not approve under any circumstances	15.1	21.4	20.8	26.3	11.4	24.5	16.5	7.4	18.8	19.0	20.7	22.5	9.8	16.7	14.7	33.6	15.3	16.9	8.8	18.6	14.7	19.1	18.2	12.8	36.9	13.5	11.4	13.8	21.8	22.0	14.1	13.5	16.8
DK	12.0	11.6	19.1	8.7	29.2	11.8	19.1	38.5	25.3	25.6	17.4	14.1	24.4	16.3	20.0	15.0	17.0	23.3	18.7	24.9	30.8	35.2	31.4	18.6	10.5	36.4	34.7	43.0	11.3	18.9	23.9	12.7	22.5

Let's speak now about biofuels. Biofuels are made from crops like maize and sugar cane that are turned into ethanol and biodiesel for airplanes, cars and lorries. Unlike oil, biofuels are renewable, would reduce greenhouse gas emissions and make the European Union less dependent on imported oil. Critics, however, say that these biofuels take up precious agricultural land and may lead to higher food prices in the European Union and food shortages in the developing world.

qb15a

To what extent do you think these biofuels should be encouraged or not be encouraged?

firstgen_biofuel_encou	Country																																	EU27
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	
Should definitely be encouraged	34.5	49.7	32.3	31.8	38.4	33.7	24.9	36.9	32.9	32.3	36.7	30.0	28.2	33.5	30.6	51.7	38.8	44.9	40.7	50.4	47.0	15.2	39.2	44.7	35.1	24.7	37.5	18.2	21.9	42.4	25.0	16.1	33.5
Should probably be encouraged	41.7	36.1	32.1	37.1	37.6	42.7	41.2	36.2	33.1	32.0	36.1	46.1	46.2	40.7	43.2	27.8	39.2	38.4	43.8	37.2	34.5	31.3	40.8	43.4	38.7	41.5	30.4	15.4	44.4	37.8	28.0	47.6	37.9
Should probably not be encouraged	14.7	9.3	17.2	18.0	9.5	15.7	17.2	6.2	13.4	15.4	16.1	11.6	10.9	17.0	12.1	10.0	14.4	8.7	7.8	6.7	5.5	17.9	9.5	7.9	13.2	11.7	9.8	6.5	24.0	10.6	22.1	22.1	13.3
Should definitely not be encouraged	7.0	2.9	13.6	7.3	5.4	5.7	10.9	4.6	7.4	12.6	8.4	6.7	2.4	5.7	3.7	3.2	4.4	4.6	3.9	2.2	2.5	17.0	2.3	.7	8.6	6.2	4.2	16.1	7.8	5.2	21.6	9.7	7.1
DK	2.1	2.0	4.8	5.8	9.1	2.1	5.7	16.1	13.2	7.7	2.7	5.6	12.3	3.0	10.3	7.3	3.3	3.5	3.8	3.5	10.4	18.6	8.3	3.4	4.5	15.9	18.0	43.8	1.9	3.9	3.3	4.4	8.2

Now, scientists are working on more sustainable biofuels. These can be made from plant stems and leaves - the things we don't eat, or from trees and algae. With these second generation biofuels, there is no longer the need to use food crops.

qb16a

To what extent do you think these sustainable biofuels should be encouraged or not be encouraged?

sustainable_biofuel_e	Country																																	EU27
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	
Should definitely be encouraged	53.1	74.8	53.1	48.0	51.8	58.4	52.0	44.6	42.1	41.9	65.6	38.7	37.3	60.5	52.8	75.1	50.0	54.6	54.1	57.2	57.6	41.4	47.4	49.8	58.6	43.8	44.3	21.5	63.8	53.4	37.5	58.7	50.5
Should probably be encouraged	34.1	20.8	29.9	34.1	30.6	36.3	30.8	34.3	31.2	32.3	26.4	43.3	42.7	30.1	31.5	14.4	36.8	34.0	36.8	33.9	30.1	35.0	38.8	42.6	30.8	36.3	26.9	16.3	28.8	35.1	33.5	32.1	32.1
Should probably not be encouraged	9.1	2.0	7.1	7.9	5.9	4.1	7.9	3.7	8.8	15.4	4.6	10.3	9.2	5.3	4.7	3.2	8.8	5.6	4.4	4.5	2.0	4.6	4.4	4.3	5.3	4.1	6.8	7.3	3.6	4.7	14.0	5.9	6.5
Should definitely not be encouraged	1.7	.2	5.7	4.6	3.8	.9	3.6	1.2	6.6	5.1	1.7	4.4	1.9	1.2	3.4	.4	2.9	2.6	2.3	1.2	1.2	7.7	1.9	.8	2.6	3.6	3.2	11.8	2.3	2.3	10.6	1.2	3.8
DK	1.9	2.1	4.1	5.4	7.9	.2	5.8	16.2	11.3	5.3	1.7	3.3	8.8	2.9	7.7	7.0	1.5	3.1	2.4	3.1	9.2	11.4	7.6	2.4	2.7	12.1	18.8	43.2	1.5	4.4	4.4	2.2	7.0

Split ballot B

And now thinking about biobanks for biomedical research: These are collections of biological materials (such as blood and/or tissues) and personal data (medical records, lifestyle data) from large numbers of people. Using biobanks, researchers will try to identify the genetic and environmental factors in diseases, to improve prevention, diagnosis and treatment. Participation in biobanks is voluntary. Critics, however, raise questions about privacy, confidentiality and commercial interests regarding the biobanks and about who is going to regulate them.

qb12b

Before today, have you ever heard anything about biobanks?

heard_biobanks	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Heard	28.0	40.2	28.8	39.3	55.1	62.7	24.4	31.4	30.9	52.4	44.0	18.4	19.2	74.7	34.2	44.0	48.7	67.6	31.4	45.8	34.7	23.1	28.5	33.6	52.1	27.8	31.5	15.5	80.3	50.3	42.0	64.5	34.3
Not heard	72.0	59.8	71.2	60.7	44.9	37.3	75.6	68.6	69.1	47.6	56.0	81.6	80.8	25.3	65.8	56.0	51.3	32.4	68.6	54.2	65.3	76.9	71.5	66.4	47.9	72.2	68.5	84.5	19.7	49.7	58.0	35.5	65.7

qb13b

[IF YES] Have you ever talked about biobanks with anyone before today?

talked_biobanks	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	3.9	5.4	7.4	5.0	1.8	5.5	3.1	2.1	4.5	3.6	7.1	3.9	10.8	4.4	7.1	1.9	.3	3.6	3.5	.9		3.4	2.3	2.1	2.0		2.9	3.3	16.6	6.0	5.7	2.9	4.3
Yes, occasionally	20.5	21.4	22.5	27.5	20.4	20.5	22.4	26.8	38.2	20.5	23.4	27.8	31.0	18.9	17.3	11.2	12.2	21.2	11.3	12.2	17.5	23.2	19.6	19.9	27.6	22.2	22.1	11.1	41.5	23.9	19.4	24.8	22.6
Yes, only once or	19.5	18.8	19.5	31.6	27.2	19.2	18.5	24.6	22.0	14.5	19.7	34.7	32.0	25.6	17.2	38.5	22.8	27.7	27.9	21.8	23.9	10.2	16.5	31.4	26.2	29.4	20.2	17.6	22.0	26.4	24.5	25.3	21.9
No, never	56.1	54.3	49.8	34.6	50.5	54.7	56.0	42.4	34.7	60.3	49.6	33.6	26.3	50.9	57.9	48.4	64.0	47.5	57.3	64.6	58.0	63.2	59.7	45.6	43.4	45.6	52.8	66.9	20.0	42.8	49.8	46.7	50.6
DK			.8	1.4				4.1	.6	1.0	.2			.2	.4		.7			.5	.6		2.0	1.0	.8	2.8	2.0	1.1		.9	.6	.4	.6

[IF YES] Have you ever searched for information about biobanks?

infosearch_biobanks	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, frequently	3.2	3.9	4.2	3.7	1.0	4.6	3.3	.6	2.4	4.9	4.4	1.2	4.1	1.8	3.1	1.9		2.0	2.3	.4	.5	3.4	1.9	1.0	2.0		3.2		.4	1.6	3.3	1.9	2.6
Yes, occasionally	8.1	9.3	8.1	8.4	7.8	11.6	10.3	11.2	25.3	15.4	10.7	13.9	21.0	8.7	6.5	6.5	8.5	5.7	6.0	6.7	10.3	18.5	6.5	12.5	10.1	8.9	8.3	8.0	16.0	14.4	7.7	7.5	10.4
Yes, only once or	10.4	12.5	10.1	23.6	10.5	12.6	8.7	10.0	12.8	8.1	10.1	18.7	16.5	10.5	6.7	18.3	11.7	10.7	12.0	11.7	10.2	4.2	11.2	21.7	12.8	12.8	10.8	6.2	9.0	13.5	11.0	9.8	10.9
No, never	78.3	73.9	77.3	63.7	80.7	71.2	77.7	73.4	59.5	68.6	74.2	66.3	58.4	78.9	83.0	73.2	79.4	81.6	79.8	80.2	79.0	73.9	80.4	64.2	74.5	74.3	76.8	84.7	74.6	69.6	77.4	80.7	75.8
DK		.4	.3	.7				4.8		3.0	.7			.2	.7		.4			1.0				.5	.5	4.0	.9	1.1		.8	.6		.3

qb14b

In a hospital doctors ask the patient to sign a form giving permission to carry out an operation – this is called 'informed consent' and it is also required of medical researchers who do research involving members of the public. When a scientist does research on data in a biobank, what do you think about the need for this kind of permission? Researchers should…

biobanks_consent	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Ask for permission for every new piece of research	69.0	51.5	74.8	84.3	66.8	54.5	75.1	59.3	57.9	67.9	56.8	69.7	62.6	63.1	65.1	73.6	70.6	65.6	77.7	71.3	65.7	73.3	61.4	67.5	73.4	75.5	55.0	56.0	59.8	68.9	70.7	59.4	66.9
Ask for permission only once	21.7	24.6	15.4	11.7	17.1	31.7	11.9	22.0	20.6	17.3	33.1	17.6	19.1	26.4	21.4	12.8	16.6	18.9	13.7	12.3	16.2	13.9	22.1	22.6	19.2	9.3	13.2	6.7	32.3	14.1	14.9	26.5	18.3
No need to ask for permission	6.1	16.4	2.9	2.2	9.1	9.9	6.3	6.4	6.8	11.0	6.9	4.3	3.7	6.1	8.1	9.4	6.5	9.5	4.4	6.4	4.2	4.5	3.5	5.3	3.1	1.8	7.0	9.0	6.5	6.0	5.8	10.8	6.0
DK	3.2	7.5	7.0	1.8	7.0	3.8	6.8	12.3	14.7	3.9	3.2	8.3	14.5	4.4	5.4	4.2	6.3	6.1	4.2	10.0	13.8	8.4	13.0	4.6	4.4	13.4	24.8	28.3	1.4	11.0	8.6	3.3	8.9

qb15b

Biobanks will follow up participants over long periods of time. And many biobanks will work with industrial companies to develop new medicines. Who do you think should be primarily responsible for protecting the public interest?

Firstly?

biobanks_publicintere	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Medical doctors	30.8	14.3	14.8	35.2	32.3	16.8	25.7	36.7	25.1	33.7	14.8	26.4	45.0	7.9	25.1	35.6	20.4	31.2	24.7	31.2	22.3	41.9	31.1	27.6	21.1	31.3	34.4	28.1	10.9	32.4	19.5	16.0	25.2
Researchers	16.8	11.8	6.0	18.6	16.4	18.3	12.3	7.1	22.4	11.6	8.4	8.9	13.2	7.2	8.8	11.0	28.8	22.8	21.2	25.2	19.3	6.9	17.8	30.4	18.6	24.0	20.8	8.4	7.2	20.5	7.0	5.8	14.4
Public institutions (universities, hospitals)	9.4	9.8	11.9	10.5	10.5	15.5	9.1	9.2	16.5	10.1	8.8	20.1	9.8	21.5	5.2	4.8	10.3	3.8	7.2	2.2	8.2	6.7	9.2	8.4	10.9	10.4	7.0	9.1	13.2	8.5	10.1	13.3	10.5
National governments	9.7	14.0	13.9	10.1	17.8	9.4	7.5	11.4	9.9	7.7	19.1	6.4	4.2	14.6	20.9	19.1	9.2	9.1	7.1	11.5	7.5	12.0	9.4	8.4	8.7	11.8	8.4	17.5	7.2	4.5	8.8	17.9	12.4
Ethics committees	16.2	20.7	11.0	7.0	2.7	7.0	19.8	8.7	3.2	6.1	10.8	10.5	5.8	16.2	9.2	2.1	4.5	2.8	9.4	3.3	.2	2.0	4.8	3.0	5.2	2.0	.9	2.1	12.9	7.9	13.0	10.6	8.6
International organisations such as the European Union or World Health Organisation	9.1	11.5	12.8	10.0	9.6	18.9	10.2	14.6	9.8	16.2	16.4	6.5	9.4	19.9	9.1	20.4	12.0	4.8	17.1	8.7	16.5	12.2	7.0	13.1	12.7	9.0	7.9	4.6	12.5	10.4	11.0	14.1	10.7
National Data Protection Authorities	5.6	13.3	23.2	5.2	6.0	11.2	7.4	5.8	4.9	13.0	19.1	11.4	4.1	6.3	11.1	5.0	9.9	17.2	11.0	8.5	14.6	8.1	4.8	5.4	15.6	5.9	5.7	2.4	35.9	7.8	23.3	16.8	10.2
Other (SPONTANEOUS)	.5		.0	.4	.2	.8	.2	.1	.2	.3	.5	.6		.3	.0		.4	1.0			.2		.5		.7			.9		.3	.5	.8	.2
None (SPONTANEOUS)	.8	.2	1.3	1.7	.9	.2	1.2	.2	1.1	.3		2.7	.2	.2	1.1		.3	.5	1.0	1.0	1.2	.8	1.5		2.9	.8	.3	.6		1.5	.7	1.2	1.0
DK	1.1	4.4	5.2	1.3	3.6	1.8	6.6	6.2	7.1	1.2	2.2	6.5	8.4	5.8	9.5	2.0	4.2	6.7	1.3	8.5	10.0	9.3	14.1	3.7	3.6	4.8	14.6	26.5	.3	6.3	6.1	3.4	6.8

And secondly?

biobanks_publicintere	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Medical doctors	18.7	16.4	10.9	17.7	16.1	11.5	16.3	17.3	15.7	16.2	14.3	18.5	16.4	8.7	16.5	21.4	17.9	21.5	16.6	25.0	21.6	17.9	15.8	21.3	24.2	15.9	18.0	17.8	12.9	17.6	12.3	8.6	15.5
Researchers	20.9	12.9	10.7	23.3	21.0	18.6	16.0	19.3	24.2	22.9	10.7	10.4	28.1	12.9	12.7	17.4	27.1	24.4	24.3	26.1	20.2	15.7	29.2	26.1	17.5	28.7	24.6	21.3	10.0	19.3	10.6	11.2	18.7
Public institutions (universities, hospitals)	15.0	16.0	19.5	15.9	15.3	18.5	14.1	14.4	22.6	16.9	16.7	20.2	14.9	23.5	11.7	11.6	16.7	13.9	13.1	3.9	18.6	10.7	16.9	11.8	16.4	15.0	10.2	17.4	21.9	18.4	18.6	20.2	16.5
National governments	9.4	12.3	13.3	9.3	15.8	12.8	9.6	11.0	8.9	10.3	16.2	8.8	9.0	13.7	14.2	23.8	5.4	11.9	9.3	11.9	8.6	15.8	13.1	11.4	8.6	10.9	14.0	15.6	5.2	11.5	10.8	13.2	12.0
Ethics committees	13.0	14.0	13.8	10.2	4.0	6.9	12.1	10.6	4.3	7.5	9.7	14.4	8.7	14.9	11.8	2.1	8.4	5.2	10.6	5.4	2.2	4.2	10.9	5.6	8.1	4.5	4.8	5.1	17.2	10.8	14.2	14.7	9.6
International organisations such as the European Union or World Health Organisation	11.6	10.5	14.0	15.4	16.7	14.2	17.4	14.7	15.3	13.2	15.0	12.4	13.3	15.7	13.8	16.8	12.9	4.8	14.8	13.4	9.7	19.6	6.6	14.1	10.5	13.0	16.0	15.6	13.4	9.9	11.7	16.2	14.2
National Data Protection Authorities	10.7	15.0	16.4	7.6	7.6	13.9	10.5	9.2	6.8	12.7	15.7	12.8	5.6	8.7	14.8	6.9	10.9	14.6	10.6	12.8	16.9	11.5	3.9	9.6	12.2	10.1	9.4	2.2	18.0	11.0	17.9	13.7	10.8
Other (SPONTANEOUS)		.2	.1		.4	.6	.4	.6	.2			.3		.2				.2	.2		.5				.1		.5	.7			.5	.5	.2
None (SPONTANEOUS)	.3	.2	.5	.6	1.3	1.4	1.3				.7	1.2	.6	1.1	2.5			.4	.2	.5	.4		.5		.6		1.7	.7	.8	.5	1.3	1.1	.9
DK	.5	2.4	.9		1.8	1.6	2.4	2.8	1.9	.4	.9	1.0	3.4	.7	1.9		.8	3.1	.3	1.1	1.3	4.5	3.0		1.8	2.1	.6	3.6	.5	1.0	2.2	.5	1.6

Mentioned (first or second)

Medical doctors

biobanks_doctors	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	49.1	30.0	25.0	52.5	47.7	28.1	40.7	52.9	39.5	49.6	28.8	43.2	60.0	16.1	39.9	56.5	37.5	51.2	40.9	53.7	41.5	58.1	44.4	48.2	43.7	46.3	49.7	41.0	23.8	48.6	30.9	24.3	39.5
Not mentioned	50.9	70.0	75.0	47.5	52.3	71.9	59.3	47.1	60.5	50.4	71.2	56.8	40.0	83.9	60.1	43.5	62.5	48.8	59.1	46.3	58.5	41.9	55.6	51.8	56.3	53.7	50.3	59.0	76.2	51.4	69.1	75.7	60.5

Researchers

biobanks_researchers	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	37.3	24.1	16.0	41.2	36.5	36.5	27.0	25.1	44.6	34.1	18.8	18.3	38.9	19.3	20.1	28.0	54.6	45.5	44.9	48.8	37.3	21.0	42.4	55.5	34.9	51.0	41.7	24.0	17.1	38.3	16.9	16.5	31.7
Not mentioned	62.7	75.9	84.0	58.8	63.5	63.5	73.0	74.9	55.4	65.9	81.2	81.7	61.1	80.7	79.9	72.0	45.4	54.5	55.1	51.2	62.7	79.0	57.6	44.5	65.1	49.0	58.3	76.0	82.9	61.7	83.1	83.5	68.3

Public institutions (universities, hospitals)

biobanks_institute	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	24.1	25.1	30.1	25.9	25.1	33.7	22.1	22.7	37.2	26.8	25.1	38.5	23.4	43.5	15.7	16.2	26.3	16.6	20.0	5.7	24.6	16.4	23.4	19.8	26.2	24.5	15.6	21.8	35.1	25.4	27.4	32.5	25.7
Not mentioned	75.9	74.9	69.9	74.1	74.9	66.3	77.9	77.3	62.8	73.2	74.9	61.5	76.6	56.5	84.3	83.8	73.7	83.4	80.0	94.3	75.4	83.6	76.6	80.2	73.8	75.5	84.4	78.2	64.9	74.6	72.6	67.5	74.3

National governments

biobanks_government	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	19.0	25.7	26.3	19.2	32.8	22.0	16.3	21.7	18.1	17.8	34.9	14.4	12.4	27.5	33.5	42.4	14.4	20.1	16.2	22.2	15.1	26.2	20.5	19.4	16.7	22.1	20.4	28.8	12.4	15.1	18.9	30.6	23.5
Not mentioned	81.0	74.3	73.7	80.8	67.2	78.0	83.7	78.3	81.9	82.2	65.1	85.6	87.6	72.5	66.5	57.6	85.6	79.9	83.8	77.8	84.9	73.8	79.5	80.6	83.3	77.9	79.6	71.2	87.6	84.9	81.1	69.4	76.5

Ethics committees

biobanks_ethicscomm	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	29.0	34.0	23.9	16.9	6.5	13.8	31.0	18.6	7.2	13.5	20.3	23.6	13.8	30.2	19.8	4.2	12.5	7.6	19.8	8.2	2.2	5.7	13.9	8.4	12.7	6.3	5.0	5.8	30.0	17.8	26.2	24.6	17.4
Not mentioned	71.0	66.0	76.1	83.1	93.5	86.2	69.0	81.4	92.8	86.5	79.7	76.4	86.2	69.8	80.2	95.8	87.5	92.4	80.2	91.8	97.8	94.3	86.1	91.6	87.3	93.7	95.0	94.2	70.0	82.2	73.8	75.4	82.6

International organisations such as the European Union or World Health Organisation

biobanks_int_orgs	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	20.5	21.6	25.9	24.9	25.6	32.8	26.2	28.4	23.9	29.2	31.1	17.8	21.5	34.6	21.4	36.9	24.3	9.3	31.6	20.8	25.1	29.9	12.5	26.7	22.5	21.3	21.5	16.0	25.8	19.5	21.8	29.6	23.8
Not mentioned	79.5	78.4	74.1	75.1	74.4	67.2	73.8	71.6	76.1	70.8	68.9	82.2	78.5	65.4	78.6	63.1	75.7	90.7	68.4	79.2	74.9	70.1	87.5	73.3	77.5	78.7	78.5	84.0	74.2	80.5	78.2	70.4	76.2

National Data Protection Authorities

biobanks_data_orgs	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	16.1	27.7	38.6	12.6	13.2	24.9	17.2	14.4	11.1	25.5	34.5	23.0	9.2	14.5	24.3	11.8	20.3	30.7	21.4	20.1	29.6	18.5	8.1	14.7	27.0	15.4	13.7	4.0	53.9	18.0	40.0	29.9	20.2
Not mentioned	83.9	72.3	61.4	87.4	86.8	75.1	82.8	85.6	88.9	74.5	65.5	77.0	90.8	85.5	75.7	88.2	79.7	69.3	78.6	79.9	70.4	81.5	91.9	85.3	73.0	84.6	86.3	96.0	46.1	82.0	60.0	70.1	79.8

Other (SPONTANEOUS)

biobanks_other	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	.5	.2	.1	.4	.6	1.0	.6	.6	.4	.3	.5	.9		.5	.0		.4	1.2	.2		.6		.5		.8		.5	1.2		.3	.9	1.3	.3
Not mentioned	99.5	99.8	99.9	99.6	99.4	99.0	99.4	99.4	99.6	99.7	99.5	99.1	100.0	99.5	100.0	100.0	99.6	98.8	99.8	100.0	99.4	100.0	99.5	100.0	99.2	100.0	99.5	98.8	100.0	99.7	99.1	98.7	99.7

None (SPONTANEOUS)

biobanks_none	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
No actor (SPONTANEOUS)	1.0	.3	1.8	2.2	2.1	1.5	2.3	.2	1.1	.3	.7	3.8	.7	1.3	3.4		.3	.9	1.2	1.5	1.5	.8	2.0		3.5	.8	1.8	1.1	.8	2.1	2.0	2.2	1.9
(some actor mentioned)	99.0	99.7	98.2	97.8	97.9	98.5	97.7	99.8	98.9	99.7	99.3	96.2	99.3	98.7	96.6	100.0	99.7	99.1	98.8	98.5	98.5	99.2	98.0	100.0	96.5	99.2	98.2	98.9	99.2	97.9	98.0	97.8	98.1

DK

biobanks_DK	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
DK	1.1	4.4	5.2	1.3	3.6	1.8	6.6	6.2	7.1	1.2	2.2	6.5	8.4	5.8	9.5	2.0	4.2	6.7	1.3	8.5	10.0	9.3	14.1	3.7	3.6	4.8	14.6	26.5	.3	6.3	6.1	3.4	6.8
(some non-DK response)	98.9	95.6	94.8	98.7	96.4	98.2	93.4	93.8	92.9	98.8	97.8	93.5	91.6	94.2	90.5	98.0	95.8	93.3	98.7	91.5	90.0	90.7	85.9	96.3	96.4	95.2	85.4	73.5	99.7	93.7	93.9	96.6	93.2

qb16b
Would you be willing to provide information about yourself to a biobank?

biobank_participate	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, definitely	16.1	33.8	11.0	4.0	18.8	24.4	17.9	12.3	14.4	15.2	20.9	4.2	15.6	39.9	14.9	28.5	9.6	26.1	12.6	5.5	8.0	13.2	9.8	6.3	10.7	6.6	9.7	11.0	53.8	15.1	17.6	36.2	14.4
Yes, probably	35.5	37.6	30.7	30.5	30.5	43.5	29.3	35.6	33.9	36.6	38.7	30.5	36.8	41.7	34.6	24.3	37.5	32.7	28.8	18.9	24.5	33.0	29.6	33.7	34.7	26.4	23.4	12.6	38.7	29.6	29.6	45.9	31.9
No, probably not	25.6	16.0	25.2	23.8	17.7	18.6	16.8	17.2	18.8	22.8	23.7	31.1	20.0	11.2	21.5	11.4	30.4	21.2	29.9	29.7	22.9	18.7	26.7	31.0	26.7	27.5	18.7	16.5	4.4	22.1	22.3	11.5	21.8
No, never	20.5	9.0	26.2	36.9	24.6	9.8	29.4	22.7	16.6	17.9	11.8	26.4	11.6	3.2	23.6	20.1	16.7	16.9	24.6	39.4	36.1	17.8	17.6	23.9	22.7	18.2	21.2	26.8	2.6	18.7	21.2	4.0	22.1
DK	2.4	3.6	6.9	4.7	8.3	3.7	6.6	12.2	16.4	7.5	4.9	7.7	15.9	3.9	5.4	15.6	5.8	3.1	4.0	6.4	8.5	17.2	16.3	5.1	5.2	21.4	27.0	33.2	.5	14.5	9.3	2.4	9.7

qb17b
In order to understand the causes of diseases researchers need as much information as possible about the people in the biobank. Would you personally be concerned or reluctant about the collection of any of the following types of data and materials from you?

Blood samples

biobankinfo_blood	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	30.8	18.8	37.0	36.4	34.8	16.4	29.5	30.0	24.5	17.8	21.5	34.8	27.4	16.6	25.8	30.0	35.2	24.7	31.1	31.7	24.8	28.1	29.2	39.3	32.5	30.9	35.1	26.1	12.8	23.9	25.7	11.4	30.0
Not mentioned	69.2	81.2	63.0	63.6	65.2	83.6	70.5	70.0	75.5	82.2	78.5	65.2	72.6	83.4	74.2	70.0	64.8	75.3	68.9	68.3	75.2	71.9	70.8	60.7	67.5	69.1	64.9	73.9	87.2	76.1	74.3	88.6	70.0

Tissue collected during medical operations

biobankinfo_tissue	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	32.4	22.8	39.4	41.4	31.2	15.8	28.5	28.7	27.7	6.8	25.8	43.1	27.2	15.6	27.4	27.5	28.4	26.5	32.2	29.5	27.2	22.2	27.1	38.1	32.5	26.2	22.1	22.9	17.1	25.1	25.4	12.5	30.0
Not mentioned	67.6	77.2	60.6	58.6	68.8	84.2	71.5	71.3	72.3	93.2	74.2	56.9	72.8	84.4	72.6	72.5	71.6	73.5	67.8	70.5	72.8	77.8	72.9	61.9	67.5	73.8	77.9	77.1	82.9	74.9	74.6	87.5	70.0

Your genetic profile

biobankinfo_genes	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	32.7	27.2	47.7	42.4	32.4	27.1	35.3	27.9	26.3	19.5	36.7	41.1	23.0	24.5	31.1	34.6	40.3	24.9	40.3	31.8	31.2	22.1	31.5	44.2	41.9	23.5	24.1	22.1	18.1	33.8	36.0	28.8	34.1
Not mentioned	67.3	72.8	52.3	57.6	67.6	72.9	64.7	72.1	73.7	80.5	63.3	58.9	77.0	75.5	68.9	65.4	59.7	75.1	59.7	68.2	68.8	77.9	68.5	55.8	58.1	76.5	75.9	77.9	81.9	66.2	64.0	71.2	65.9

Medical record from your doctor

biobankinfo_records	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	35.9	27.1	45.9	32.3	32.8	28.6	37.2	35.9	20.1	21.7	42.6	38.2	21.1	27.9	32.9	30.3	36.1	26.2	31.0	35.7	27.4	31.8	22.5	41.5	32.4	19.6	27.3	17.5	23.7	26.1	35.4	36.9	32.6
Not mentioned	64.1	72.9	54.1	67.7	67.2	71.4	62.8	64.1	79.9	78.3	57.4	61.8	78.9	72.1	67.1	69.7	63.9	73.8	69.0	64.3	72.6	68.2	77.5	58.5	67.6	80.4	72.7	82.5	76.3	73.9	64.6	63.1	67.4

Lifestyle (what you eat, how much exercise you take, etc.)

biobankinfo_lifestyle	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	26.2	20.5	38.6	22.2	25.7	14.3	24.8	17.5	15.3	12.9	33.6	28.6	11.8	20.2	22.7	16.4	23.4	20.4	18.3	27.0	21.2	17.7	17.2	19.3	25.2	17.1	19.2	9.1	16.1	14.5	25.0	17.8	24.1
Not mentioned	73.8	79.5	61.4	77.8	74.3	85.7	75.2	82.5	84.7	87.1	66.4	71.4	88.2	79.8	77.3	83.6	76.6	79.6	81.7	73.0	78.8	82.3	82.8	80.7	74.8	82.9	80.8	90.9	83.9	85.5	75.0	82.2	75.9

Other (SPONTANEOUS)

biobankinfo_other	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Mentioned (first or second)	1.5	.7	.3	.4	2.8	2.3	.2	1.5	.9	3.9	.5	2.1	1.4	1.8	.8	.4	.2	.2	.9		2.4	.9			3.3		.9	.9	.9	.4	.2	1.7	.8
Not mentioned	98.5	99.3	99.7	99.6	97.2	97.7	99.8	98.5	99.1	96.1	99.5	97.9	98.6	98.2	99.2	99.6	99.8	99.8	99.1	100.0	97.6	99.1	100.0	100.0	96.7	100.0	99.1	99.1	99.1	99.6	99.8	98.3	99.2

None (SPONTANEOUS)

biobankinfo_none	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
No information (SPONTANEOUS)	26.5	44.7	15.8	30.1	32.8	40.5	31.4	29.7	30.9	13.4	29.5	18.5	25.1	49.0	37.1	39.1	18.9	37.5	26.9	30.1	25.5	21.6	21.2	11.7	25.9	21.0	18.6	13.2	65.1	21.4	24.4	40.0	27.5
(some information mentioned)	73.5	55.3	84.2	69.9	67.2	59.5	68.6	70.3	69.1	86.6	70.5	81.5	74.9	51.0	62.9	60.9	81.1	62.5	73.1	69.9	74.5	78.4	78.8	88.3	74.1	79.0	81.4	86.8	34.9	78.6	75.6	60.0	72.5

DK

biobankinfo_DK	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
DK	2.7	6.8	7.2	4.3	7.1	4.5	5.8	14.6	11.7	4.0	2.9	9.1	14.7	4.2	9.4	12.5	7.7	11.8	3.5	8.4	16.2	29.1	17.9	4.7	6.3	27.8	25.9	37.0	.9	16.0	11.6	3.5	9.8
(some non-DK response)	97.3	93.2	92.8	95.7	92.9	95.5	94.2	85.4	88.3	96.0	97.1	90.9	85.3	95.8	90.6	87.5	92.3	88.2	96.5	91.6	83.8	70.9	82.1	95.3	93.7	72.2	74.1	63.0	99.1	84.0	88.4	96.5	90.2

qb18b

Some countries in the European Union have one or more biobanks. Do you think the sharing and exchange of personal data and biological materials tissue across Member States should be encouraged?

biobank_international	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, definitely	25.6	30.6	18.0	12.0	27.2	19.8	27.2	13.9	14.2	25.1	25.3	6.4	18.8	21.6	16.4	51.6	16.9	18.6	16.8	13.5	20.9	20.4	11.8	17.0	19.0	8.5	13.7	12.1	29.3	20.9	23.1	25.1	18.7
Yes, probably	42.8	32.2	25.4	39.2	33.6	48.7	30.3	35.3	42.5	35.5	29.0	32.9	38.7	37.1	32.3	25.1	41.4	39.5	39.5	37.7	38.1	31.5	38.7	47.1	41.1	38.8	31.5	12.0	39.9	35.3	25.3	41.9	34.3
No, probably not	16.3	18.6	20.8	19.0	13.6	18.2	13.6	15.2	14.9	17.5	20.4	25.5	16.1	18.9	21.1	6.8	22.8	17.6	19.6	20.0	13.1	10.5	16.1	18.1	15.8	10.4	10.8	12.3	16.9	13.2	21.0	16.9	17.1
No, definitely not	10.7	13.5	26.0	21.8	14.0	9.2	16.7	13.9	10.1	11.4	19.5	21.6	5.0	13.6	18.6	3.9	7.4	15.2	13.9	14.5	11.9	12.8	5.2	9.1	13.6	4.6	7.7	16.2	9.2	9.3	18.9	10.4	15.1
DK	4.7	5.1	9.8	8.0	11.6	4.1	12.1	21.7	18.3	10.6	5.8	13.6	21.3	8.8	11.5	12.6	11.6	9.1	10.3	14.2	15.9	24.8	28.2	8.8	10.5	37.8	36.3	47.4	4.7	21.4	11.8	5.7	14.8

All respondents - no split ballot
qb19
For each of the following people and groups, do you think they are doing a good job for society or not doing a good job for society?
Newspapers, magazines and television which report on biotechnology

goodjob_news	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	75.3	71.5	62.1	77.3	66.9	88.4	52.4	53.1	55.1	83.9	80.7	75.8	58.7	79.5	46.4	84.3	83.4	51.5	75.4	87.2	80.5	54.8	71.7	86.2	65.8	79.4	82.5	47.9	78.9	82.6	64.0	57.9	63.8
Not doing a good job for society	18.3	19.8	18.6	17.4	19.6	9.1	39.1	18.8	20.3	9.9	12.5	14.3	16.4	11.1	33.2	8.6	11.3	34.1	14.7	6.8	8.8	19.6	11.6	10.0	26.0	8.6	7.5	15.1	19.0	11.1	22.8	28.5	20.9
DK	6.4	8.7	19.3	5.3	13.6	2.6	8.5	28.1	24.6	6.1	6.8	10.0	24.8	9.4	20.3	7.1	5.3	14.3	9.9	6.0	10.6	25.6	16.7	3.8	8.3	12.0	10.0	36.9	2.2	6.3	13.2	13.6	15.2

Industries which develop new products with biotechnology

goodjob_industry	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	76.2	68.1	46.3	49.2	59.5	79.3	66.3	45.7	49.8	67.7	70.0	59.6	47.2	71.3	54.7	73.7	78.2	58.8	73.2	77.4	62.7	46.3	62.9	81.3	49.5	45.9	61.9	40.8	80.1	72.7	56.5	56.0	58.2
Not doing a good job for society	15.2	18.4	24.0	39.6	19.6	13.4	21.0	17.9	19.7	19.0	15.6	20.2	15.4	12.6	15.7	11.9	10.3	20.8	14.6	11.7	16.3	15.6	13.4	10.1	40.3	20.0	10.9	18.3	14.2	15.8	19.1	20.4	18.6
DK	8.6	13.5	29.8	11.3	20.9	7.3	12.6	36.4	30.5	13.3	14.4	20.1	37.4	16.1	29.5	14.4	11.5	20.5	12.3	11.0	21.0	38.0	23.7	8.6	10.2	34.1	27.2	40.8	5.8	11.5	24.3	23.6	23.2

University scientists who conduct research in biotechnology

goodjob_university	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	88.7	88.0	72.9	81.0	79.3	95.6	86.3	59.5	67.2	82.5	89.9	74.5	67.5	88.3	70.7	87.4	87.6	79.7	87.6	89.5	82.3	61.6	76.2	88.4	78.3	65.8	69.3	47.3	97.1	84.9	78.4	73.6	76.7
Not doing a good job for society	7.3	5.2	7.5	12.6	7.7	2.3	5.7	10.5	13.2	10.0	3.4	12.5	5.8	1.7	6.7	4.6	4.7	6.7	5.9	3.2	5.7	5.9	6.6	6.6	14.2	11.1	9.0	14.2	1.0	8.3	6.2	11.1	7.7
DK	4.0	6.8	19.6	6.5	13.0	2.2	8.0	30.0	19.5	7.4	6.7	13.0	26.6	10.1	22.7	7.9	7.7	13.6	6.5	7.3	12.0	32.6	17.2	5.0	7.5	23.2	21.7	38.6	1.9	6.8	15.4	15.3	15.6

Consumer organisations which test biotechnological products

goodjob_consumerorg	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	89.8	86.2	77.9	71.8	69.6	87.3	83.5	50.9	63.6	79.0	92.4	80.2	60.6	84.7	60.7	81.9	87.3	58.7	86.0	83.1	77.9	57.5	70.1	83.9	69.2	53.8	67.0	41.4	86.9	72.0	79.3	70.8	73.1
Not doing a good job for society	6.9	6.3	5.6	19.6	11.2	9.8	9.2	13.5	14.3	11.3	4.4	10.5	8.6	5.3	11.4	7.6	5.9	20.2	7.1	7.4	8.6	8.1	10.4	9.8	22.5	17.9	9.4	15.4	8.9	17.0	9.3	11.8	9.9
DK	3.3	7.6	16.5	8.6	19.3	2.9	7.3	35.6	22.1	9.7	3.2	9.4	30.8	10.0	27.9	10.5	6.8	21.1	6.9	9.4	13.5	34.3	19.5	6.3	8.4	28.3	23.6	43.2	4.2	11.0	11.4	17.4	17.0

Environmental groups who campaign about biotechnology

goodjob_envgroups	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	72.7	69.4	69.2	86.1	71.2	74.8	70.3	48.1	57.8	63.8	63.4	71.9	61.7	83.1	48.9	88.8	70.4	56.5	73.5	78.0	76.6	60.3	67.2	77.2	76.9	61.5	70.3	41.6	38.4	66.4	70.1	61.4	65.9
Not doing a good job for society	20.1	18.8	10.1	7.4	10.4	18.9	18.2	14.3	15.8	21.4	25.9	14.1	9.0	6.8	22.7	4.0	17.6	21.0	14.7	11.2	7.9	8.8	10.2	12.5	14.6	11.8	8.7	16.2	56.2	22.4	15.0	20.5	14.6
DK	7.2	11.8	20.7	6.4	18.4	6.3	11.5	37.6	26.4	14.8	10.7	14.0	29.3	10.1	28.4	7.3	12.0	22.6	11.8	10.7	15.5	30.9	22.5	10.3	8.5	26.6	20.9	42.2	5.4	11.2	15.0	18.0	19.5

(NATIONALITY) Government making laws about biotechnology

goodjob_government	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	73.8	63.8	42.2	69.1	64.3	86.9	56.3	32.5	47.5	68.6	79.5	63.3	46.0	76.7	45.4	79.1	69.1	36.2	74.2	65.4	58.4	51.0	56.3	75.6	56.7	48.8	59.8	40.4	80.9	66.6	62.3	46.1	55.2
Not doing a good job for society	17.6	23.5	24.8	18.9	16.2	8.0	26.5	23.8	19.0	16.9	9.0	20.2	20.9	9.7	22.8	6.0	17.3	36.1	13.4	21.0	20.5	11.8	15.2	15.0	31.1	25.9	13.1	16.4	14.1	20.9	18.5	33.4	19.9
DK	8.6	12.8	33.0	12.0	19.5	5.1	17.3	43.7	33.5	14.5	11.5	16.5	33.1	13.6	31.8	14.9	13.7	27.7	12.4	13.6	21.1	37.2	28.5	9.4	12.2	25.3	27.1	43.2	5.0	12.6	19.2	20.5	24.8

Retailers who ensure our food is safe

goodjob_retailers	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	80.0	55.2	58.9	65.3	59.8	79.2	64.2	52.3	51.2	81.1	69.4	81.7	54.5	65.1	64.4	69.3	77.3	38.9	78.0	72.7	67.5	50.6	52.9	84.3	52.3	27.9	63.0	39.7	79.6	68.6	68.2	49.3	61.2
Not doing a good job for society	15.5	37.3	20.6	25.4	24.0	16.6	25.8	19.1	25.9	13.3	20.0	10.5	16.1	23.5	21.6	16.0	16.1	42.9	10.6	17.7	18.6	16.8	23.2	10.0	39.6	47.5	11.5	17.3	15.6	19.3	17.2	37.3	22.1
DK	4.4	7.6	20.4	9.3	16.2	4.2	10.0	28.6	22.9	5.6	10.6	7.8	29.3	11.3	14.0	14.7	6.6	18.2	11.3	9.6	13.9	32.6	24.0	5.7	8.1	24.6	25.6	43.0	4.7	12.1	14.6	13.3	16.7

The European Union making laws about biotechnology for all EU Member States

goodjob_EU	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	78.5	55.2	45.1	71.6	71.9	79.9	64.4	39.5	56.2	71.9	79.7	56.4	56.7	76.7	41.1	84.1	79.4	52.2	84.4	78.2	73.1	59.5	64.4	83.2	67.0	55.5	68.2	39.4	78.0	71.5	54.5	44.7	60.0
Not doing a good job for society	15.1	27.3	19.5	17.6	8.8	14.8	19.2	17.4	15.5	15.9	10.3	25.2	9.9	9.5	23.0	4.6	9.8	20.5	7.6	9.1	7.5	6.7	11.1	9.0	22.0	16.6	8.9	16.9	15.8	15.3	20.5	25.6	15.8
DK	6.4	17.5	35.4	10.8	19.3	5.3	16.4	43.1	28.3	12.2	10.0	18.4	33.4	13.8	35.9	11.2	10.8	27.4	8.0	12.7	19.4	33.8	24.5	7.8	11.0	27.9	22.9	43.7	6.2	13.3	25.0	29.7	24.3

Ethics committees who consider the moral and ethical aspects of biotechnology

goodjob_ethicscomms	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	77.0	71.9	55.9	78.0	60.5	83.2	62.3	41.1	52.7	66.6	81.1	66.6	55.0	69.0	50.9	78.3	77.5	48.2	80.5	75.5	66.1	54.2	64.1	81.9	70.6	54.6	62.9	39.1	89.2	74.5	63.1	60.6	61.0
Not doing a good job for society	15.9	13.9	14.6	12.8	18.5	10.2	21.0	15.9	19.2	19.9	11.2	15.7	8.2	13.5	18.3	7.6	11.8	22.2	9.2	13.4	13.1	6.3	12.0	10.2	18.1	14.3	10.3	15.5	7.9	12.6	18.1	17.3	15.9
DK	7.1	14.2	29.5	9.2	21.0	6.6	16.6	43.0	28.1	13.6	7.6	17.8	36.7	17.4	30.8	14.1	10.7	29.6	10.2	11.0	20.8	39.5	23.9	8.0	11.3	31.1	26.8	45.4	2.9	12.9	18.8	22.1	23.1

Religious leaders who say what is right and wrong in the development of biotechnology

goodjob_religion	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	24.6	14.0	24.7	61.1	36.8	13.8	14.3	25.7	35.1	25.2	17.7	37.9	39.5	8.1	25.1	63.2	42.5	19.0	44.2	52.5	49.6	50.0	45.5	57.7	35.4	24.6	55.0	36.5	11.9	44.3	16.2	10.3	31.1
Not doing a good job for society	67.9	75.9	43.2	27.2	45.8	79.3	75.0	30.0	35.1	59.4	73.4	40.3	23.0	81.0	46.8	24.5	41.7	51.6	38.4	30.1	27.0	15.5	29.3	31.5	50.5	39.4	15.3	17.8	84.8	41.1	63.7	71.6	45.9
DK	7.5	10.1	32.1	11.7	17.4	7.0	10.7	44.3	29.8	15.5	8.9	21.8	37.6	10.9	28.1	12.3	15.8	29.4	17.3	17.4	23.4	34.5	25.2	10.8	14.1	36.0	29.7	45.7	3.3	14.6	20.1	18.1	23.0

Medical doctors

goodjob_doctors	Country																																	
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Doing a good job for society	90.2	84.2	80.1	87.9	89.7	96.1	82.0	58.2	71.3	83.3	93.2	87.6	74.1	85.7	80.9	92.2	91.5	76.8	91.3	89.9	84.7	77.1	77.0	93.7	82.9	67.8	78.9	52.3	98.0	87.4	79.8	74.6	81.4
Not doing a good job for society	6.8	9.7	7.7	7.9	4.8	2.2	9.5	10.1	11.9	9.9	2.5	7.3	6.7	6.1	6.9	1.7	4.1	13.4	4.5	4.1	6.2	3.8	11.2	4.0	10.1	8.9	4.3	9.9	2.0	5.9	7.0	10.0	7.7
DK	3.0	6.0	12.3	4.3	5.5	1.7	8.4	31.6	16.9	6.7	4.4	5.1	19.2	8.2	12.2	6.1	4.4	9.8	4.3	6.0	9.1	19.1	11.8	2.3	7.0	23.3	16.8	37.8		6.6	13.1	15.4	10.8

Split ballot A
qb20a
Which of the following views is closest to your own?
Decisions about synthetic biology should be based primarily on…

synbiology_science	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
scientific evidence	64.6	46.5	34.3	46.2	59.5	55.0	58.8	37.3	57.8	58.6	51.4	44.0	48.2	59.4	55.3	39.8	62.6	54.4	68.7	60.8	58.4	29.9	51.4	61.6	42.4	41.3	56.0	34.5	39.9	52.3	42.4	53.2	52.4
the moral and ethical issues	28.0	46.9	52.3	45.5	24.5	40.2	26.9	32.9	28.7	22.2	40.3	44.1	35.3	31.7	28.7	50.1	32.5	31.9	21.8	30.2	23.4	43.6	33.0	31.6	47.3	39.2	23.2	23.5	48.2	38.5	41.7	36.7	33.7
DK	7.4	6.6	13.4	8.3	16.0	4.8	14.3	29.8	13.6	19.2	8.3	11.9	16.5	8.9	16.0	10.1	4.9	13.7	9.4	9.0	18.2	26.4	15.6	6.8	10.3	19.5	20.7	42.0	11.9	9.2	15.9	10.2	13.9

qb21a
Which of the following views is closest to your own?
Decisions about synthetic biology should be based mainly on…

synbiology_expert	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
the advice of experts	69.5	58.7	46.0	54.8	63.6	73.1	59.8	41.4	64.8	55.5	70.4	49.9	56.0	61.8	59.4	58.7	72.9	60.9	70.6	54.6	57.0	57.6	56.1	68.5	56.3	46.6	59.3	34.8	66.5	57.9	53.4	66.9	58.8
what the majority of people in a country thinks	24.1	35.7	41.1	38.6	23.9	22.5	26.9	30.1	24.3	27.2	21.2	42.5	26.1	26.7	27.5	31.4	22.1	28.0	22.0	35.0	24.9	25.3	30.9	26.5	33.4	37.3	22.4	21.9	24.5	33.4	31.9	22.2	29.0
DK	6.3	5.7	12.9	6.6	12.5	4.4	13.3	28.5	11.0	17.3	8.4	7.6	18.0	11.6	13.2	9.9	4.9	11.1	7.4	10.4	18.1	17.1	13.0	5.0	10.3	16.2	18.3	43.3	9.0	8.7	14.8	10.8	12.2

qb22a
Which of the following views is closest to your own?
Synthetic biology should be…

synbiology_market	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
tightly regulated by Government	72.9	79.8	79.0	88.7	80.6	84.7	75.6	65.7	70.7	74.0	83.0	78.4	72.2	83.0	81.9	88.5	78.1	80.4	77.4	70.6	75.9	77.4	71.1	83.1	83.0	77.2	67.5	48.9	83.5	79.6	74.4	83.0	77.0
allowed to operate in the market place like a business	19.6	15.3	11.1	5.5	7.0	9.2	11.2	9.6	14.4	10.6	10.0	13.0	8.9	8.3	6.9	3.3	15.0	8.1	14.7	17.4	7.1	3.8	15.3	11.5	7.6	7.4	6.9	11.2	9.1	11.3	10.5	9.5	10.7
DK	7.5	4.8	9.9	5.8	12.4	6.2	13.1	24.7	14.9	15.4	6.9	8.7	18.9	8.7	11.2	8.2	6.9	11.6	8.0	12.0	17.0	18.8	13.6	5.5	9.4	15.4	25.7	39.8	7.4	9.1	15.1	7.5	12.3

Split ballot B
qb20b
Which of the following views is closest to your own?
Decisions about animal cloning should be based primarily on…

animalcloning_scienc	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
scientific evidence	52.5	31.1	27.0	42.3	59.0	45.2	42.1	36.7	52.4	42.9	40.5	27.6	36.3	36.5	41.8	35.1	45.2	46.4	60.9	50.7	52.2	36.8	45.8	48.4	40.5	34.1	48.1	39.8	37.0	42.0	30.8	40.1	43.2
the moral and ethical issues	42.3	65.5	59.7	53.6	29.1	49.2	48.0	38.1	34.1	47.1	49.9	64.6	44.2	55.6	45.3	58.3	49.0	43.2	34.8	43.2	35.4	38.4	40.8	46.8	51.2	42.6	27.1	31.5	56.3	50.7	59.5	53.2	44.6
DK	5.2	3.3	13.3	4.1	11.8	5.6	9.8	25.2	13.5	10.0	9.6	7.7	19.5	7.9	12.9	6.6	5.8	10.4	4.3	6.0	12.4	24.8	13.4	4.8	8.3	23.3	24.8	28.7	6.7	7.3	9.7	6.7	12.2

qb21b
Which of the following views is closest to your own?
Decisions about animal cloning should be based mainly on…

animalcloning_expert	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
the advice of experts	63.7	51.9	39.1	50.6	61.9	61.5	50.0	42.9	58.3	52.2	58.0	34.9	47.3	46.2	49.8	57.4	60.3	59.7	61.4	46.5	54.3	52.9	50.0	54.5	56.8	36.0	51.9	49.0	59.4	51.3	40.0	63.1	51.2
what the majority of people in a country thinks	31.7	43.9	47.5	45.3	27.5	33.1	38.6	38.0	27.8	37.5	30.4	58.2	34.7	43.6	39.0	36.4	34.8	29.7	33.7	46.9	30.6	30.3	35.0	41.4	37.5	48.0	26.0	24.4	31.1	42.4	49.4	25.6	36.8
DK	4.6	4.1	13.4	4.0	10.6	5.4	11.4	19.1	13.8	10.3	11.5	7.0	18.0	10.2	11.2	6.2	4.9	10.6	4.9	6.6	15.1	16.8	15.0	4.1	5.7	16.0	22.2	26.6	9.6	6.3	10.7	11.3	12.0

qb22b
Which of the following views is closest to your own?
Animal cloning should be…

animalcloning_market	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
tightly regulated by Government	86.7	92.7	85.6	93.2	84.8	90.7	87.2	75.6	70.8	82.0	88.2	79.3	76.7	93.8	87.7	96.5	87.6	87.1	90.8	78.8	82.7	78.8	79.6	90.1	88.0	79.0	71.5	61.7	88.9	83.5	85.1	90.7	83.3
allowed to operate in the market place like a business	9.0	4.6	5.2	4.5	8.7	6.0	4.2	6.6	13.7	6.6	5.0	11.2	6.6	2.7	4.1	1.6	5.8	1.9	5.9	12.3	4.7	3.5	5.8	5.9	5.1	7.3	3.7	13.7	8.0	9.6	6.3	3.4	6.6
DK	4.3	2.7	9.2	2.3	6.6	3.2	8.6	17.8	15.5	11.5	6.7	9.5	16.6	3.5	8.2	1.9	6.6	11.0	3.3	8.9	12.6	17.7	14.6	4.0	6.9	13.7	24.8	24.5	3.1	6.9	8.6	6.0	10.2

All respondents - no split ballot
qb23
Which of the following views is closest to your own?

newtech_benefits	Country																																EU27
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	
The Government should take responsibility to ensure that new technologies benefit everyone	80.6	73.4	79.3	82.2	86.1	77.0	74.2	72.5	75.1	78.2	85.5	72.9	76.0	56.5	81.0	78.4	81.9	76.6	78.0	67.6	67.2	85.7	54.8	80.1	80.3	77.7	58.3	67.7	53.9	75.3	69.7	79.0	75.6
It is up to people to seek out the benefits from new technologies themselves	15.7	22.3	12.6	14.6	8.7	19.2	16.8	12.0	15.1	15.6	10.9	20.6	10.5	35.3	12.5	18.9	12.9	15.9	17.9	24.3	20.2	9.7	29.7	17.2	13.8	18.3	23.2	12.1	41.3	17.8	21.6	15.1	16.0
DK	3.6	4.3	8.1	3.1	5.2	3.8	9.1	15.5	9.8	6.2	3.6	6.5	13.5	8.2	6.5	2.8	5.2	7.5	4.1	8.2	12.7	4.6	15.6	2.7	5.9	4.0	18.5	20.2	4.7	6.9	8.7	6.0	8.5

qb24
And which of the following do you think is most important?

values_freedom	Country																																EU27
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	
Protecting freedom of speech and human rights	52.9	50.0	56.1	56.8	57.7	59.8	59.2	51.1	48.6	60.8	66.5	56.6	54.4	65.8	41.0	59.2	49.8	43.4	42.2	50.2	52.9	56.8	51.6	46.9	56.7	29.5	47.0	55.5	62.8	40.8	63.6	57.9	52.4
Fighting crime and terrorism	44.0	45.2	39.9	41.3	36.2	35.2	36.5	40.9	43.3	36.9	31.3	39.7	38.0	30.5	52.6	40.2	48.1	50.1	55.1	45.6	41.8	38.0	40.7	50.8	39.4	66.7	46.6	33.0	34.3	55.0	31.6	36.8	42.3
DK	3.1	4.9	4.0	1.9	6.1	5.0	4.3	8.0	8.1	2.3	2.2	3.7	7.6	3.6	6.4	.6	2.2	6.5	2.7	4.2	5.3	5.2	7.7	2.3	3.9	3.8	6.3	11.5	2.9	4.2	4.8	5.3	5.4

qb25
And which of the following do you think is most important?

values_econ	Country																																EU27
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	
Having strong European companies to compete in global markets	40.0	56.5	33.7	23.1	26.9	17.6	32.2	40.6	34.5	40.5	44.5	42.7	27.5	32.0	35.9	15.9	37.7	25.1	27.1	18.9	26.2	37.7	31.8	33.2	34.5	23.5	27.5	30.3	25.4	15.1	26.7	22.4	32.9
Reducing economic inequalities among people in the European Union	56.3	37.9	56.0	74.2	67.1	76.7	60.3	42.8	55.8	51.5	50.4	48.3	63.4	61.8	46.5	77.0	58.3	67.0	69.8	74.4	63.2	48.1	56.5	64.5	61.5	71.6	57.3	47.5	68.1	78.2	65.0	68.7	57.6
DK	3.8	5.6	10.3	2.7	6.0	5.8	7.5	16.6	9.7	8.0	5.1	9.1	9.1	6.1	17.6	7.1	4.0	7.8	3.1	6.7	10.6	14.2	11.6	2.2	4.1	4.9	15.2	22.3	6.5	6.7	8.3	8.9	9.6

qb26
And which of the following do you think is most important?

values_climate	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
To halt climate change and global warming, have to rethink ways of living even if it means lower economic growth	64.1	64.3	79.9	70.6	68.8	83.4	65.2	56.2	59.9	71.2	66.4	71.2	57.0	71.2	58.2	63.8	58.0	51.8	62.5	45.4	51.3	35.9	52.6	59.2	77.9	53.4	48.9	63.6	65.2	63.8	73.3	64.3	64.3
Technology will stop climate change and global warming so we can maintain our way of life and economic growth	31.1	31.6	12.4	27.3	22.3	14.6	24.1	25.0	29.5	21.7	29.0	24.4	25.0	24.3	31.0	32.0	35.8	34.7	32.2	45.8	29.7	51.9	29.9	36.8	18.6	35.7	34.4	18.6	30.6	27.5	19.2	28.6	25.8
DK	4.8	4.1	7.7	2.2	9.0	2.0	10.7	18.8	10.6	7.1	4.5	4.4	18.0	4.5	10.8	4.2	6.2	13.4	5.3	8.8	19.0	12.2	17.5	4.0	3.6	10.9	16.7	17.9	4.2	8.7	7.5	7.1	9.9

qb27
To what extent do you think your view on climate change and global warming is shared in (OUR COUNTRY)?

climate_consensus	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Everyone shares my views	6.0	2.2	2.4	11.6	3.9	2.5	3.7	3.0	5.9	5.4	1.9	4.8	4.9	1.2	4.0	6.5	3.5	2.3	4.3	2.6	4.6	4.3	4.1	4.8	2.8	4.4	2.9	9.7	.5	6.2	3.3	.5	4.0
A lot of people share my views	63.1	74.1	58.9	58.8	52.8	76.3	48.6	49.5	58.1	46.2	69.8	55.1	35.6	78.4	52.0	41.1	65.2	37.7	55.3	53.7	42.9	46.3	44.8	53.0	51.9	43.9	34.4	23.2	47.5	53.4	54.1	52.3	54.0
A few people share my views	23.7	20.8	28.6	19.9	28.1	16.4	33.5	14.5	15.1	34.8	21.3	29.7	36.2	14.7	29.7	37.0	15.8	43.1	26.2	30.0	21.9	16.9	20.3	31.3	35.7	16.9	16.4	23.4	48.3	22.1	35.6	42.2	24.9
No one shares my views	1.6	.1	.9	3.6	.7	.7	1.4	3.7	.7	2.2	.9	.6	3.0	.3	1.7	2.6	.7	4.8	1.8	1.4	3.4	1.2	1.4	.8	1.8	2.6	5.1	12.6	.4	2.1	.8	.4	1.4
DK	5.5	2.7	9.2	6.1	14.6	4.1	12.8	29.3	20.2	11.4	6.0	9.8	20.4	5.4	12.5	12.8	14.8	12.1	12.5	12.2	27.1	31.4	29.4	10.1	7.8	32.1	41.3	31.1	3.3	16.1	6.2	4.6	15.7

qb28
Do you think (OUR COUNTRY) will adopt policies in line with your view on this matter?

climate_policy	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, definitely	6.4	8.0	3.4	13.3	8.3	10.9	10.2	4.7	5.0	10.5	4.3	9.0	4.3	8.5	4.4	22.3	4.8	6.0	5.9	1.6	2.6	8.0	4.6	4.5	3.1	5.6	5.5	8.9	6.6	5.3	12.0	6.8	6.0
Yes, probably	50.1	48.0	36.3	54.0	38.7	63.7	40.7	40.5	42.4	46.0	46.9	49.5	32.3	52.2	37.0	47.6	35.9	38.1	48.3	34.2	35.8	39.0	34.4	46.2	44.8	38.1	33.4	23.8	54.1	43.6	48.9	50.2	40.0
No, probably not	28.9	35.5	36.5	19.2	25.1	17.0	25.5	17.1	23.5	24.0	36.5	26.2	24.9	29.0	37.8	13.5	30.4	30.2	25.0	36.5	21.5	14.7	22.9	29.6	27.8	16.1	15.9	17.9	30.7	23.2	21.6	29.3	28.2
No, definitely not	6.3	4.2	13.6	5.3	8.9	2.2	7.4	4.0	6.0	5.3	5.0	4.2	11.1	2.9	6.5	1.2	11.0	9.5	4.4	12.1	8.6	6.0	3.8	7.5	11.7	5.2	10.3	16.5	4.6	5.3	5.4	5.7	7.8
DK	8.3	4.4	10.2	8.2	19.1	6.1	16.2	33.7	23.2	14.2	7.4	11.0	27.3	7.4	14.3	15.4	17.8	16.2	16.5	15.5	31.5	32.3	34.3	12.2	12.6	35.1	34.9	32.9	4.1	22.6	12.1	8.0	18.1

qb29
Overall how strongly would you say you feel about issues concerning biotechnology that we have been talking about in this survey?

feelings_biotech	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Extremely strongly	4.0	4.5	8.8	9.7	3.1	2.7	6.3	4.4	3.3	4.3	4.9	5.1	4.7	3.5	5.1	14.5	3.1	2.0	4.4	.4	3.7	3.4	3.6	3.4	6.0	2.8	1.6	6.6	2.6	5.6	5.5	1.0	5.0
Very strongly	16.5	30.3	32.8	33.4	22.7	29.8	31.6	21.6	17.9	19.6	21.4	31.8	28.8	21.8	23.0	33.2	22.7	7.2	29.2	3.4	22.3	22.9	19.8	37.7	19.2	8.8	8.6	14.8	17.0	19.2	29.2	11.2	24.3
Somewhat strongly	51.8	49.9	42.9	44.0	39.7	60.1	50.1	37.9	42.8	46.2	58.2	38.9	49.2	58.1	45.3	37.9	46.7	36.8	46.6	43.3	54.2	41.8	37.5	44.6	53.6	45.9	43.0	30.7	65.4	46.0	51.7	56.6	44.9
Not at all strongly	26.4	13.5	12.4	11.2	33.3	5.0	10.8	16.1	27.3	23.8	14.1	19.3	8.4	13.8	18.9	10.2	23.5	51.2	13.3	50.7	13.2	20.0	18.2	11.9	16.9	36.4	35.8	15.6	13.7	22.3	10.9	28.5	19.7
DK	1.1	1.8	3.1	1.7	1.2	2.3	1.3	20.0	8.7	6.1	1.5	4.8	9.0	2.7	7.8	4.1	4.0	2.8	6.5	2.3	6.6	11.8	20.9	2.4	4.2	6.0	11.1	32.2	1.3	6.9	2.7	2.7	6.1

qb30
Does/Did any of your family have a job or a university qualification in natural science, technology or engineering (for instance, physics, chemistry, biology, medicine)?

Yes, your father

father_science	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes	3.3	3.2	5.4	1.2	1.0	3.2	1.5	2.9	2.7	2.1	4.1	4.0	1.2	8.7	4.2	1.1	1.7	4.7	2.5	2.5	1.7	1.1	1.3	2.2	2.2	1.8	.7	2.7	4.1	1.3	5.6	7.6	2.9
No	96.7	96.8	94.6	98.8	99.0	96.8	98.5	97.1	97.3	97.9	95.9	96.0	98.8	91.3	95.8	98.9	98.3	95.3	97.5	97.5	98.3	98.9	98.7	97.8	97.8	98.2	99.3	97.3	95.9	98.7	94.4	92.4	97.1

Yes, your mother

mother_science	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes	1.6	2.8	1.8	1.1	.8	2.7	1.3	1.1	2.2	.9	1.1	2.3	2.7	3.0	3.2	.9	1.1	4.2	1.7	3.6	2.4	.9	2.4	2.7	2.6	2.3	.8	1.3	3.4	.5	1.2	2.7	1.9
No	98.4	97.2	98.2	98.9	99.2	97.3	98.7	98.9	97.8	99.1	98.9	97.7	97.3	97.0	96.8	99.1	98.9	95.8	98.3	96.4	97.6	99.1	97.6	97.3	97.4	97.7	99.2	98.7	96.6	99.5	98.8	97.3	98.1

Yes, another member of your family

otherfamily_science	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes	17.1	26.1	18.8	12.5	18.7	20.0	22.2	22.1	9.4	28.5	18.1	11.3	13.8	30.2	21.3	21.2	10.7	19.7	12.1	11.9	11.2	19.9	13.4	16.5	15.7	9.1	12.2	13.1	32.8	11.0	28.1	37.4	16.9
No	82.9	73.9	81.2	87.5	81.3	80.0	77.8	77.9	90.6	71.5	81.9	88.7	86.2	69.8	78.7	78.8	89.3	80.3	87.9	88.1	88.8	80.1	86.6	83.5	84.3	90.9	87.8	86.9	67.2	89.0	71.9	62.6	83.1

No, no one in your family

nofamily_science	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
No family member	78.4	69.6	75.5	84.6	79.1	75.0	75.7	71.3	82.3	67.1	78.1	82.9	78.9	62.0	72.5	76.5	86.7	72.4	84.5	81.7	82.6	75.0	81.2	78.7	81.2	85.2	84.1	75.2	62.9	86.8	66.1	55.7	78.1
Some family member	21.6	30.4	24.5	15.4	20.9	25.0	24.3	28.7	17.7	32.9	21.9	17.1	21.1	38.0	27.5	23.5	13.3	27.6	15.5	18.3	17.4	25.0	18.8	21.3	18.8	14.8	15.9	24.8	37.1	13.2	33.9	44.3	21.9

DK

dkfamily_science	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Don't know	1.0	.5	1.8	1.3	.6	.6	.6	3.5	4.1	1.9	.3	.5	4.2	1.1	1.0	1.2	.2	1.5	.1	1.6	2.9	3.5	2.4	.6	.2	2.6	2.3	8.0	.5	.7	.4	.9	1.7
Some non-DK response	99.0	99.5	98.2	98.7	99.4	99.4	99.4	96.5	95.9	98.1	99.7	99.5	95.8	98.9	99.0	98.8	99.8	98.5	99.9	98.4	97.1	96.5	97.6	99.4	99.8	97.4	97.7	92.0	99.5	99.3	99.6	99.1	98.3

qb31 (modified)
Have you ever studied natural science, technology or engineering at university?

study_science	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Yes, studied at university	11.9	5.6	9.6	8.2	8.0	12.1	11.9	7.4	5.0	5.4	7.0	3.8	5.2	9.4	9.6	6.0	3.4	14.5	2.7	14.4	8.8	5.1	6.3	5.8	8.6	8.7	4.4	4.2	11.6	6.3	7.3	7.8	8.0
No, not studied at university	88.1	94.4	90.4	91.8	92.0	87.9	88.1	92.6	95.0	94.6	93.0	96.2	94.8	90.6	90.4	94.0	96.6	85.5	97.3	85.6	91.2	94.9	93.7	94.2	91.4	91.3	95.6	95.8	88.4	93.7	92.7	92.2	92.0

qb32
Which of these statements comes closest to your beliefs?

believegod	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Don't believe there is any sort of spirit, God or life force	26.9	24.4	26.7	4.4	19.1	22.3	40.2	6.7	6.0	24.5	29.8	12.2	12.1	34.0	24.6	2.6	36.7	28.6	20.0	11.2	12.2	1.5	4.8	13.6	25.4	15.3	.6	.8	18.3	7.4	11.3	29.2	20.3
Believe there is some sort of spirit or life force	31.3	46.9	24.8	15.9	20.2	41.4	26.5	20.2	19.7	22.2	39.1	38.1	15.4	45.2	33.2	8.5	44.4	49.7	33.7	47.9	36.9	4.1	13.7	23.1	36.1	43.1	7.2	.8	48.5	21.7	39.0	44.1	25.6
Believe there is a God	37.2	27.7	44.6	78.9	58.6	33.1	27.1	69.8	74.4	45.7	27.8	44.0	69.8	18.3	37.4	87.6	16.1	18.2	44.8	38.1	46.9	94.2	79.6	62.7	32.3	35.5	92.1	94.5	30.8	69.0	44.0	21.6	51.0
DK	4.6	1.0	3.8	.9	2.1	3.1	6.2	3.2		7.7	3.3	5.7	2.8	2.5	4.9	1.3	2.8	3.5	1.4	2.8	3.9	.2	1.8	.7	6.2	6.1		3.9	2.4	1.9	5.7	5.1	3.1

qb33
Do you consider yourself to be...?

denomination	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
Catholic	56.5	1.8	34.0	.2	67.8	.6	41.2	82.6	87.1	67.8	22.2	78.7	84.1	1.1	14.1	2.1	29.6	2.2	53.4	23.5	80.0	95.7	90.0	66.7	64.0	.1	6.2		3.6	82.4	40.4	1.2	46.2
Orthodox	.5	.2	1.5	93.6	1.5	.9	.1	1.2	.7	.6	.1	1.3	.4	.3	1.6	92.8	.3	13.9	.6	16.4	3.4		.9	.9	2.4	83.8	86.2	.1	.7	5.8	.8	.9	8.4
Protestant	1.1	60.9	29.0	.1	.3	70.9	1.4	1.6	.6	1.5	16.6	6.2	.6	40.3	24.9		.7	5.6	7.7	12.5	.3	1.1	.4	5.1	.7	.4	3.0		49.6	.3	34.8	38.8	11.4
Other Christian	4.5	9.6	3.6	.1	1.8	9.1	1.7	4.7	1.4	2.1	8.5	1.5	1.0	8.2	16.8	1.4	1.2	15.9	3.3	11.5	2.0	.5	.7	6.8	.1	1.0	2.3		10.5	.4	3.4	10.4	4.5
Jewish	.1	.1	.1			.2		.2	.1	.2	.2	.1		.2	.1			.1	.1	.3								.4			.1		.0
Muslim	5.2	1.7	1.9	.2	.4	.1	2.1	.2		.6	.8	1.1		1.1	2.6			.2		.1	.3	.6			3.0	5.1	.1	97.2		.7	2.5	.7	1.2
Sikh	.1														.4																		.1
Buddhist	.8	.3	.3		.4	.3	.9	.1	.3		.9	.1		1.2	.6		.3	.2	.1	.1	.1			.1	.2				.4		.7	.7	.4
Hindu			.3				.1	.1		.1		.1			.1					.1										.2	.1	.4	.2
Atheist	4.9	6.5	6.6	2.6	4.5	3.4	12.9	2.3	3.3	5.1	14.9	.6	2.5	12.3	6.2	.5	17.7	18.0	1.4	3.9	1.1	.3	1.6	9.5	13.2	1.8	.5	.4	10.1	3.0	3.3	8.9	6.1
Non believer/agnostic	20.4	15.6	18.6	2.5	18.3	8.0	28.7	4.4	2.6	15.2	27.7	6.2	9.6	28.9	24.4	1.1	42.6	11.1	18.6	24.8	7.5	1.0	4.1	8.1	10.9	2.9	.2	.7	16.5	6.1	8.8	31.0	16.0
Other (SPONTANEOUS)	2.9	2.5	1.6	.4	2.5	1.6	3.7	1.4	1.2	4.2	7.3	1.9	.2	5.0	1.9	1.6	.4	3.2	.1	.1	2.2	.7	.2	1.2	3.1	1.0	1.4	.5	7.2	.4	4.6	5.3	2.0
DK	3.1	.8	2.4	.3	2.4	5.1	7.2	1.4	2.8	2.6	.9	2.3	1.5	1.3	5.1	.4	7.2	29.8	14.7	6.8	3.0	.2	2.1	1.7	2.5	3.9	.2	.8	1.4	.7	.4	2.0	3.6

qb34
Apart from weddings or funerals, about how often do you attend religious services?

religious_attendance	Country																																
	BE	DK	DE	GR	ES	FI	FR	IE	IT	LU	NL	AT	PT	SE	UK	CY	CZ	EE	HU	LV	LT	MT	PL	SK	SI	BG	RO	TR	IS	HR	CH	NO	EU27
More than once a week	2.3	1.1	1.5	2.2	2.0	.5	1.0	7.2	5.0	2.8	3.7	1.1	2.7	1.4	3.3	6.6	.4	.8	1.4	1.2	1.1	27.0	5.7	12.4	2.7	.7	3.0	17.6	1.4	4.1	1.9	2.0	2.8
Once a week	8.1	2.9	7.5	13.3	11.6	1.4	4.4	32.3	21.7	9.5	8.2	9.2	19.6	3.7	8.8	17.0	5.1	1.3	8.0	3.3	8.2	45.3	45.4	27.7	9.9	3.7	18.3	12.3	4.3	17.6	7.0	3.3	13.6
About once a month	4.7	6.2	9.1	17.1	6.3	4.3	4.7	12.7	12.1	6.5	4.7	13.2	11.8	4.6	5.7	16.7	3.3	2.9	5.4	8.0	10.4	7.7	19.3	8.5	6.5	8.4	18.8	7.2	5.7	14.0	12.7	2.9	9.2
About each two or three months	5.8	6.2	8.8	17.2	6.0	5.7	2.9	10.4	9.9	7.5	7.0	6.5	8.2	7.6	5.3	14.8	2.0	2.8	5.9	6.4	11.2	2.5	8.0	4.0	5.4	9.9	13.2	6.3	10.1	10.1	12.2	5.2	7.3
Only on special holy days	13.9	19.8	19.3	35.2	14.4	22.9	13.1	7.4	24.8	26.2	8.8	23.9	24.4	20.6	6.9	35.5	8.9	17.2	18.4	20.7	37.1	4.9	8.9	13.1	21.6	38.5	20.3	13.7	22.7	27.7	17.1	15.5	16.6
About once a year	7.1	18.2	13.3	4.6	3.8	18.6	10.3	6.9	6.4	12.8	11.3	9.1	4.9	12.2	9.3	4.7	5.0	18.6	8.7	16.8	9.9	3.6	2.5	4.9	6.1	6.8	4.6	2.8	17.9	7.2	13.5	13.8	8.3
Less often	17.4	21.1	11.8	6.3	14.8	28.4	9.3	10.6	10.1	13.4	9.7	19.1	8.8	20.2	13.8	2.1	13.5	21.3	20.3	17.8	13.4	4.0	2.5	9.8	18.8	14.7	17.1	8.6	18.0	9.5	13.5	19.0	12.1
Never	39.7	24.5	27.8	4.1	40.8	17.4	53.2	12.0	9.2	20.4	46.3	16.5	18.4	29.6	45.5	2.4	60.5	34.0	30.3	25.0	8.5	5.1	4.7	18.6	28.3	15.0	2.9	23.6	19.3	8.6	21.6	37.7	28.9
DK	.9	.1	.9		.4	.8	1.2	.7	.8	.9	.4	1.4	1.2	.1	1.4	.2	1.3	1.1	1.6	.7	.3	.1	3.0	.9	.7	2.2	1.8	7.9	.6	1.1	.4	.6	1.1

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