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PUBLIC OPINION RESEARCH INTO BIOTECHNOLOGY ISSUES IN THE UNITED STATES AND CANADA

Presented to the Biotechnology Assistant Deputy Minister Coordinating Committee (BACC)
Government of Canada

March 2003

EIGHTH WAVE SUMMARY REPORT

Prepared for the Biotechnology Assistant Deputy Minister Coordinating Committee, Government of Canada, by Pollara Research and Earncliffe Research and Communications.

The opinions and statements in this publication do not necessarily reflect the policy of the Government of Canada.



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Public Opinion Research into Biotechnology Issues
In the United States and Canada – Eighth Wave
March 2003

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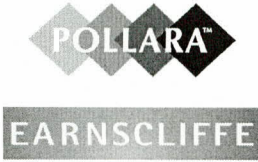
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Introduction

Pollara Research and Earncliffe Research and Communications is pleased to present this summary report on a public opinion research program conducted in the spring of 2003 for the Biotechnology Assistant Deputy Minister Coordinating Committee (BACC). This was the eighth wave of a series begun in the fall of 1999. During that time, the BACC has commissioned nine opinion surveys and more than seventy focus groups. In all, there are more than 13,000 data points available in what is North America's largest and most comprehensive investigation into attitudes about biotechnology and the public policy that surrounds it.

The eighth wave was completed in March, 2003 and was comprised of a telephone survey of 1000 Americans, and a telephone survey of 600 Canadians, using the same questionnaire.

The research was designed to accomplish two major objectives:

- to track sentiment on a range of biotechnology issues in the United States, using a baseline of data developed in previous waves of research;
- to compare attitudes among Americans to attitudes among Canadians, overall as well as on key specific areas of biotechnology where the two countries have mutual interests

The telephone work began on March 20, 2003, and ended on March 29, 2003. The margin of error for the US national sample is +/- 3.1%, nineteen times out of twenty, and the margin of error for the Canadian sample is +/- 4.0%, nineteen times out of twenty.

Further information can be obtained from Pollara Research in Toronto and Earncliffe Research and Communications in Ottawa. Please contact us at our offices, at (416) 921 0090 or (613) 233 8080, or via e-mail:

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Summary

Trend Lines

This wave of research represents the first cross-national (Canada / United States) study of attitudes toward biotechnology conducted as part of the Canadian Biotechnology Strategy public opinion research program. As such, trend lines can only be discussed in the context of the Canadian data.

In Canada, biotechnology continues to mature as an issue – almost everyone has now read or heard something about it, and know some of the pros and cons involved.

Overall opinion towards biotechnology – its processes, products and applications – has again slightly increased in this wave of research. Canadians continue to express more than two to one support for the technology overall (63% to 25%). Of particular note, the segment that strongly opposes biotechnology has shrunk to its lowest level since this tracking research began in 1999, to 7% of the sample.

The data continues to show among those more highly educated, with higher incomes, as well as among younger Canadians, that biotechnology will be central to Canada's future economic success. A large majority want the country to be a world leader in the technology so that they and Canada as a whole can gain its benefits.

However, there continues to be areas of biotechnology, chiefly in the area of GM food, where there are strong reservations among significant pockets of the populace about the potential risks involved. In this wave of research, more than half of the population (52%) expressed some level of discomfort with GM food.

This wave of research has demonstrated in more detail than in the past with the exception of cloning, the chief consideration regarding biotechnology applications are risks to health and the environment. Even in the area of cloning, an equal number of people see risks and moral/ethical issues as the primary consideration.

The survey contained a detailed investigation of some of the issues involved in the cloning of animals, with data indicating support for some cloning applications is more nuanced than previous qualitative research has suggested. Like other applications of biotechnology, some are supported by a majority, while others are widely opposed. For example, 63% support the idea of using cloned animals in medical research, while 24% support the use of cloned animals as a source of food.

Awareness and Familiarity

Americans are more aware and more familiar with biotechnology than Canadians, although they, like Canadians, also report relatively low levels of familiarity overall.

- 10% of Americans say they are very familiar with the technology and another 57% say they are somewhat familiar, compared to 6% and 51% in Canada, respectively.

Americans appear to be seeing and hearing more about the subject of biotechnology than Canadians.

- 53% of Americans say they have read or seen a news story on this subject in the past three months, compared to 44% among Canadians.

Levels of interest in the subject are broadly consistent in the two countries, in the range of seven in ten that say they are very or somewhat interested in the subject.

Overall opinion towards biotechnology – its processes, products and/applications – suggests that Americans are generally more supportive of the technology than Canadians.

- 71% of Americans say they support the technology, versus 19% who do not
- 63% of Canadians say they support the technology, versus 25% who do not

Applications

In this wave of research, two sets of applications were tested with respondents. The first set includes traditional applications (those tested in previous Waves not involving cloning) in health, environment, and agriculture. The second set includes applications in the area of animal cloning.

The data demonstrates a number of major findings with regard to biotechnology applications in the two countries.

- Broadly speaking, the hierarchy of support that is in evidence in Canada is also in evidence in the US. Health and environmental applications tend to be more widely supported than agricultural applications.
- There is majority support in both countries for all of the traditional applications tested, including health and food applications.
- Americans tend to be more supportive of all types of applications, traditional as well as cloning applications. In most cases, support is about 10% higher in the US than Canada. However, on agricultural applications, the gap is larger, in the range of 15% - Americans tend not to be as concerned about agricultural applications as Canadians.



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Some specific findings on traditional applications:

- Inserting genetically modified cells into the pancreas to cure diabetes was supported by 82% in Canada, 85% in the US
- Use of genetically modified trees to collect high levels of carbon was supported by 78% in Canada, 84% in the US
- Wheat genetically modified to resist disease was supported by 60% in Canada, 73% in the US
- Corn genetically modified to resist pesticides was supported by 56% in Canada, 74% in the US

In the area of animal cloning, the levels of support overall are lower in both countries, but the hierarchy of relative support is the same in Canada and the US.

- Cloned animals for medical research was supported by 63% in Canada, 64% in the US
- Cloned animals for organ transplantation was supported by 38% in Canada, 47% in the US
- Cloned animals as a source of food was supported by only 24% in Canada, 32% in the US

Based on these findings, it is our belief that Americans come at these issues with a similar evaluation framework as Canadians do. That is, the majority resist offering systemic views on biotechnology applications, and prefer to evaluate each application on its individual merits, using two measures:

- A risk/benefit calculation, with their conclusion driven by an assessment of the marginal personal benefit conveyed by the application. In other words: “do the potential benefits of the application (compared to non-GM products already available) outweigh the potential risks to myself or my family?” In simple terms, the larger and more personal the anticipated benefit, the more acceptable the risk and the higher the level of support for a given application.
- An assessment of the purpose of the application. If the purpose is deemed to be appropriately motivated and clearly in the public interest, it is more likely to be found acceptable.

In terms of decision-making about applications, scientific evidence, experts and informed choice are the fundamental elements of a preferred decision-making regime in both Canada and the US.

- 85% in the US, and 82% in Canada, believe that if the best available scientific evidence says an application is safe, it should be allowed

Risk Issues

The risks of biotechnology products are perceived to be lower in the US than in Canada. When US respondents were provided with a range of potential risks that might affect them, biotechnology products ranked far down the list. In Canada, they were lower than a number of other things, but were not as low as they were in the US.

- Nuclear waste was seen as posing the highest level of risk, 52% in Canada and 42% in the US
- Air pollution was seen to be a high risk by 33% in Canada, 24% in the US

- 19% in Canada thought GM food posed a high risk, compared to 11% in the US
- 11% in Canada thought GM pharmaceuticals posed a high risk, compared to 8% in the US

The most prevalent negative driver in the realm of biotechnology in both Canada and the US is concern about long-term risks and unknowable outcomes that these technologies may produce — in particular, potential long-term risks to human health and the environment. The more intrusive the application, the higher the life form it involves and the larger the degree to which the application crosses boundaries separating plants, animals and humans, the larger the perceived risk. With the exception of human and animal cloning, where ethical issues are important drivers of attitudes, risks drive perceptions.

Respondents in both countries were asked a series of questions about the most important concern about biotechnology applications in four categories: health, environment, food, and animal cloning. Their choices were: long term risks to human health, long term risks to the environment, ethical concerns, or that the application involves something unnatural, which are the four most important drivers of negative sentiment found throughout the research.

On health applications:

- Long term risk to human health was ranked as the most important concern by 68% of Canadians, 70% of Americans. Ethical concerns, the second ranking driver, was the most important concern for 11% in both Canada and the US.

On environmental applications:

- Long term risk to the environment was ranked as slightly more important than health concerns by both Canadians and Americans. 44% of Canadians, and 47% of Americans rated it as the number one concern. Ethical concerns were most important for 8% of Canadians, 7% of Americans.

On food applications:

- Long term risk to human health was ranked as the most important concern by 59% of Canadians, and 59% of Americans. Long term risks to the environment was a distant second, with 15% ranking it as the top concern in both countries.

On animal cloning applications:

- Long term risk to human health was ranked as the most important concern about animal cloning by 37% of Canadians, with 32% suggesting that ethical issues are the most important concern. Among Americans, ethical issues ranked slightly higher than health concerns, 36% to 35%.

One other key dimension of risk is the notion of irreversibility. In the research, a question was asked about whether people felt a negative side-effect of a biotechnology application (on health or the environment) would be able to be reversed, or not. The data suggests that in both countries, two thirds believe that science has the power to reverse potential side-effects of the technology.

- In the US, 65% believe that such a side-effect could be reversed by scientists
- In Canada, 62% believe that such a side-effect could be reversed by scientists

Overall, to most Canadians and Americans, acceptability and approval of biotechnology products and processes is largely a technical and scientific issue with relatively few significant moral or philosophical determinants. North Americans exhibit a high level of faith in science and technology, which augurs well for their attitudes toward biotechnology.

Benefits and Drawbacks

Survey respondents were asked whether ultimately the benefits of biotechnology outweigh the drawbacks of biotechnology in two areas, human health and the economy. The results again underscore the widespread sense that biotechnology holds much promise in both of these areas, particularly among Americans.

When people are asked whether the benefits outweigh the risks in the health field:

- 81% of Americans say the benefits outweigh the risks, versus 11% say the opposite
- 74% of Canadian say the benefits outweigh the risks, versus 19% that say the opposite

When people are asked whether the benefits outweigh the risks in terms of the economy:

- 82% of Americans say the benefits outweigh the risks, versus 14% say the opposite
- 72% of Canadian say the benefits outweigh the risks, versus 18% that say the opposite

One of the main reasons why there is so much support for the technology is because people perceive there will be quality of life benefits for them.

- 76% of Americans, and 75% of Canadians agree that "biotechnology is the frontier of human endeavour, which will provide significant quality of life benefits"

This support translates into a wish that most Canadians and Americans hold that Canada/the US should be a world leader in the field of biotechnology research.

- 89% of Americans supported that proposition, including 37% strong support
- 82% of Canadians supported that proposition, including 24% strong support



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One important note is that most people believe there is an inevitability to biotechnology research, that there is a broad sense that “putting the genie back in the bottle” is not really possible. As such, the compromise position many come to believe suggests “these technologies are inevitable, so the best we can do is make sure these technologies are as safe as possible” is the best that can be achieved to balance risks and benefits. More than 90% of respondents in both countries agreed with this proposition.

GM Food and Labeling

This research wave included several questions involving genetically modified food and food labeling. The results indicate Americans are more comfortable with the technology than Canadians, but a sizeable number of people in both countries say they are uncomfortable about GM food. More than half of the Canadian sample said they were uncomfortable with the idea of buying GM food, with one in four saying that they are very uncomfortable.

- In the US, 55% say they are comfortable, versus 42% uncomfortable
- In Canada, 47% say they are comfortable, versus 52% who are uncomfortable

Canadians (85%) and Americans (83%) share a belief that there should be a labeling system for GM food, and that the system should be a mandatory one. Few people see much point in voluntary systems of labeling rather than mandatory ones. It is the outcome of full compliance that most people want and mandatory labeling is the common sense proposition to achieve that end.

Informed choice is the key driver of opinion on the issue of GM food and by consequence, GM food labeling. People feel strongly that they have a right to choose to eat GM food or not and that is enabled by the creation of a labeling system.

Governance Issues

The survey data revealed some notable gaps in attitudes toward regulatory regimes in Canada and the US. Americans express more faith in their regulatory system than Canadians do. While in neither country are a majority of residents of the belief that the government does an effective job at regulating these products, there is a sizeable gap between those who believe this is the case in the two countries.

- 40% in the US believe their government probably does an effective job, compared to 56% who believe their government probably does not.
- 28% in Canada believe their government probably does an effective job, compared to 68% who believe their government probably does not.

Both Canadians and Americans share a strong belief that governance of biotechnology requires international solutions. More than three in four respondents in both countries say their country should dedicate most of its energy to developing international regulatory systems for biotechnology.



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In terms of specific decision-making approaches to biotechnology, the vast majority in both countries believe science should be the primary guide to decision-making about biotechnology applications.

- The proposed uses or outcomes have to be within a range of acceptability. Good science will not trump highly contentious applications that fail the risk/benefit test.
- Biotechnology products have to meet higher scientific standards than non-biotech products
- Long-term research into potential impacts is important to the credibility of the regulatory system.

In fact, for many, the notion of studying long term risks and potential impacts appears to be a crucial *quid pro quo* for support of the technology, in both the US and Canada.

- 77% of Americans, and 78% of Canadians agreed that “if I knew long term ongoing research were going to be conducted on products after they were approved for sale in Canada/The US, it would make me comfortable enough to accept these products”

DNA Mapping and Patenting

In this wave of research, several questions were asked on DNA mapping and the patenting of genes as well as higher life forms. Consistent with the data throughout this survey, most believe the mapping of the human genome will lead to significant medical breakthroughs and will outweigh the potential drawbacks.

In terms of mapping human DNA, in both countries a 5:1 ratio say there are more benefits than drawbacks to DNA mapping.

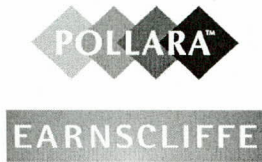
- 78% of Americans say there are more benefits than drawbacks
- 77% of Canadians say there are more benefits than drawbacks

The idea of patenting genes with particular traits was met with more resistance, on two equally important grounds: ethical concerns and affordability concerns. When presented with a forced choice about comfort with patenting genes versus discomfort about it, in both countries roughly half the sample expresses discomfort, more so in Canada than in the US, and more so on affordability issues.

Conclusions

Across the board, Americans express higher levels of support for biotechnology than Canadians, between 5-10% on most measures. While Canadians are supportive overall, they express slightly higher levels of trepidation about the risks involved. The largest gaps in attitudes between the two countries lie in three areas:

1. GM food (Americans more comfortable than Canadians)
2. Perceptions of risk (Americans less concerned about risk than Canadians)
3. Perceptions of governance (Americans believe governance is more stringent than Canadians)



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Underlying these differences appear to be two key drivers that are more prevalent in the United States than in Canada.

- An unwavering belief in science and technology as providers of improved quality of life and standard of living;
- A very strong belief in the power of entrepreneurialism, and a belief that biotechnology represents the new wave of entrepreneurial achievement for the United States.

Overall, however, it is important to note that these differences are relatively small, and that the plurality of people on both sides of the border are broadly supportive of the technology, particularly those areas that promise to improve human health.

Biotechnology Wave 8 Survey Interview Schedule

1. When you hear the word technology, do you have a positive, neutral, or negative reaction?

	Canada	US
Positive Reaction.....	65.....	70
Neutral Reaction	29.....	26
Negative Reaction	5.....	2
Don't Know/Refused.....	1.....	1

2. When you hear the word biotechnology, do you have a positive, neutral, or negative reaction?

Positive Reaction.....	36.....	36
Neutral Reaction	43.....	45
Negative Reaction	15.....	14
Don't Know/Refused.....	6.....	4

3. Over the last three months, have you heard about any stories or issues involving biotechnology?

Yes	44.....	53
No	53.....	43
Don't know/Refused	3.....	4

4. Would you say you are very familiar, somewhat familiar, not very familiar, or not at all familiar with biotechnology?

Very Familiar	6.....	10
Somewhat Familiar.....	51.....	57
Not Very Familiar	30.....	23
Not At All Familiar	13.....	9

5. Would you say you are very interested, somewhat interested, not very interested, or not at all interested in biotechnology?

	Canada	US
Very Interested.....	15.....	17
Somewhat Interested.....	58.....	54
Not Very Interested.....	19.....	21
Not At All Interested.....	7.....	7
Don't know/Refused.....	0.....	1

6. In general, would you say you strongly support, somewhat support, somewhat oppose or strongly oppose the use of products and processes that involve biotechnology?

Strongly Support.....	9.....	17
Somewhat Support.....	54.....	52
Somewhat Oppose.....	18.....	13
Strongly Oppose.....	7.....	6
Don't know/Refused.....	12.....	11

There are many ways in which biotechnology can be used. Please tell me if you strongly agree, agree, disagree with the use of biotechnology in each of the following ways. (ROTATE)

7. Using genetically modified enzymes that break down corn and turn it into a source of fuel, producing products like ethanol

Strongly Agree.....	27.....	37
Agree.....	55.....	52
Disagree.....	10.....	6
Strongly Disagree.....	3.....	2
Don't know/Refused.....	5.....	3

8. The development of genetically modified trees, that would be able to take on larger than normal amounts of carbon, which may help to reduce greenhouse gases

Strongly Agree.....	24.....	29
Agree.....	54.....	55
Disagree.....	14.....	10
Strongly Disagree.....	6.....	4
Don't know/Refused.....	3.....	3

9. Corn that has been genetically modified to resist pesticides, so it can be produced in higher volumes and cost less at the grocery store

	Canada	US
Strongly Agree.....	12	23
Agree.....	44	48
Disagree.....	29	18
Strongly Disagree.....	11	8
Don't know/Refused.....	4	3

10. The use of genetically modified bacteria or plants to break down pollutants like oil spills and toxic wastes

Strongly Agree.....	31	39
Agree.....	56	51
Disagree.....	8	5
Strongly Disagree.....	2	2
Don't know/Refused.....	3	3

11. Wheat that has been genetically modified to resist certain diseases in order to increase the volume of wheat grown

Strongly Agree.....	12	24
Agree.....	48	49
Disagree.....	28	17
Strongly Disagree.....	9	6
Don't know/Refused.....	3	3

12. Helping to cure type 1 diabetes by inserting a modified gene into the pancreas that stimulates the insulin production process in humans.

Strongly Agree.....	30	40
Agree.....	52	45
Disagree.....	8	8
Strongly Disagree.....	4	3
Don't know/Refused.....	5	5

There are many things that present risks to us in life. In terms the safety of yourself and your family, compared to other risks in society, how much risk do the following issues present? Please

use a 1-7 scale where 1 means a low level of risk, 4 means a moderate level of risk, and 7 means a high level of risk. (ROTATE)

13. Drinking water from the tap		Canada	US
Low Level of Risk	20	22	
2	13	15	
3	12	12	
Moderate Level of Risk	24	22	
5	11	10	
6	6	7	
High Level of Risk	14	12	
Don't Know/Refused.....	1	0	

14. A serious car accident		Canada	US
Low Level of Risk	7	5	
2	4	6	
3	8	7	
Moderate Level of Risk	17	20	
5	14	12	
6	13	13	
High Level of Risk	35	36	
Don't Know/Refused.....	1	0	

15. Air pollution or smog		Canada	US
Low Level of Risk	6	7	
2	4	7	
3	6	8	
Moderate Level of Risk	16	20	
5	15	19	
6	20	15	
High Level of Risk	33	24	

16. Pesticides		Canada	US
Low Level of Risk	7	5	
2	2	7	

	Canada	US
3	7	10
Moderate Level of Risk	21	24
5	16	17
6	14	15
High Level of Risk	32	21
Don't Know/Refused.....	1	1

17. Violent crime

Low Level of Risk	10	7
2	7	9
3	8	10
Moderate Level of Risk	16	19
5	11	11
6	9	11
High Level of Risk	38	33
Don't Know/Refused.....	1	1

18. Genetically modified food

Low Level of Risk	10	16
2	7	12
3	8	14
Moderate Level of Risk	28	26
5	13	11
6	12	6
High Level of Risk	19	11
Don't Know/Refused.....	3	3

19. Bio-pharmaceutical products (drugs that contain genetically modified ingredients)

Low Level of Risk	10	15
2	8	12
3	10	17
Moderate Level of Risk	38	28
5	12	11
6	8	5
High Level of Risk	11	8

	Canada	US
Don't Know/Refused.....	3	4

20. Severe weather events, like hurricanes or floods

Low Level of Risk	20	16
2	11	15
3	8	12
Moderate Level of Risk	22	21
5	10	13
6	10	8
High Level of Risk	18	15
Don't Know/Refused.....	1	1

21. Nuclear waste

Low Level of Risk	11	10
2	5	8
3	6	4
Moderate Level of Risk	9	13
5	7	10
6	9	11
High Level of Risk	52	42
Don't Know/Refused.....	1	1

In your opinion, does biotechnology bring major benefits, modest benefits, modest drawbacks, or major drawbacks in each of the following areas. How about: (ROTATE)

22. SPLIT SAMPLE The health of Canadians/Americans today

Major Benefits	24	36
Modest Benefits	50	50
Modest Drawbacks	13	7
Major Drawbacks	6	4
Don't Know/Refused.....	7	4

23. SPLIT SAMPLE The health of Canadians/Americans over the longer term

Major Benefits	26	35
Modest Benefits	45	47
Modest Drawbacks	12	9
Major Drawbacks	9	4

	Canada	US
Don't Know/Refused.....	7	5

24. SPLIT SAMPLE Canada's/America's economy today

Major Benefits	17	28
Modest Benefits	55	54
Modest Drawbacks	13	9
Major Drawbacks	5	3
Don't Know/Refused.....	9	6

25. SPLIT SAMPLE Canada's economy over the long term

Major Benefits	25	35
Modest Benefits	48	49
Modest Drawbacks	13	7
Major Drawbacks	5	4
Don't Know/Refused.....	9	5

(END OF ROTATION)

Please tell me whether you strongly agree, agree, disagree, or strongly disagree with each of the following statements: (ROTATE)

26. Until more is known about the risks, government should slow the use of biotechnology

Strongly Agree.....	25	14
Agree.....	53	46
Disagree.....	17	31
Strongly Disagree.....	3	7
Don't know/Refused	2	2

27. From what I know, genetically modified food presents me with few benefits over non-genetically modified food, but it presents many more risks

Strongly Agree.....	15	10
Agree.....	49	35
Disagree.....	25	37
Strongly Disagree.....	4	7
Don't know/Refused	6	11

28. From what I know, genetically modified health products (like some pharmaceutical products) provide me with few benefits over non-genetically modified health products, but they provide many more risks

	Canada	US
Strongly Agree.....	10	6
Agree.....	46	35
Disagree.....	28	39
Strongly Disagree.....	2	5
Don't know/Refused.....	15	14

29. Biotechnology research represents the next frontier of human endeavour, a frontier that will lead to significant quality of life benefits for all Canadians/Americans

Strongly Agree.....	14	18
Agree.....	61	58
Disagree.....	17	17
Strongly Disagree.....	3	3
Don't know/Refused.....	5	4

30. Biotechnology is the next wave of human technological advancement, just like information technology has been over the past two decades

Strongly Agree.....	14	20
Agree.....	64	60
Disagree.....	13	13
Strongly Disagree.....	4	2
Don't know/Refused.....	5	5

31. Canada/the US is among the world's leaders in the field of biotechnology research

Strongly Agree.....	7	19
Agree.....	44	53
Disagree.....	15	9
Strongly Disagree.....	1	1
Don't know/Refused.....	33	18

32. Canada/The US should be among the world's leaders in the field of biotechnology research

Strongly Agree.....	24	37
Agree.....	58	52
Disagree.....	12	7
Strongly Disagree.....	2	2
Don't know/Refused.....	4	2

33. If I knew that ongoing long term safety research was going to be conducted on biotechnology products after they were approved for sale in Canada/the US, it would make me feel comfortable enough to accept these products

	Canada	US
Strongly Agree.....	19	20
Agree.....	59	57
Disagree.....	15	17
Strongly Disagree.....	6	5
Don't know/Refused.....	1	1

34. Although there may be some unknown risks, technologies like biotechnology are part of the future, so all we can do is make sure that its uses are as safe as possible

Strongly Agree.....	31	34
Agree.....	58	55
Disagree.....	7	7
Strongly Disagree.....	3	3
Don't know/Refused.....	1	1

35. We have to accept some risk to achieve the benefits of biotechnology like new discoveries that improve the diagnosis and cure of serious illnesses

Strongly Agree.....	17	21
Agree.....	67	65
Disagree.....	11	10
Strongly Disagree.....	3	2
Don't know/Refused.....	1	1

36. We have to accept some risk to achieve the benefits of biotechnology like new foods that contain vitamins or medicine

Strongly Agree.....	11	15
Agree.....	55	58
Disagree.....	22	21
Strongly Disagree.....	9	4
Don't know/Refused.....	2	2

37. Governments should inform people about biotechnology, and let them decide for themselves whether they want to use biotech products

Strongly Agree.....	47	45
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	Canada	US
Agree.....	48	48
Disagree.....	4	6
Strongly Disagree.....	1	0
Don't know/Refused.....	0	1

38. (SPLIT) If ^{38a}most scientific evidence says that a particular use of biotechnology is safe, it should be allowed/If the best available scientific evidence says that a particular use of biotechnology is safe, it should be allowed. ^{38b}

Strongly Agree.....	15	16
Agree.....	68	67
Disagree.....	12	13
Strongly Disagree.....	2	3
Don't know/Refused.....	3	2

39. (SPLIT) If ^{39a}most scientific evidence says that a particular use of biotechnology is safe, it should be allowed/If the best available scientific evidence says that a particular use of biotechnology is safe, it should be allowed. ^{39b}

Strongly Agree.....	17	23
Agree.....	65	62
Disagree.....	13	11
Strongly Disagree.....	2	2
Don't know/Refused.....	3	2

(END OF ROTATION)

I'm going to read you a series of questions that ask you to indicate which of two basic positions your opinion is closest to. The first one is:

40. Biotechnology will be one of the most important sources of jobs and economic growth in the 21st century OR Biotechnology might be seen as important now, but probably won't be a significant source of jobs and economic growth in the 21st century. Which of those two positions is closest to your own?

Biotechnology will be one of the most important sources.....	58	63
Biotechnology might be seen as important now, but probably won't be ...	38	32
Don't Know/Refused.....	4	4

41. Which of the following views is closest to your own: Decisions about biotechnology should be based primarily on the risks and benefits involved OR Decisions about biotechnology should be based primarily on the moral and ethical issues involved

Canada US

Decisions about biotechnology should be based on the risks/benefits	52	59
Decisions about biotechnology should be based primarily on moral/ethical	45	37
Don't Know/Refused.....	3	4

42. Which of the following views is closest to your own: Decisions about biotechnology in the areas of food, environmental and health products should be based primarily on the risks and benefits involved OR Decisions about biotechnology in the areas of food, environmental and health products should be based primarily on the views of moral and ethical issues involved

Decisions about biotechnology in the areas of food, environmental and health products should be based primarily on the risks and benefits involved.....	53	60
Decisions about biotechnology in the areas of food, environmental and health products should be based primarily on the views of moral and ethical issues involved	42	37
Don't Know/Refused.....	6	3

43. Which of the following views is closest to your own: Decisions about biotechnology should be based mainly on the views and advice of experts about the risks and benefits OR Decisions about biotechnology should be based mainly on average Canadians'/Americans' views of risks and benefit

Decisions about biotechnology should be based mainly on the views and advice of experts about the risks and benefits	67	74
Decisions about biotechnology should be based mainly on average Canadians'/Americans' views of risks and benefit	29	23
Don't Know/Refused.....	4	3

44. And which of these two views is closest to your own: If a biotechnology product produced some type of negative impact over the long term, that scientists would not be able to reverse with such an impact OR if a biotechnology product produced some type of negative impact over the long term, scientists would develop ways to reverse it. Which of these two views is closest to your own?

If a biotechnology product produced some type of negative impact over the long term, that scientists would not be able to reverse with such an impact.....	32	28
If a biotechnology product produced some type of negative impact over the long term, scientists would develop ways to reverse it.....	62	65
Don't Know/Refused.....	6	7

45. Would you say you are very familiar, somewhat familiar, not very familiar or not at all familiar with ways in which biotechnology is regulated in Canada/The United States?

	Canada	US
Very Familiar	2	3
Somewhat Familiar.....	21	25
Not Very Familiar	45	42
Not At All Familiar	31	30
Don't know/Refused.....	1	0

46. Which of the following two statements most closely reflects your view: The government of Canada/US probably an effective job of studying and monitoring the impact of biotechnology products OR The government of Canada/US probably does not do enough to study and monitor the impact of biotechnology products

The government of Canada/US probably an effective job of studying and monitoring the impact of biotechnology products.....	28	40
The government of Canada/US probably does not do enough to study and monitor the impact of biotechnology products.....	64	54
Don't Know/Refused.....	8	5

47. In terms of managing the issues associated with biotechnology, do you think it is best that Canada/The United States work on its own to develop appropriate standards and regulations or do you think it is best that Canada/The United States work with other nations to develop international agreements on standards and regulations?

It is best that Canada/The United States work on its own to develop appropriate standards and regulations	13	23
It is best that Canada/The United States work with other nations to develop international agreements on standards and regulations	87	76
Don't Know/Refused.....	1	1

48. To the best of your knowledge, in the last month have you eaten any food products which have been genetically modified?

Yes	33	27
No	45	52
Don't Know/Refused.....	22	21

49. In general, would you say you personally are very comfortable, somewhat comfortable, somewhat uncomfortable, or very uncomfortable with the idea of buying foods that contain genetically modified ingredients?

Very Comfortable	11	14
Somewhat Comfortable	36	41
Somewhat Uncomfortable.....	34	29
Very Uncomfortable.....	16	15
Don't know/Refused.....	2	1

50. If you were to find out that a food product that you have purchased in the past contained "genetically modified" ingredients, would you: continue to buy it, buy it but plan to find out more, not buy it until you found out more, or never buy it again?

	Canada	US
Continue to Buy it	19	28
Buy it but plan to find out more.....	29	30
Not buy it until found out more	37	31
Never buy it again.....	15	10
Don't know/Refused	1	1

51. In your view, is allowing the farming of genetically modified crops essential to ensuring that Canadian/American farmers can compete in the world market?

Yes	54	56
No	39	39
Don't Know/Refused.....	6	6

52. Would you say that allowing the farming of genetically modified crops is very essential, somewhat essential, not very essential or not at all essential to ensuring that Canadian/American farmers can compete in the world market?

Very Essential	20	23
Somewhat Essential	40	45
Not Very Essential	22	18
Not at all Essential	14	10
Don't know/Refused	4	4

53. If the best available scientific evidence indicates that genetically modified grain grown by Canadian/American farmers is safe, should other countries have the right to ban sales of that grain or should Canada/the US have the right to insist (through international bodies) that its grain be sold?

Other countries have the right to ban sales of that grain	51	69
Canada/the US have the right to insist that its grain be sold	43	25
Don't Know/Refused.....	6	7

54. Some people say that countries trying to ban genetically modified foods from countries like Canada/The US are doing so because they think there is a real risk to health. Other people say that they are doing that in order to get rid of competition to their own food products. Which of those two views is closest to your own?

Other countries have the right to ban sales of that grain	46	44
---	----	----

	Canada	US
Canada/the US have the right to insist that its grain be sold	40	45
Don't Know/Refused.....	13	11

55. Some people say that Canada/The US should introduce a new labeling system for food products that contain genetically modified ingredients in Canada/the US, because they say GM food is not like other food, and people want to be more informed about it. Other people say that GM food is just like other food, food companies have tested it, and government has approved it, so we do not need to introduce a new GM food labeling system. Which of these views is closest to your own?

Canada/The US should introduce a new labeling system for food products that contain genetically modified ingredients.....	85	83
We do not need to introduce a new GM food labeling system.....	15	16
Don't Know/Refused.....	1	1

56. Some people say that the government should pass legislation that makes it mandatory for companies to label food products that contain genetically modified ingredients. Others say that there is no need to create more regulations, that government can work with the food industry to create a voluntary system for labeling of these products. Which of these alternatives do you think is most appropriate?

Government should pass legislation that makes it mandatory for companies to label food products that contain genetically modified ingredients.....	79	76
No need to create more regulations, that government can work with the food industry to create a voluntary system for labeling	21	23
Don't Know/Refused.....	0	1

57. Over the last few months, have you heard about any stories or issues involving STEM CELL RESEARCH?

Yes.....	52	70
No	47	29
Don't Know/Refused.....	2	1

58. From what you know or have heard, how beneficial do you think stem cell research will be to your health/the health of Canadians/Americans? (very, somewhat, not very, not at all)

Very Beneficial.....	26	39
Somewhat Beneficial	37	27
Not Very Beneficial.....	10	11
Not at all Beneficial	8	13
Don't Know/Refused.....	19	11

59. From what you know or have heard, how beneficial do you think stem cell research will be to your health/the health of Canadians/Americans? (very, somewhat, not very, not at all)

	Canada	US
Very Beneficial	39	50
Somewhat Beneficial	33	30
Not Very Beneficial	3	6
Not at all Beneficial	4	4
Don't Know/Refused.....	21	10

Stem cell research involves the use of certain human cells to study diseases and their cures. Unlike other types of human cells, stem cells have the unique ability to reproduce any type of cell in the human body. Many scientists say that research in this field will likely produce the most important healthcare breakthroughs of at least the next decade. However, to conduct this research, scientists have to get stem cells. They have been getting them from embryos that are less than 14 days old that have been developed and frozen in fertility clinics, which are going to be discarded because the parents do not need them.

60ab }
60a }
60b }

60. How acceptable is it that this type of research be allowed in Canada/The US (very, somewhat, not very, not at all)

Very Acceptable	29	38
Somewhat Acceptable	39	30
Not Very Acceptable	12	11
Not at all Acceptable	17	18
Don't Know/Refused.....	3	2

61. How acceptable is it that the government of Canada/the US government be involved in supporting this type of research? (very, somewhat, not very, not at all)

Very Acceptable	37	39
Somewhat Acceptable	34	32
Not Very Acceptable	11	9
Not at all Acceptable	15	18
Don't Know/Refused.....	2	2

62. In 2001, President George Bush decided that in the United States, no further government funding would be allowed for new research involving stem cells gathered from unused embryos from fertility clinics. Research on stem cell lines that had been discovered previously would be allowed, but only if the donor had provided consent. Please indicate, on a scale of 1-7, with 1 being a bad decision and 7 being an excellent decision, was this a good or bad decision?

A Bad Decision.....	21	25
---------------------	----	----

	Canada	US
2	8	7
3	10	8
4	18	15
5	15	14
6	9	8
A Good Decision.....	15	21

63. Have you heard of an international study called the Human Genome Project, which involves the mapping of human DNA?

Yes	62	63
No	37	36
Don't Know/Refused.....	1	1

64. The human genome project is an example of an initiative related to biotechnology. From what you know, would you say that identifying or "mapping" human DNA ultimately provides more benefits than drawbacks, or more drawbacks than benefits to humans?

More Benefits than Drawbacks	77	78
More Drawbacks than Benefits	13	14
Don't Know/Refused.....	9	8

One of the newest areas of biotechnology involves cloning of animals for specific purposes. Please tell me if you strongly agree, agree, disagree or strongly disagree with the cloning of animals in each of the following ways. (ROTATE)

65. The use of cloned animals as a source of food, such as using cloned cows as a source of high quality beef or milk

Strongly Agree.....	3	7
Agree.....	21	25
Disagree.....	39	34
Strongly Disagree.....	34	31
Don't know/Refused	3	3

66. The use of cloned animals in medical research, such as using genetically identical mice to test the effectiveness of different types of medical treatments

Strongly Agree.....	14	19
Agree.....	49	45
Disagree.....	18	17
Strongly Disagree.....	18	17

Don't know/Refused 2 1

67. The use of cloned animal organs to develop health products, such as using certain types of enzymes from those organs in medical treatments

Strongly Agree 10 15
 Agree 43 44
 Disagree 24 21
 Strongly Disagree 20 19
 Don't know/Refused 3 1

68. The use of cloned animals to provide consistent organs for transplantation into humans

Strongly Agree 7 12
 Agree 31 35
 Disagree 33 28
 Strongly Disagree 25 23
 Don't know/Refused 4 2

69. The use of cloning to reproduce extinct or endangered species

Strongly Agree 10 11
 Agree 32 31
 Disagree 33 30
 Strongly Disagree 24 25
 Don't know/Refused 1 3

(END OF ROTATION)

70a Most new inventions are protected by what are called patents. Patents ensure that inventors are rewarded by making sure that their inventions cannot be copied for a period of time. However, it also means that until the patent expires, the inventor controls the availability and price of the invention.

70b (T) SPLIT SAMPLE WITH NEXT QUESTION Some people feel that the idea of patent protection is necessary in the field of biotechnology because we need to encourage inventions in this area for all the benefits they can bring. Others are uncomfortable with the idea of providing patent protection in the area of biotechnology, because there is something wrong with the idea of patenting parts of a life form such as an animal or plant. Which is closest to your view?

That the idea of patent protection is necessary in the field 42 47

	Canada	US
Something wrong with the idea of patenting parts of a life form.....	50	45
Don't know/Refused	7	9

71. Some people feel that the idea of patent protection is necessary in the field of biotechnology because we need to encourage inventions in this area for all the benefits they can bring. Others are uncomfortable with the idea of providing patent protection in the area of biotechnology, because the benefits of new inventions might only be available to those who can afford to pay more. Which is closest to your view?

That the idea of patent protection is necessary in the field	49	56
Benefits might only be available to those who can afford to pay.....	44	38
Don't know/Refused	7	6

People have suggested a number of different concerns about different products made using biotechnology. I'm going to ready you some different categories of biotechnology products, and for each what I would like to do is have to tell me which of the following is the greatest concern to you:

72. Genetically modified foods

a) the long term risks they might cause for the environment.....	15	15
b) the long term risks they might cause for human health	59	59
c) that there is something unnatural about these products.....	9	8
d) that the processes involved raise ethical concerns.....	11	10
Don't know/Refused	6	7

73. Genetically modified health products, like bio-engineered drugs

a) the long term risks they might cause for the environment.....	6	7
b) the long term risks they might cause for human health	68	70
c) that there is something unnatural about these products.....	7	5
d) that the processes involved raise ethical concerns.....	11	11
Don't know/Refused	8	8

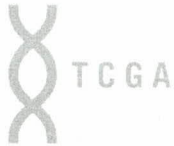
74. Genetically modified environmental products (like GM organisms that clean up toxic waste):

a) the long term risks they might cause for the environment.....	44	47
b) the long term risks they might cause for human health	30	33
c) that there is something unnatural about these products.....	7	5
d) that the processes involved raise ethical concerns.....	8	7

	Canada	US
Don't know/Refused	10	8

75. Cloning of animals for specific purposes, such as a source of food or for use in medical research:

a) the long term risks they might cause for the environment.....	9	10
b) the long term risks they might cause for human health	37	35
c) that there is something unnatural about these products.....	15	12
d) that the processes involved raise ethical concerns.....	32	36
Don't know/Refused	7	7



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English Questionnaire Biotechnology Wave 8

Hello, my name is (_____) I am calling from Earncliffe Research and Communications. I'd like to conduct a survey to gather your opinions. Your participation is completely voluntary and no one will try to sell you anything. Could we have a few minutes of your time? All information collected is completely confidential.

(IF YES) Thank you.

(IF NO) When is a better time for me to call back? (SCHEDULE CALL APPOINTMENT)

(IF REFUSED) Thank and Terminate.

First, do you or does anyone in your household work for a market research firm, the media or a political party?

(IF YES) Thank and terminate.

(IF NO) Continue.

A. In which of the following categories does your age fit?

Under 18 yours of age (thank and terminate)

18-24

25-29

30-34

35-39

40-44

45-49

50-54

55-59

60-64

65-69

70 YEARS OF AGE OR OLDER

1. When you hear the word technology, do you have a positive, neutral, or negative reaction?

Positive

Neutral

Negative

Don't know/Refused

1



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2. When you hear the word biotechnology, do you have a positive, neutral, or negative reaction?

- Positive
- Neutral
- Negative
- Don't know/Refused

3. Over the last three months, have you heard about any stories or issues involving biotechnology?

- Yes
- No
- Don't know/Refused

Biotechnology is an umbrella term covering a broad spectrum of scientific applications used in many sectors, such as health, natural resources, and agriculture. It involves the use of living organisms, or parts of living organisms, to provide new methods of production and make new products. Biotechnology is sometimes referred to as life sciences, genetic modification, or genomics.

4. Would you say you are very familiar, somewhat familiar, not very familiar, or not at all familiar with biotechnology?

- Very familiar
- Somewhat familiar
- Not very familiar
- Not at all familiar
- Refused

5. Would you say you are very interested, somewhat interested, not very interested, or not at all interested in biotechnology?

- Very interested
- Somewhat interested
- Not very interested
- Not at all interested
- Don't know/Refused

6. In general, would you say you strongly support, somewhat support, somewhat oppose or strongly oppose the use of products and processes that involve biotechnology?

- Strongly support
- Somewhat support
- Somewhat oppose
- Strongly oppose
- Don't know/Refused

5

2



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There are many ways in which biotechnology can be used. Please tell me if you strongly agree, agree, disagree or strongly disagree with the use of biotechnology in each of the following ways. (ROTATE)

7. Using genetically modified enzymes that break down corn and turn it into a source of fuel, producing products like ethanol

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

8. The development of genetically modified trees, that would be able to take on larger than normal amounts of carbon, which may help to reduce greenhouse gases

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

9. Corn that has been genetically modified to resist pesticides, so it can be produced in higher volumes and cost less at the grocery store

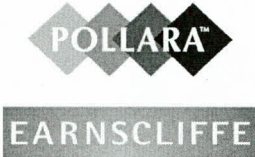
Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

10. The use of genetically modified bacteria or plants to break down pollutants like oil spills and toxic wastes

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

11. Wheat that has been genetically modified to resist certain diseases in order to increase the volume of wheat grown

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Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

12. Helping to cure type 1 diabetes by inserting a modified gene into the pancreas that stimulates the insulin production process in humans.

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

(END OF ROTATION)

There are many things that present risks to us in life. In terms of the safety of yourself and your family, compared to other risks in society, how much risk do the following issues present? Please use a 1-7 scale where 1 means a low level of risk, 4 means a moderate level of risk, and 7 means a high level of risk. (ROTATE)

13. Drinking water from the tap
14. A serious car accident
15. Air pollution or smog
16. Pesticides
17. Violent crime
18. Genetically modified food
19. Bio-pharmaceutical products (drugs that contain genetically modified ingredients)
20. Severe weather events, like hurricanes or floods
21. Nuclear waste

(END OF ROTATION)

In your opinion, does biotechnology bring major benefits, modest benefits, modest drawbacks, or major drawbacks in each of the following areas. How about: (ROTATE)

22. (SPLIT SAMPLE) The health of Canadians/Americans today/The health of Canadians/Americans over the longer term

12

A



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Major benefits
Modest benefits
Modest drawbacks
Major drawbacks
Don't know/Refused

23. (SPLIT SAMPLE) Canada's/America's economy today/Canada's/America's economy over the long term

Major benefits
Modest benefits
Modest drawbacks
Major drawbacks
Don't know/Refused

(END OF ROTATION)

Please tell me whether you strongly agree, agree, disagree, or strongly disagree with each of the following statements: (ROTATE)

24. Until more is known about the risks, government should slow the use of biotechnology

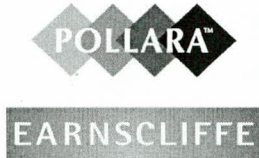
Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

25. From what I know, genetically modified food presents me with few benefits over non-genetically modified food, but it presents many more risks

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

26. From what I know, genetically modified health products (like some pharmaceutical products) provide me with few benefits over non-genetically modified health products, but they provide many more risks

5



Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

27. Biotechnology research represents the next frontier of human endeavour, a frontier that will lead to significant quality of life benefits for all Canadians/Americans

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

28. Biotechnology is the next wave of human technological advancement, just like information technology has been over the past two decades

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

29. Canada/the US is among the world's leaders in the field of biotechnology research

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

30. Canada/The US should be among the world's leaders in the field of biotechnology research

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused





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31. If I knew that ongoing long term safety research was going to be conducted on biotechnology products after they were approved for sale in Canada/the US, it would make me feel comfortable enough to accept these products

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/Refused

32. Although there may be some unknown risks, technologies like biotechnology are part of the future, so all we can do is make sure that its uses are as safe as possible

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/Refused

33. We have to accept some risk to achieve the benefits of biotechnology like new discoveries that improve the diagnosis and cure of serious illnesses

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/Refused

34. We have to accept some risk to achieve the benefits of biotechnology like new foods that contain vitamins or medicine

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/Refused

35. Governments should inform people about biotechnology, and let them decide for themselves whether they want to use biotech products

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/Refused

5

36. (SPLIT) If most scientific evidence says that a particular use of biotechnology is safe, it should be allowed/ If the best available scientific evidence says that a particular use of biotechnology is safe, it should be allowed.

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

(END OF ROTATION)

I'm going to read you a series of questions that ask you to indicate which of two basic positions your opinion is closest to. The first one is:

37. Biotechnology will be one of the most important sources of jobs and economic growth in the 21st century OR Biotechnology might be seen as important now, but probably won't be a significant source of jobs and economic growth in the 21st century. Which of those two positions is closest to your own?

- ab* 38. (SPLIT) Which of the following views is closest to your own: Decisions about biotechnology should be based primarily on the risks and benefits involved OR Decisions about biotechnology should be based primarily on the moral and ethical issues involved *a*

b
Which of the following views is closest to your own: Decisions about biotechnology in the areas of food, environmental and health products should be based primarily on the risks and benefits involved OR Decisions about biotechnology in the areas of food, environmental and health products should be based primarily on the views of moral and ethical issues involved

39. Which of the following views is closest to your own:

Decisions about biotechnology should be based mainly on the views and advice of experts about the risks and benefits:

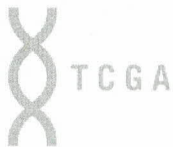
Decisions about biotechnology should be based mainly on average Canadians'/Americans' views of risks and benefit

40. If a biotechnology product produced some type of negative impact over the long term, that scientists would not be able to reverse such an impact OR if a biotechnology product produced some type of negative impact over the long term, scientists would develop ways to reverse it. Which of these two views is closest to your own?

41. Would you say you are very familiar, somewhat familiar, not very familiar or not at all familiar with ways in which biotechnology is regulated in Canada/The United States?



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- Very familiar
- Somewhat familiar
- Not very familiar
- Not at all familiar
- Refused

42. Which of the following two statements most closely reflects your view: The government of Canada/US probably does an effective job of studying and monitoring the impact of biotechnology products OR The government of Canada/US probably does not do enough to study and monitor the impact of biotechnology products

43. In terms of managing the issues associated with biotechnology, do you think it is best that Canada/The United States work on its own to develop appropriate standards and regulations or do you think it is best that Canada/The United States work with other nations to develop international agreements on standards and regulations?

44. To the best of your knowledge, in the last month have you eaten any food products which have been genetically modified?

- Yes
- No
- Don't know/Refused

45. In general, would you say you personally are very comfortable, somewhat comfortable, somewhat uncomfortable, or very uncomfortable with the idea of buying foods that contain genetically modified ingredients?

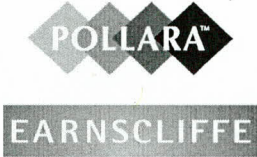
- Very comfortable
- Somewhat comfortable
- Somewhat uncomfortable
- Very uncomfortable
- Don't know/Refused

46. If you were to find out that a food product that you have purchased in the past contained "genetically modified" ingredients, would you: continue to buy it, buy it but plan to find out more, not buy it until you found out more, or never buy it again?

- Continue to buy it
- Buy it but plan to find out more
- Not buy it until you found out more
- Never buy it again
- Don't know/Refused

47. In your view, is allowing the farming of genetically modified crops essential to ensuring that Canadian/American farmers can compete in the world market?

6



Yes
No
Don't know/Refused

48. Would you say that allowing the farming of genetically modified crops is very essential, somewhat essential, not very essential or not at all essential to ensuring that Canadian/American farmers can compete in the world market?

Very essential
Somewhat essential
Not very essential
Not at all essential
Don't know/Refused

49. If the best available scientific evidence indicates that genetically modified grain grown by Canadian/American farmers is safe, should other countries have the right to ban sales of that grain or should Canada/the US have the right to insist (through international bodies) that its grain be sold?
50. Some people say that countries trying to ban genetically modified foods from countries like Canada/The US are doing so because they think there is a real risk to health. Other people say that they are doing that in order to get rid of competition to their own food products. Which of those two views is closest to your own?
51. Some people say that Canada/The US should introduce a new labeling system for food products that contain genetically modified ingredients in Canada/the US, because they say GM food is not like other food, and people want to be more informed about it. Other people say that GM food is just like other food and companies have tested it, and government has approved it, so we do not need to introduce a new GM food labeling system. Which of these views is closest to your own?
52. Some people say that the government should pass legislation that makes it mandatory for companies to label food products that contain genetically modified ingredients. Others say that there is no need to create more regulations, that government can work with the food industry to create a voluntary system for labeling of these products. Which of these alternatives do you think is most appropriate?
53. Over the last few months, have you heard about any stories or issues involving STEM CELL RESEARCH?

Yes
No
Don't know/Refused

6



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54. (SPLIT SAMPLE) From what you know or have heard, how beneficial do you think stem cell research will be to your health/the health of Canadians/Americans? (very, somewhat, not very, not at all)

- Very beneficial
- Somewhat beneficial
- Not very beneficial
- Not at all beneficial
- Don't know/Refused

defn

Stem cell research involves the use of certain human cells to study diseases and their cures. Unlike other types of human cells, stem cells have the unique ability to reproduce any type of cell in the human body. Many scientists say that research in this field will likely produce the most important healthcare breakthroughs of at least the next decade. However, to conduct this research, scientists have to get stem cells. They have been getting them from embryos that are less than 14 days old that have been developed and frozen in fertility clinics, which are going to be discarded because the parents do not need them.

55. How acceptable is it that this type of research be allowed in Canada/The US (very, somewhat, not very, not at all)

- VERY ACCEPTABLE
- SOMEWHAT ACCEPTABLE
- NOT VERY ACCEPTABLE
- NOT AT ALL ACCEPTABLE
- DON'T KNOW/REFUSED

56. How acceptable is it that the government of Canada/the US government be involved in supporting this type of research? (very, somewhat, not very, not at all)

- VERY ACCEPTABLE
- SOMEWHAT ACCEPTABLE
- NOT VERY ACCEPTABLE
- NOT AT ALL ACCEPTABLE
- DON'T KNOW/REFUSED

NEW 1 – In 2001, President George Bush decided that in the United States, no further government funding would be allowed for new research involving stem cells gathered from unused embryos from fertility clinics. Research on stem cell lines that had been discovered previously would be allowed, but only if the donor had provided consent. Please indicate, on a scale of 1-7, with 1 being a bad decision and 7 being an excellent decision, was this a good or bad decision?

57. Have you heard of an international study called the Human Genome Project, which involves the mapping of human DNA?

Yes

①

No
Don't know/Refused

58. The human genome project is an example of an initiative related to biotechnology. From what you know, would you say that identifying or "mapping" human DNA ultimately provides more benefits than drawbacks, or more drawbacks than benefits to humans?

More benefits than drawbacks
More drawbacks than benefits
Don't know/Refused

One of the newest areas of biotechnology involves cloning of animals for specific purposes. Please tell me if you strongly agree, agree, disagree or strongly disagree with the cloning of animals in each of the following ways. (ROTATE)

59. The use of cloned animals as a source of food, such as using cloned cows as a source of beef or milk

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

60. The use of cloned animals in medical research, such as using genetically identical mice to test the effectiveness of different types of medical treatments

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

NEW 2 – The use of cloned animal organs to develop health products, such as using certain types of enzymes from those organs in medical treatment.

61. The use of cloned animals to provide consistent organs for transplantation into humans

Strongly agree
Agree
Disagree
Strongly disagree
Don't know/Refused

12


62. The use of cloning to reproduce extinct or endangered species

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/Refused

END OF ROTATION

Most new inventions are protected by what are called patents. Patents ensure that inventors are rewarded by making sure that their inventions cannot be copied for a period of time. However, it also means that until the patent expires, the inventor controls the availability and price of the invention.

63. (T) SPLIT SAMPLE WITH NEXT QUESTION Some people feel that the idea of patent protection is necessary in the field of biotechnology because we need to encourage inventions in this area for all the benefits they can bring. Others are uncomfortable with the idea of providing patent protection in the area of biotechnology, because there is something wrong with the idea of patenting parts of a life form such as an animal or plant. Which is closest to your view?

a

b Some people feel that the idea of patent protection is necessary in the field of biotechnology because we need to encourage inventions in this area for all the benefits they can bring. Others are uncomfortable with the idea of providing patent protection in the area of biotechnology, because the benefits of new inventions might only be available to those who can afford to pay more. Which is closest to your view?

b

People have suggested a number of different concerns about different products made using biotechnology. I'm going to read you some different categories of biotechnology products, and for each I would like you to tell me which of the following is of greatest concern to you:

64. Genetically modified foods (READ)

- a. the long term risks they might cause for the environment
- b. the long term risks they might cause for human health
- c. that there is something unnatural about these products
- d. that the processes involved raise ethical concerns

65. Genetically modified health products, like bio-engineered drugs (READ)

- a. the long term risks they might cause for the environment
- b. the long term risks they might cause for human health
- c. that there is something unnatural about these products
- d. that the processes involved raise ethical concerns

66. Genetically modified environmental products (like GM organisms that clean up toxic waste) (READ)
- a. the long term risks they might cause for the environment
 - b. the long term risks they might cause for human health
 - c. that there is something unnatural about these products
 - d. that the processes involved raise ethical concerns
67. Cloning of animals for specific purposes, such as a source of food or for use in medical research (READ)
- a. the long term risks they might cause for the environment
 - b. the long term risks they might cause for human health
 - c. that there is something unnatural about these products
 - d. that the processes involved raise ethical concerns

DEMOGRAPHICS

68. What is the highest level of education you have completed?

Some high school or less
High school graduate
Some college or technical school/CEGEP
College or technical school/CEGEP graduate
Some university
University graduate
Post graduate studies (masters/doctoral)
Don't know/Refused (DO NOT READ)

69. In which of the following categories does your total household income, before taxes, fit? (10k increments)

Less than \$20,000
\$20,000 to \$29,999
\$30,000 to \$39,999
\$40,000 to \$49,999
\$50,000 to \$59,999
\$60,000 to \$69,999
\$70,000 to \$79,999
\$80,000 to \$89,999
\$90,000 to \$99,999
\$100,000 to \$149,999
\$150,000 or more
Don't know/Refused



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70. Which of the following descriptions best describes your household: (one person, living alone; married or common law, no children; married with children under 18 living at home, married with children that have moved out of the home; living with a group of unrelated individuals)

- One person, living alone
- Married or common law no children
- Married or common law with children under 18 living at home
- Married or common law with children that have moved out of the home
- Single parent, with children under 18 living at home
- Living with a group of unrelated individuals
- Other (DO NOT READ) (NO SPECIFY)
- Don't know (DO NOT READ)

71. Employment status

- Employed full-time for pay
- Employed part-time for pay
- Self-employed
- Currently seeking work
- Homemaker
- Student
- Disabled
- Retired
- Other
- Don't know/Refused (DO NOT READ)

72. Gender (pre-coded)

73. Postal code (Recode into urban/rural)

74. Language of interview pre-coded



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French Questionnaire Biotechnology Wave 8

Bonjour ou bonsoir, ici (___). Je vous appelle d'Earncliffe Research and Communications. J'aimerais mener un sondage pour obtenir vos opinions. Votre participation est tout à fait volontaire et personne n'essayera de vous vendre quoi que ce soit. Auriez-vous l'obligeance de nous consacrer quelques minutes de votre temps?

Toutes vos réponses seront tenues strictement confidentielles.

(SI OUI) Merci

(SI NON) Quand pourrais-je vous rappeler? (PRENEZ RENDEZ-VOUS POUR RAPPELER)

(SI REFUS) Remerciez et terminez

Bonjour ou bonsoir, ici (___). Je vous appelle d'Earncliffe Research and Communications. J'aimerais mener un sondage pour obtenir vos opinions. Votre participation est tout à fait volontaire et personne n'essayera de vous vendre quoi que ce soit. Auriez-vous l'obligeance de nous consacrer quelques minutes de votre temps?

Toutes vos réponses seront tenues strictement confidentielles.

(SI OUI) Merci

(SI NON) Quand pourrais-je vous rappeler? (PRENEZ RENDEZ-VOUS POUR RAPPELER)

(SI REFUS) Remerciez et terminez

Tout d'abord, est-ce que vous ou un membre de votre foyer travaillez pour une entreprise d'étude de marché, les médias ou un parti politique?

Oui (Terminez)

Non

NSP/REFUS (Terminez)

A. Dans quelle catégorie d'âge vous situez-vous?

Moins de 18 ans (Terminez)

18-24

25-29

30-34

35-39

40-44

45-49

50-54
55-59
60-64
65-69
70 ans ou plus
REFUS

1. Lorsque vous entendez le mot technologie, avez-vous une réaction positive, neutre ou négative?

Positive

Neutre

Négative

Ne sait pas, refus

2. Lorsque vous entendez le mot biotechnologie, avez-vous une réaction positive, une réaction neutre ou une réaction négative?

Réaction Positive

Une Réaction Neutre

Une Réaction Négative

NSP/REFUS (NE PAS LIRE)

3. Depuis trois mois, avez-vous entendu quoi que ce soit sur des histoires ou des enjeux concernant la biotechnologie?

Oui

Non

NSP/REFUS (NE PAS LIRE)

La biotechnologie est un terme général couvrant un large éventail d'applications scientifiques utilisées dans de nombreux secteurs, comme la santé, les ressources naturelles et l'agriculture. Il comporte l'utilisation d'organismes vivants ou de parties d'organismes vivants pour offrir de nouvelles méthodes de production et fabriquer de nouveaux produits. On appelle parfois la biotechnologie les sciences biologiques, la modification génétique ou la génomique.

4. Diriez-vous que la biotechnologie vous est très familière, assez familière, pas très familière ou pas familière du tout?

Très familière

Assez familière

Pas très familière

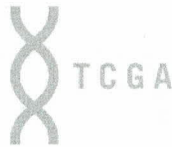
Pas familière du tout

REFUS (NE PAS LIRE)

5. Vous diriez-vous très intéressé, assez intéressé, pas très intéressé ou pas intéressé du tout à la



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biotechnologie?
Très intéressé
Assez intéressé
Pas très intéressé
Pas intéressé du tout
Ne sait pas, refus

6. En général, diriez-vous que vous soutenez vivement, que vous soutenez relativement, que vous vous opposez relativement ou que vous vous opposez vivement à l'utilisation de produits et processus faisant intervenir la biotechnologie?

soutenez vivement
que vous soutenez relativement
que vous vous opposez relativement
que vous vous opposez vivement
NSP/REFUS (NE PAS LIRE)

La biotechnologie peut être utilisée de nombreuses façons. Veuillez me dire si vous êtes tout à fait en accord, en accord, en désaccord ou tout à fait en désaccord avec les façons suivantes d'utiliser la biotechnologie.

7. Utiliser des enzymes modifiés génétiquement pour décomposer le maïs et le transformer en une source de carburant, produisant ainsi des produits comme l'éthanol.

8. Le développement d'arbres modifiés génétiquement capables d'absorber de plus grandes quantités de carbone que la moyenne, ce qui pourrait contribuer à réduire les gaz à effet de serre.

9. Du maïs génétiquement modifié pour résister aux parasites et pouvant ainsi être produit en plus grande quantité et coûter moins cher à l'épicerie.

10. L'utilisation de bactéries ou de plantes modifiées génétiquement pour décomposer les polluants comme les marées noires et les déchets toxiques.

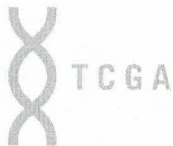
11. Du blé ayant été modifié génétiquement pour résister à certaines pestes afin d'augmenter le volume de blé produit.

12. Aider à guérir le diabète de type 1 en insérant un gène modifié dans le pancréas pour stimuler la production d'insuline chez les humains.

Il existe plusieurs choses représentant un risque pour nous dans la vie. Comparativement aux autres risques dans la société, dans quelle mesure les enjeux suivants représentent-ils un risque pour votre sécurité et de celle de votre famille? Veuillez utiliser une échelle de 1 à 7, où 1 signifie un faible niveau de



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risque, 4 signifie un niveau modéré de risque et 7 signifie un niveau élevé de risque.

13. Boire l'eau du robinet
14. Un grave accident de voiture
15. La pollution de l'air ou le smog
16. Les pesticides
17. Les crimes violents
18. Les aliments modifiés génétiquement
19. Les produits bio-pharmaceutiques (les médicaments contenant des ingrédients modifiés génétiquement)
20. Les événements météorologiques graves, comme les ouragans et les inondations
21. Déchets nucléaires

D'après vous, la biotechnologie produit-elle des avantages majeurs, des avantages modestes, des désavantages modestes ou des désavantages majeurs dans les secteurs suivants. Qu'en est-il de...

- Avantages majeurs
- Avantages mineurs
- Désavantages mineurs
- Désavantages majeurs
- Ne sait pas/refus

22. La santé des Canadiens présentement/La santé des Canadiens à long terme.
23. L'économie du Canada présentement/L'économie du Canada à long terme.

Diriez-vous que vous êtes tout à fait d'accord, d'accord, en désaccord ou tout à fait en désaccord avec chacune des déclarations suivantes:

- Tout à Fait D'accord
- D'accord
- En Désaccord
- Tout à Fait en Désaccord
- NSP/REFUS

24. En attendant d'en savoir plus sur les risques, les gouvernements devraient ralentir l'utilisation de la biotechnologie.

25. D'après ce que j'en sais, les aliments modifiés génétiquement m'apportent peu d'avantages par rapport aux aliments non modifiés génétiquement, mais comportent beaucoup plus de risques.

26. D'après ce que j'en sais, les produits de santé modifiés génétiquement (comme les médicaments) m'apportent peu d'avantages par rapport aux produits de santé non modifiés génétiquement (comme les médicaments), mais comportent beaucoup plus de risques.



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27. La recherche en biotechnologie représente la nouvelle frontière des efforts humains, une frontière qui produira des avantages considérables au niveau de la qualité de vie pour tous les Canadiens.

28. La biotechnologie est la prochaine vague de progrès technologique humain, tout comme la technologie de l'information l'a été au cours des deux dernières décennies.

29. Le Canada est parmi les chefs de file en matière de recherche en biotechnologie.

30. Le Canada devrait être parmi les chefs de file en matière de recherche en biotechnologie.

31. Si je savais qu'on allait continuer de faire des études à long terme sur la sûreté des produits de biotechnologie une fois qu'ils seraient approuvés au Canada, je serais assez rassuré pour accepter ces produits.

32. Bien qu'il puisse exister certains risques inconnus, les technologies comme la biotechnologie font partie de l'avenir, et tout ce que nous pouvons faire c'est de s'assurer que ses utilisations sont aussi sûres que possible.

33. Nous devons accepter certains risques pour obtenir des avantages de la biotechnologie tels que de nouvelles découvertes qui permettront d'améliorer le diagnostic et le traitement de maladies graves.

34. Nous devons accepter certains risques pour obtenir des avantages de la biotechnologie tels que de nouveaux aliments qui contiennent des vitamines ou des médicaments.

35. Le gouvernement devrait renseigner les gens au sujet de la biotechnologie et les laisser décider eux-mêmes s'ils veulent utiliser des produits biotechnologiques.

36. Si la plupart des preuves scientifiques les meilleures preuves disponibles établissent qu'un usage particulier de la biotechnologie est sûr, cette utilisation doit être permise./

Si les meilleures preuves scientifiques disponibles établissent qu'un usage particulier de la biotechnologie est sûr, cette utilisation doit être permise.

Je vais vous lire une série de questions vous demandant d'indiquer laquelle des deux positions de base se rapproche le plus de votre opinion. Voici la première:

37. La biotechnologie sera une des plus importantes sources d'emplois et de croissance économique au 21^e siècle OU La biotechnologie peut sembler importante maintenant, mais elle ne sera probablement pas une source importante d'emplois et de croissance économique au 21^e siècle.

Laquelle de ces deux positions reflète le mieux la vôtre?

38. Laquelle des opinions suivantes reflète le mieux la vôtre?

Les décisions concernant la biotechnologie devraient être principalement basées sur les risques et les avantages en jeu OU Les décisions concernant la biotechnologie devraient être principalement basées sur les questions de morales et d'éthique en jeu.



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Laquelle des opinions suivantes reflète le mieux la vôtre?

Les décisions concernant la biotechnologie dans le domaine des produits alimentaires, environnementaux et de santé devraient être principalement basées sur les risques et les avantages en jeu OU Les décisions concernant la biotechnologie dans le domaine des produits alimentaires, environnementaux et de santé devraient être principalement basées sur les questions de morales et d'éthique en jeu.

39. Lequel des énoncés suivants reflète le mieux votre opinion:

Les décisions concernant la biotechnologie devraient principalement être basées sur les opinions et les conseils des experts quant aux risques et aux avantages OU Les décisions concernant la biotechnologie devraient principalement être basées sur les opinions des Canadiens moyens quant aux risques et aux avantages.

40. Et lequel de ces deux énoncés reflète le mieux votre opinion:

Si un produit de biotechnologie avait un impact négatif à long terme, les scientifiques ne seraient pas capables d'y remédier OU

Si un produit de biotechnologie avait un impact négatif à long terme, les scientifiques développeraient une façon d'y remédier.

41. Diriez-vous que les façons dont la biotechnologie est réglementée au Canada vous sont très familières, assez familières, pas très familières ou pas familières du tout?

Très familières

Assez familières

Pas très familières

Pas familières du tout

Refus

42. Lequel des deux énoncés suivants reflète le mieux votre opinion:

le gouvernement du Canada arrive efficacement à étudier et à surveiller l'impact des produits de biotechnologie OU le gouvernement du Canada n'en fait pas assez pour étudier et surveiller l'impact des produits de biotechnologie.

43. Pour ce qui est de gérer les enjeux associés à la biotechnologie, croyez-vous qu'il vaut mieux que le Canada travaille seul pour développer des normes et des règlements appropriés ou croyez-vous qu'il vaut mieux que le Canada travaille avec d'autres nations pour développer des ententes internationales sur les normes et les règlements?

44. Depuis un mois, croyez-vous avoir consommé des produits alimentaires ayant été génétiquement



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modifiés?

Oui

Non

Ne sait pas/refus

45. En général, diriez-vous que vous êtes tout à fait à l'aise, relativement à l'aise, relativement mal à l'aise ou tout à fait mal à l'aise avec l'idée d'acheter des aliments qui contiennent des ingrédients génétiquement modifiés?

Tout à fait à l'aise

Relativement à l'aise

Relativement mal à l'aise

Tout à fait mal à l'aise

Ne Sait Pas/Refus (NE LISEZ PAS)

46. Si vous découvriez qu'un produit alimentaire que vous avez acheté contenait des ingrédients "génétiquement modifiés", est-ce que vous:

continueriez à l'acheter, continueriez à l'acheter tout en prévoyant vous renseigner pour en savoir davantage, ne l'achèteriez plus avant d'en savoir davantage ou ne l'achèteriez jamais plus?

Continuerait à l'acheter

L'achèterait en prévoyant vous en renseigner pour en savoir davantage

Ne l'achèterait plus avant d'en savoir davantage

Ne l'achèterait jamais plus

Ne sait pas, refus

47. Selon vous, permettre la culture de produits agricoles modifiés est-il essentiel pour que les fermiers canadiens puissent concurrencer sur les marchés mondiaux?

Oui

Non

NSP/Refus

48. Diriez-vous que permettre la culture de récoltes modifiées génétiquement est très essentiel, plutôt essentiel, pas très essentiel ou pas essentiel du tout pour faire en sorte que les fermiers canadiens puissent concurrencer sur le marché mondial?

Très essentiel

Plutôt essentiel

Pas très essentiel

Pas essentiel du tout

NSP/REFUS



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49. Si les meilleures preuves scientifiques disponibles indiquent que le grain modifié génétiquement que les fermiers canadiens cultivent est sûr, les autres pays devraient-ils avoir le droit d'interdire la vente de ce grain ou le Canada devrait-il avoir le droit d'insister (par l'intermédiaire des organisations internationales) que son grain soit vendu?

50. Certaines personnes disent que les pays tentant d'interdire le grain génétiquement modifié provenant de pays comme le Canada le font parce qu'ils croient qu'il existe des risques réels pour la santé. D'autres personnes disent qu'ils le font pour éliminer la concurrence pour leur propre grain. Lequel de ces deux points de vue reflète le mieux le vôtre?

51. Certaines personnes disent que le Canada devrait introduire un nouveau système d'étiquetage pour les produits alimentaires contenant des ingrédients modifiés génétiquement au Canada, car les aliments modifiés génétiquement ne sont pas comme les autres aliments, et les gens désirent être mieux informés à ce sujet. D'autres disent que les produits alimentaires modifiés génétiquement sont comme les autres produits alimentaires; les compagnies les ont testés et les gouvernements les ont approuvés, nous n'avons donc pas besoin de mettre en oeuvre un nouveau système d'étiquetage pour les aliments modifiés génétiquement. Lequel de ces deux points de vue reflète le mieux le vôtre?

52. Certaines personnes disent que le gouvernement devrait adopter une législation obligeant les compagnies à étiqueter les produits alimentaires contenant des ingrédients modifiés génétiquement. D'autres disent qu'il est inutile de créer d'autres règlements, que le gouvernement peut travailler de concert avec l'industrie alimentaire pour créer un système d'étiquetage volontaire de ces produits. Selon vous, laquelle de ces possibilités est la plus appropriée?

53. Depuis trois mois, avez-vous entendu parler d'enjeux liés à la recherche sur les cellules souches?

Oui

Non

Ne Sait Pas/Refus (NE LISEZ PAS)

54. Selon ce que vous savez ou avez entendu dire, dans quelle mesure croyez-vous que la recherche sur les cellules souches sera bénéfique pour votre santé? /

Selon ce que vous savez ou avez entendu dire, dans quelle mesure croyez-vous que la recherche sur les cellules souches sera bénéfique pour la santé des Canadiens?



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La recherche sur les cellules souches comporte l'utilisation de certaines cellules humaines pour étudier les maladies et leurs cures. Contrairement aux autres types de cellules humaines, les cellules souches possèdent l'unique habileté de reproduire n'importe quel type de cellule du corps humain. De nombreux scientifiques affirment que la recherche dans ce domaine mènera probablement aux plus importants progrès médicaux de la prochaine décennie ou même plus. Cependant, pour faire ces recherches, les scientifiques doivent obtenir des cellules souches. Jusqu'à maintenant, ils les ont obtenues d'embryons de moins de 14 jours qui ont été développés puis congelés dans les cliniques de fertilisation et qui seront jetés, car les parents n'en ont pas besoin.

55. Dans quelle mesure est-il acceptable que ce genre de recherche soit permis au Canada?

- Très acceptable
- Plutôt acceptable
- Pas très acceptable
- Pas acceptable du tout
- Ne Sait Pas/Refus (NE LISEZ PAS)

56. Dans quelle mesure est-il acceptable que le gouvernement du Canada appuie ce genre de recherche?

- Très, Assez, Pas très, Pas du tout?
- Très acceptable
- Plutôt acceptable
- Pas très acceptable
- Pas acceptable du tout
- Ne Sait Pas/Refus (NE LISEZ PAS)

NEW 1 En 2001, le président George Bush a décidé qu'aux États-Unis aucun autre financement gouvernemental ne serait accordé aux nouvelles recherches utilisant les cellules souches prélevées d'embryons non-utilisés provenant des cliniques de fertilité. La recherche sur les lignes de cellules souches déjà découvertes serait permise, mais seulement avec le consentement du donneur. A l'aide d'une échelle allant de 1 à 7, où 1 signifie une mauvaise décision et 7 signifie une excellente décision, veuillez indiquer s'il s'agit d'une bonne ou d'une mauvaise décision?

57. Avez-vous entendu parler d'une étude internationale appelée le Projet du génome humain, qui comporte la cartographie de l'ADN humain?

- OUI
- NON
- NSP/REFUS

58. Le projet du génome humain est un exemple d'initiative liée à la biotechnologie. Selon ce que vous en savez, diriez-vous que l'identification de l'ADN humain offre en définitive plus d'avantages que de désavantages ou plus de désavantages que d'avantages pour les humains?

- Plus d'avantages que de désavantages
- Plus de désavantages que d'avantages



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Ne sait pas, refus

Un des nouveaux secteurs de la biotechnologie comporte le clonage d'animal à des fins spécifiques. Veuillez me dire si vous êtes tout à fait d'accord, d'accord, en désaccord ou tout à fait en désaccord avec le clonage d'animal dans chacun des contextes suivants.

59. L'utilisation d'animaux clonés comme source alimentaire, comme utiliser des vaches clonées comme source de boeuf ou de lait.

60. L'utilisation d'animaux clonés en recherche médicale, comme l'utilisation de souris génétiquement identiques pour vérifier l'efficacité de différents types de traitements médicaux.

NEW 2 Utiliser les organes d'animaux clonés pour développer des produits de santé, comme utiliser dans les traitements médicaux certains types d'enzymes provenant de ces organes.

61. L'utilisation d'animaux clonés pour fournir des organes à transplanter aux humains.

62. L'utilisation du clonage pour reproduire des espèces disparues ou menacées.

La plupart des nouvelles inventions sont protégées par des brevets. Les brevets font en sorte que les inventeurs soient récompensés en s'assurant que leurs inventions ne puissent pas être copiées pendant un certain temps. Cependant, cela signifie également que l'inventeur contrôle la disponibilité et le prix de son invention jusqu'à l'expiration du brevet.

63. Certaines personnes sont d'avis que la protection de brevet est nécessaire dans le domaine de la biotechnologie car nous devons encourager les inventions dans ce domaine en raison de tous les avantages qu'elles peuvent comporter.

D'autres éprouvent un certain malaise par rapport à la protection de brevet dans le domaine de la biotechnologie, car il y a quelque chose de répréhensible dans l'idée de breveter des parties d'une forme de vie comme un animal ou une plante. Lequel de ces points de vue reflète le mieux le vôtre?

Certaines personnes sont d'avis que la protection de brevet est nécessaire dans le domaine de la biotechnologie, car nous devons encourager les inventions dans ce domaine en raison de tous les avantages qu'elles peuvent comporter.

D'autres éprouvent un certain malaise par rapport à la protection de brevet dans le domaine de la biotechnologie, car il est possible que les avantages des nouvelles inventions ne soient offerts qu'à ceux ayant les moyens de payer davantage. Lequel de ces points de vue reflète le mieux le vôtre?

Les gens ont exprimé diverses préoccupations par rapport aux produits fabriqués au moyen de la biotechnologie. Je vais vous lire différentes catégories de produits de biotechnologie et, pour chacune, j'aimerais que vous me disiez ce qui vous préoccupe le plus:



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Public Opinion Research into Biotechnology Issues
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64. Les aliments modifiés génétiquement:(LISEZ)

- 1 les risques à long terme que cela pourrait représenter pour l'environnement
- 2 les risques à long terme que cela pourrait représenter pour la santé humaine
- 3 Il y a quelque chose de pas naturel dans ces produits
- 4 le processus utilisé soulève des inquiétudes éthiques
- 5 NSP/REFUS

65. Les produits de santé modifiés génétiquement, comme les médicaments de bio-ingénierie:(LISEZ)

- 1 les risques à long terme que cela pourrait représenter pour l'environnement
- 2 les risques à long terme que cela pourrait représenter pour la santé humaine
- 3 Il y a quelque chose de pas naturel dans ces produits
- 4 le processus utilisé soulève des inquiétudes éthiques
- 5 NSP/REFUS

66. Les produits environnementaux modifiés génétiquement
(comme les OGM éliminant les déchets toxiques):

- 1 les risques à long terme que cela pourrait représenter pour l'environnement
- 2 les risques à long terme que cela pourrait représenter pour la santé humaine
- 3 Il y a quelque chose de pas naturel dans ces produits
- 4 le processus utilisé soulève des inquiétudes éthiques
- 5 NSP/REFUS

67. Le clonage d'animaux à des fins spécifiques, pour les utiliser comme source alimentaire ou pour les utiliser dans la recherche médicale:

- 1 les risques à long terme que cela pourrait représenter pour l'environnement
- 2 les risques à long terme que cela pourrait représenter pour la santé humaine
- 3 Il y a quelque chose de pas naturel dans ces produits
- 4 le processus utilisé soulève des inquiétudes éthiques
- 5 NSP/REFUS

68. Quel est le plus haut niveau d'éducation que vous avez terminé?

- Quelques années de secondaire ou moins,
- Un diplôme d'études secondaires,
- Quelques années de cégep, de collège ou d'école technique,
- Un diplôme collégial ou d'école technique,
- Quelques années d'université,
- Un diplôme universitaire,
- Ou des études de deuxième ou troisième cycle (maîtrise ou doctorat)?
- Ne Sait Pas/Refus (NE LISEZ PAS)

69. Parmi les catégories suivantes, où se situe le revenu total de votre ménage, avant l'impôt?

- Moins de 20 000 \$



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- 20 000 \$ à 29 999 \$
- 30 000 \$ à 39 999 \$
- 40 000 \$ à 49 999 \$
- 50 000 \$ à 59 999 \$
- 60 000 \$ à 69 999 \$
- 70 000 \$ à 79 999 \$
- 80 000 \$ à 89 999 \$
- 90 000 \$ à 99 999 \$
- 100 000 \$ à 149 999 \$
- 150 000 \$ ou plus
- Ne Sait Pas/Refus (NE LISEZ PAS)

70. Laquelle des descriptions suivantes convient le mieux à votre ménage? (LISEZ)

- Une personne vivant seule
- Marié ou en union de fait sans enfants
- Marié ou en union de fait avec des enfants de 18 ans ou moins
vivant à la maison
- Marié ou en union de fait avec des enfants ayant quitté la maison
- Parent célibataire avec des enfants de moins de 18 ans vivant à la maison
- Vivant avec un groupe d'individus n'ayant pas de liens de parenté
- Autre (NE LISEZ PAS)
- Don't know (NE LISEZ PAS)

71. Laquelle des catégories suivantes décrit le mieux votre situation d'emploi? Etes-vous...(LISEZ LA LISTE)

- Employé à temps plein contre rémunération
- Employé à temps partiel contre rémunération
- Travailleur, travailleuse autonome
- Présentement à la recherche de travail
- Au foyer
- Étudiant(e)
- Handicapé
- Retraité
- Autre (NE LISEZ PAS)
- Ne Sait Pas/Refus (NE LISEZ PAS)

73. Quel est le code postal de votre adresse postale à la maison?

EARNSCLIFFE

Report to:

BACC

Biotechnology:

Wave 8 Canada/US

Research Findings

March 2003

EARNSCLIFFE

Methodology

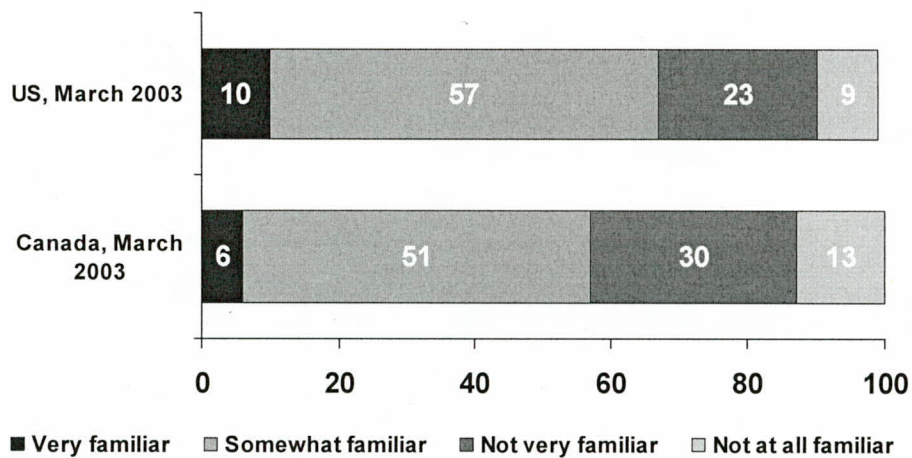
- **Reporting on two pieces of research today**
 - Both involving a combination of qualitative and quantitative research

- **Wave 8**
 - A bi-national survey, objective is to compare US to Canadian attitudes
 - Samples of 1000 Americans, 600 Canadians
 - Margins of error 3.1% on the US sample, 4.0% on the Canadian sample, 19 times out of 20
 - Data collected March 18 - 31

- **Genetic Information and Privacy**
 - Survey of 1200 Canadian respondents
 - Margin of error 2.8%, 19 times out of 20
 - Data collected February 10-20

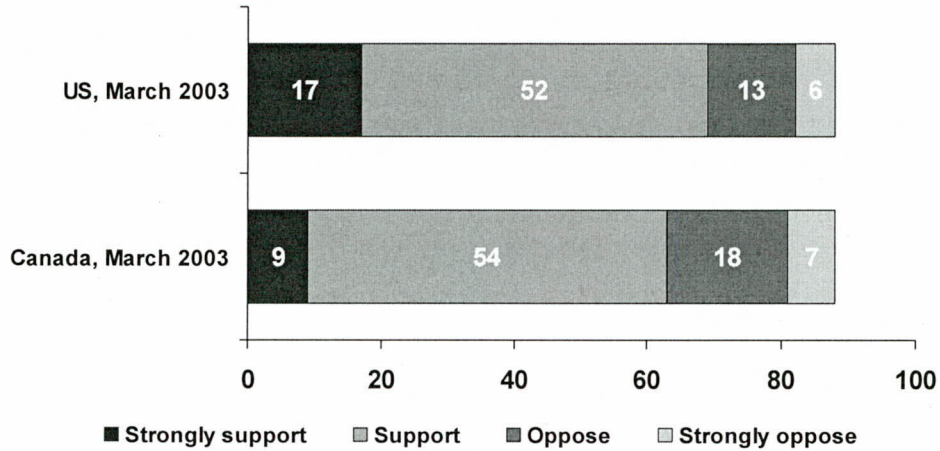
- **Americans more aware, more familiar than Canadians**
 - Although fairly low levels of reported familiarity overall
- **Americans tend to be more supportive of biotechnology than Canadians**
 - Twice as many express strong support
- **Entrenched opposition of similar small size in the two countries**
 - Under 10% of the population
- **Trend lines in Canada suggest opinion stability overall, with slight growth in favourability toward the technology**

Would you say you are very familiar, somewhat familiar, not very familiar or not at all familiar with biotechnology?



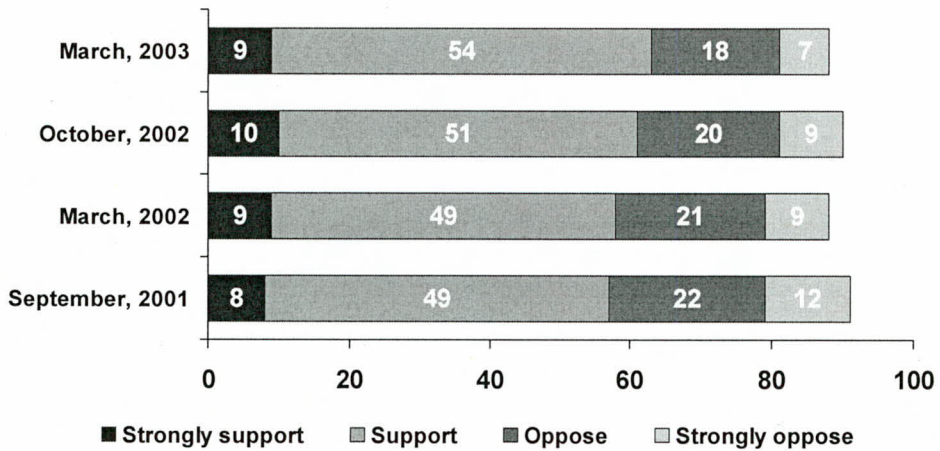
Support or Oppose Biotechnology

In general, would you say you strongly support, somewhat support, somewhat oppose or strongly oppose the use of products and processes that involve biotechnology?

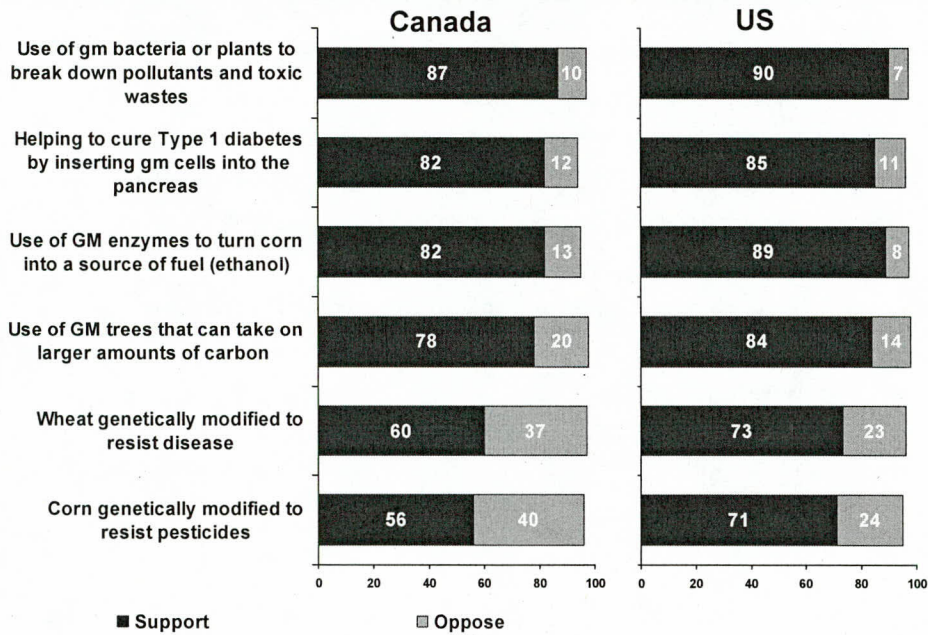


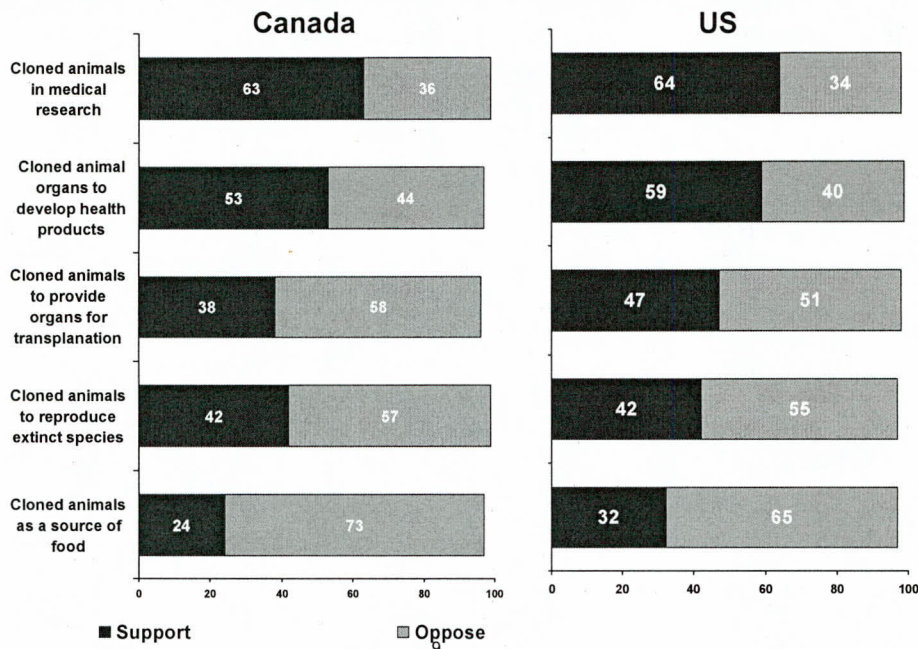
**Support or Oppose Biotechnology
(Tracking Canada)**

In general, would you say you strongly support, somewhat support, somewhat oppose or strongly oppose the use of products and processes that involve biotechnology?



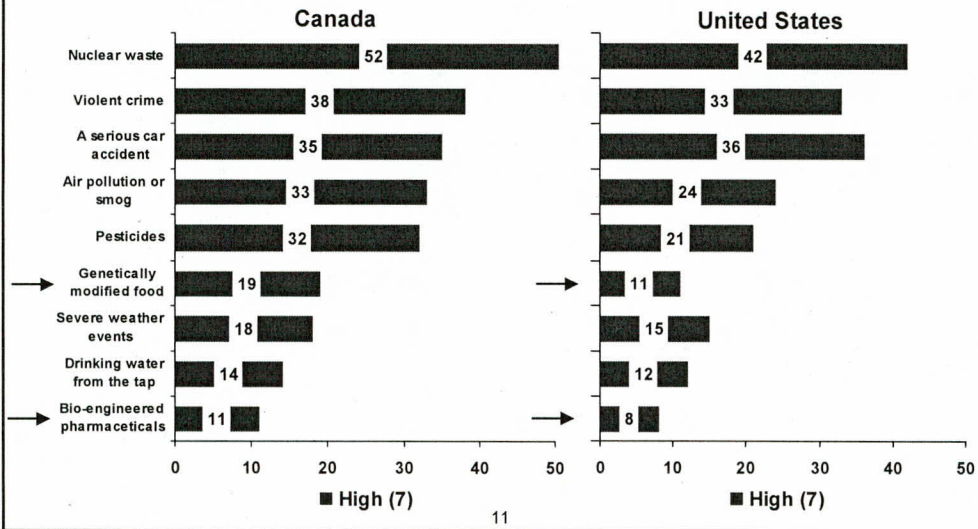
- **Two sets of applications tested in this wave**
 - Traditional biotech applications in food, health, environment
 - Various applications of animal cloning
 - For food, medical, other purposes
- **Americans tend to be more supportive of all types of applications**
 - Including food and cloning
- **The hierarchy of support/opposition is consistent with what we have observed in Canada in the past**
 - Health applications, environmental applications widely supported
 - Food less so, although much more widely supported than in Canada
- **The “marginal benefit” and “purpose” tests appear to apply in the same way for cloning animals as it does for other applications**
 - The greater the marginal benefit, and the more widely beneficial the purpose, the more supportive people tend to be



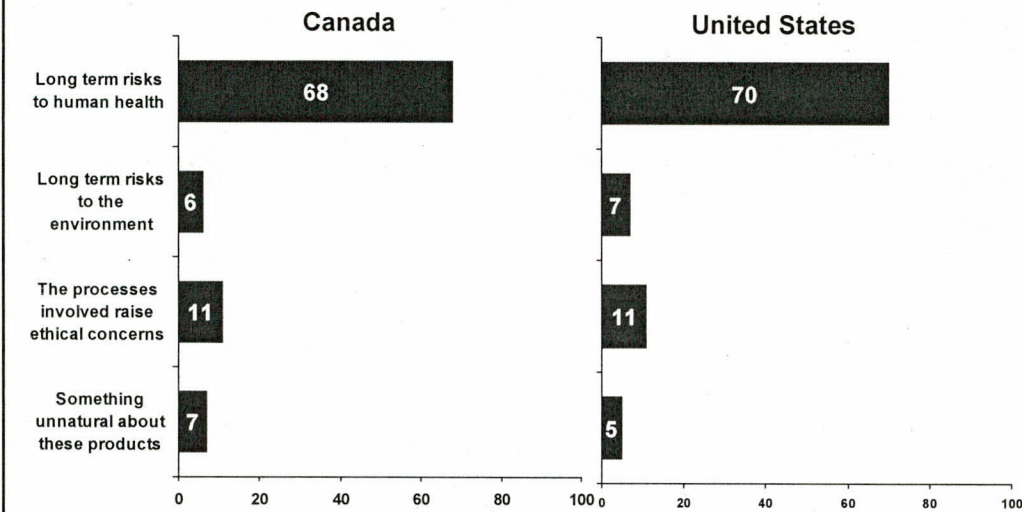


- **Risks of biotechnology products perceived to be lower in the US than in Canada**
 - Drinking water from the tap seen as a risk equal to GM food in the US
- **Long term risks to human health are the pervasive concerns regarding food, health applications**
 - Moral issues not strongly at play in these areas
- **Moral issues more at play in the realm of cloning**
 - Of equal importance as health risks
- **Canada and US respondents exhibit similar views with regard to ongoing concerns**

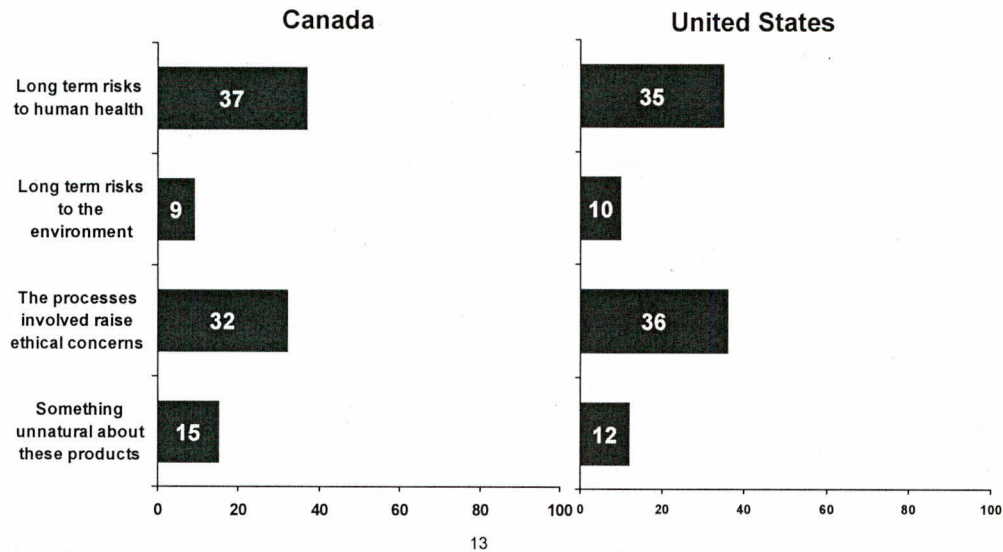
There are many things that present risks to us in life. In terms of the safety of yourself and your family, compared to other risks in society, how much risk do the following issues present? Please use a 1-7 scale where 1 means a low level of risk, 4 means a moderate level of risk, and 7 means a high level of risk.



People have suggested a number of different concerns about products and processes involving genetic modification or bio-engineering of health products (like drugs). Of the four below, which is the one that is the greatest concern to you:

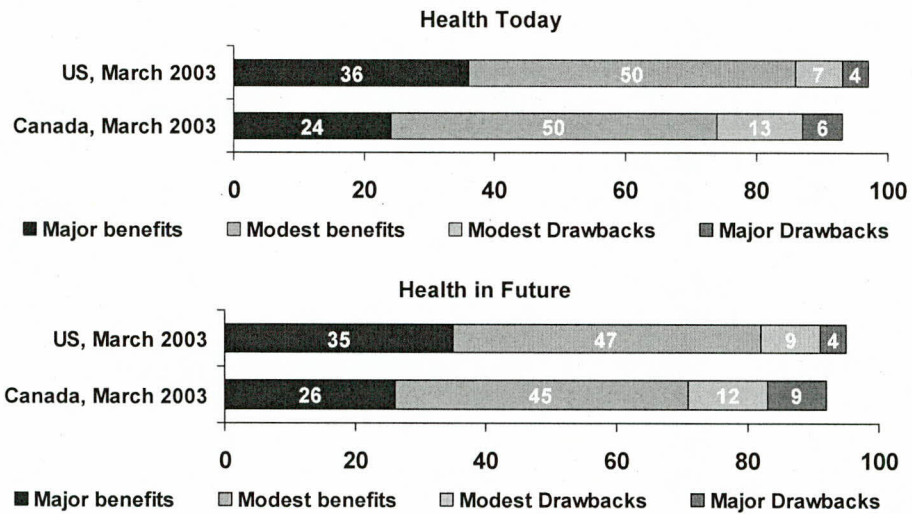


People have suggested a number of different concerns about products and processes involving the cloning of animals. Of the four below, which is the one that is the greatest concern to you:

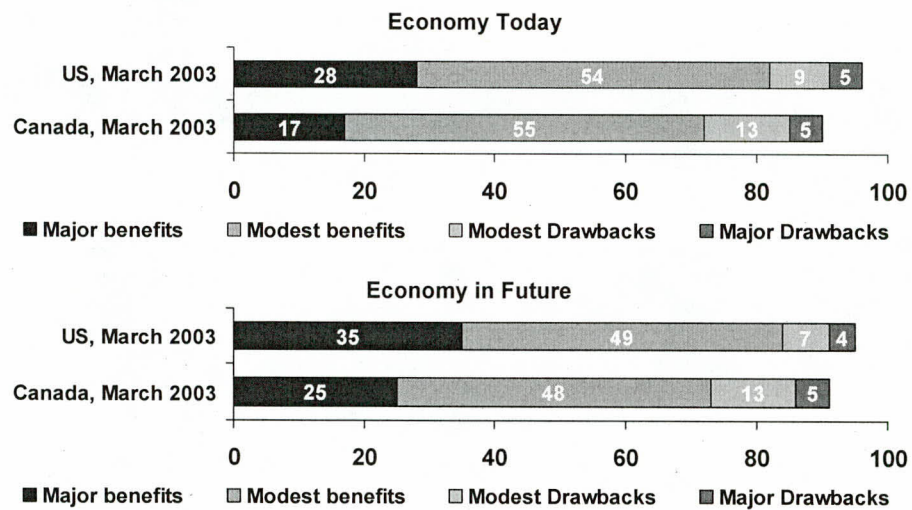


- In spite of the risks, most Americans and Canadians believe that the benefits of these technologies outweigh the risks
 - In terms of health
 - And in terms of the economy
- Americans hold these beliefs very strongly

In your opinion, does biotechnology bring major benefits, modest benefits, modest drawbacks, or major drawbacks in the following areas (HEALTH)

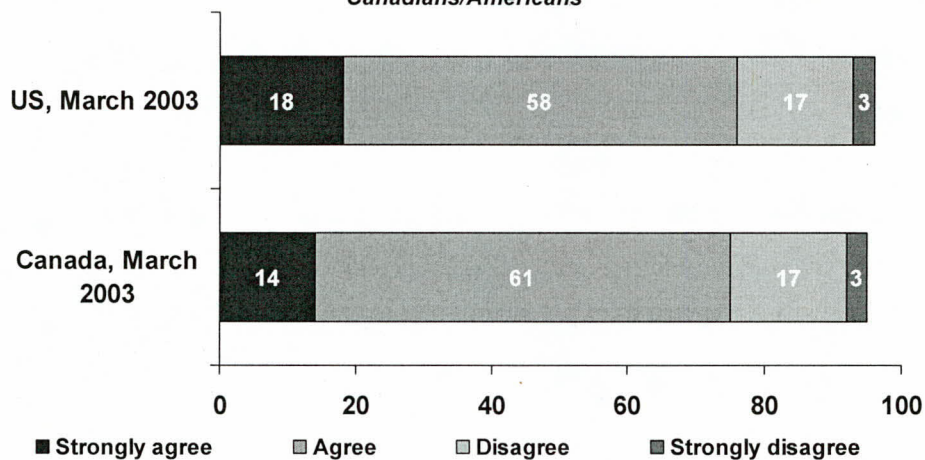


In your opinion, does biotechnology bring major benefits, modest benefits, modest drawbacks, or major drawbacks in the following areas (ECONOMY)

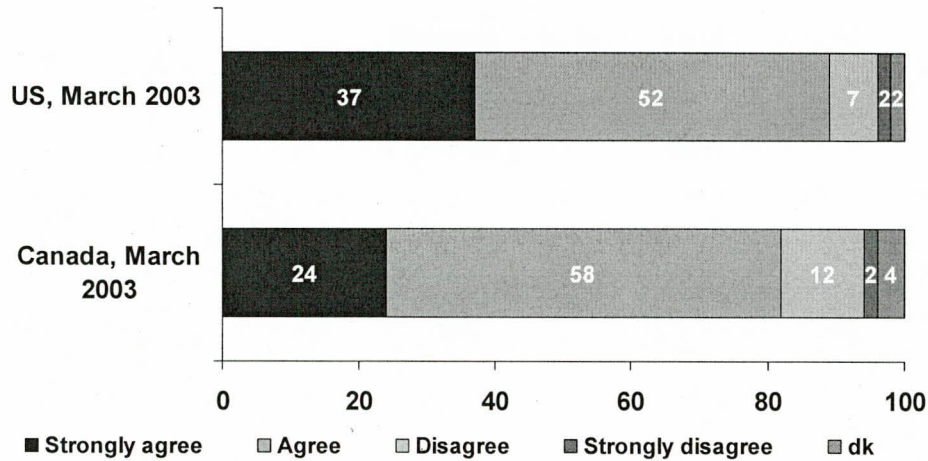


- **Many people in both the US and Canada see biotechnology as the next frontier of human endeavour**
 - And want to be part of that frontier, as “world leaders”
- **There is also an overriding sense of inevitability to these technologies**
 - Risks have to be managed
 - But it is not possible or beneficial to “put our heads in the sand”
- **Addressing long term risks is a priority in both countries**

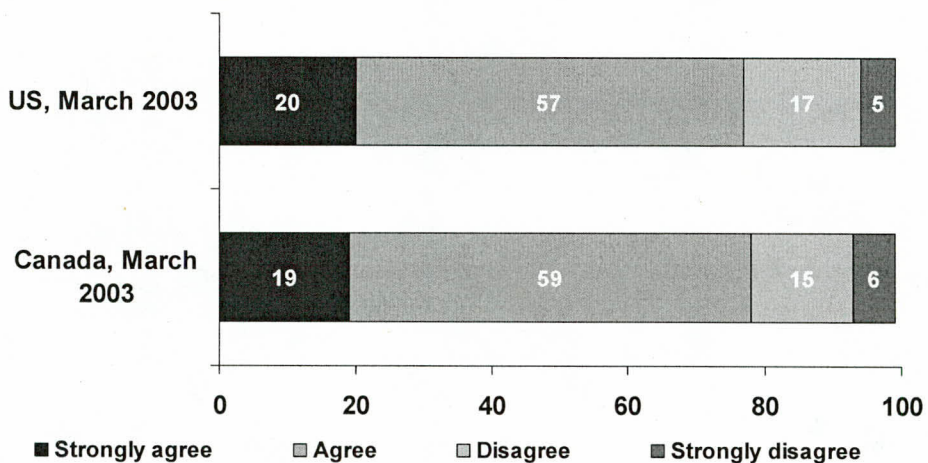
Biotechnology research represents the next frontier of human endeavour, a frontier that will lead to significant quality of life benefits for all Canadians/Americans



Canada/The US SHOULD BE among the world's leaders in the field of biotechnology research

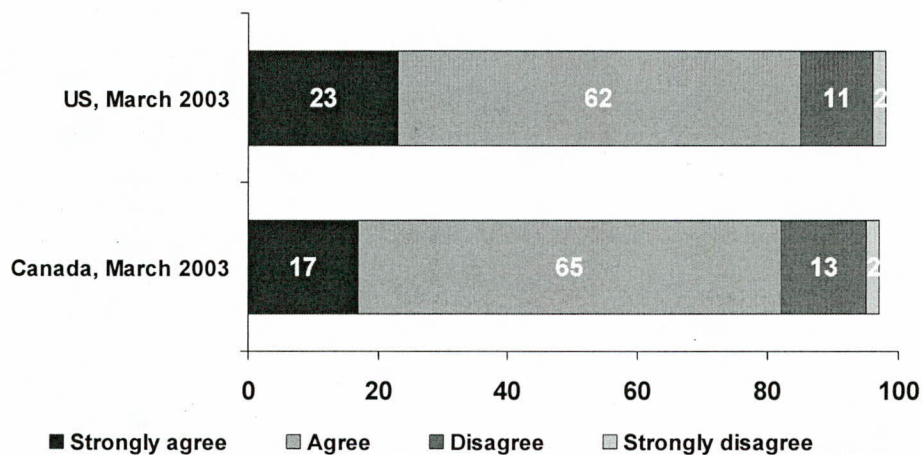


If I knew that ongoing long term safety research was going to be conducted on biotechnology products after they were approved for sale in Canada/the US, it would make me feel comfortable enough to accept these products

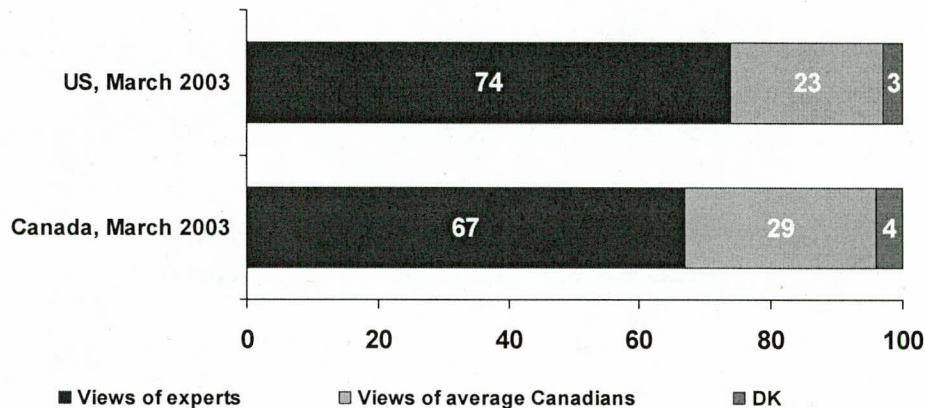


- **As in Canada, scientific evidence, and informed choice represent the fundamental elements of the preferred decision making regime in the US**
 - Experts to ensure safety, and citizens to make decisions in the marketplace
- **In fact, the belief in science and experts is even stronger in the US than it is in Canada**

If the best available evidence says a particular use of biotechnology is safe, it should be allowed.



Which of the following views is closest to your own:
 Decisions about biotechnology should be based mainly on the views of experts
 and scientists OR Decisions should be based primarily on the views of average
 Canadians/Americans.

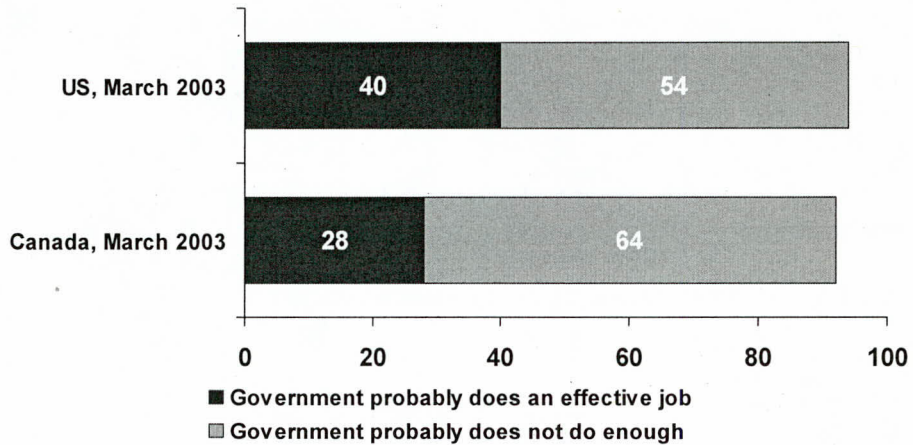


23

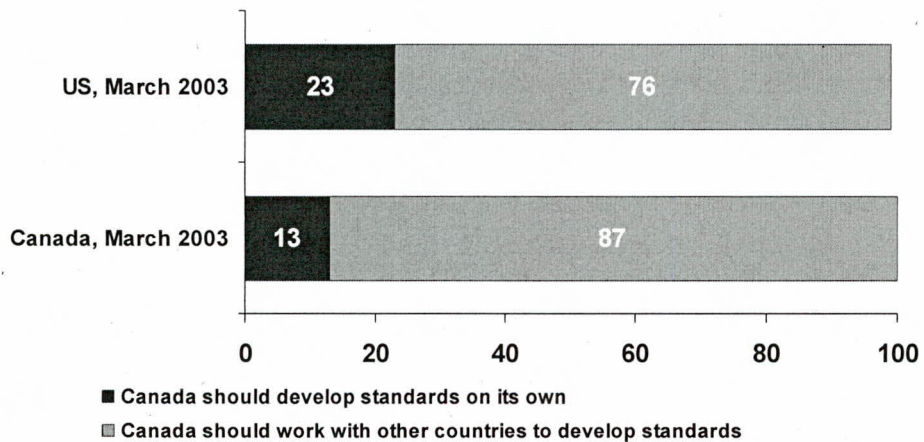
- **One of the more notable gaps in attitudes regards faith in the two regulatory regimes**
 - Americans express more faith in their regulatory systems than Canadians do in ours
 - This likely has an influence on attitudes toward risk and benefit of the technology as a whole, as well as applications
 - Reinforces the importance of a solid and well regarded stewardship regime to support for the technology
- **Attitudes tend to converge on the issue of international cooperation**
 - Broadly held belief in both countries that international standards, cooperation essential in this area

24

Which of the following two statements most closely reflects your view: The government of Canada/US probably an effective job of studying and monitoring the impact of biotechnology products OR The government of Canada/US probably does not do enough to study and monitor the impact of biotechnology products

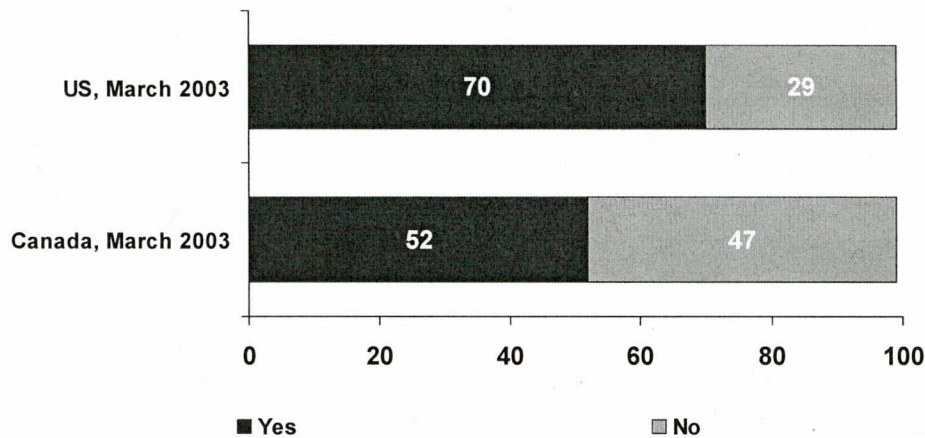


In terms of managing the issues associated with biotechnology, do you think it is better for Canada/the US to develop its own standards and regulations or do you think it is better for Canada/the US to work with other nations to develop standards and regulations?

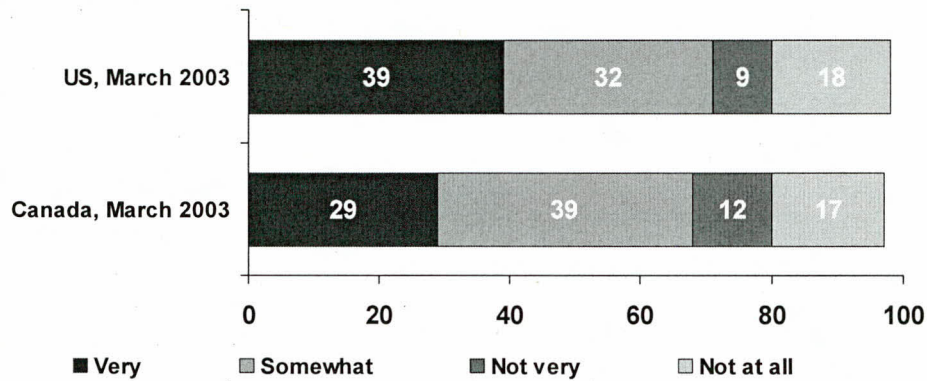


- **Awareness of stem cell research remarkably high**
 - Especially in the US, where the profile of the issue has clearly had an impact on opinion
- **Americans more supportive of this research than Canadians**
 - Even with a tendentious description of the issue that makes reference to fertility clinics, embryos
- **As in Canada, the chief reason is the promise of unparalleled health benefits**
 - A remarkably high number of people believe that this research will benefit them personally
- **Like Canadians, Americans are evenly split on the Bush decision**

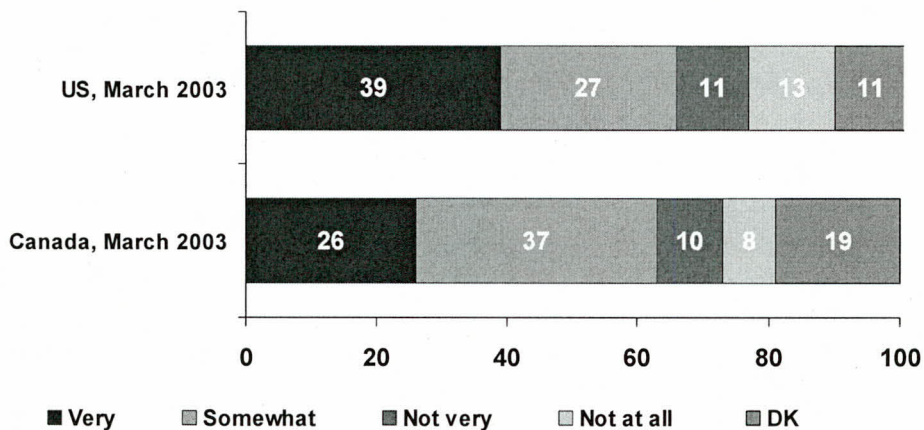
Over the last three months, have you heard about any stories or issues involving STEM CELL RESEARCH?



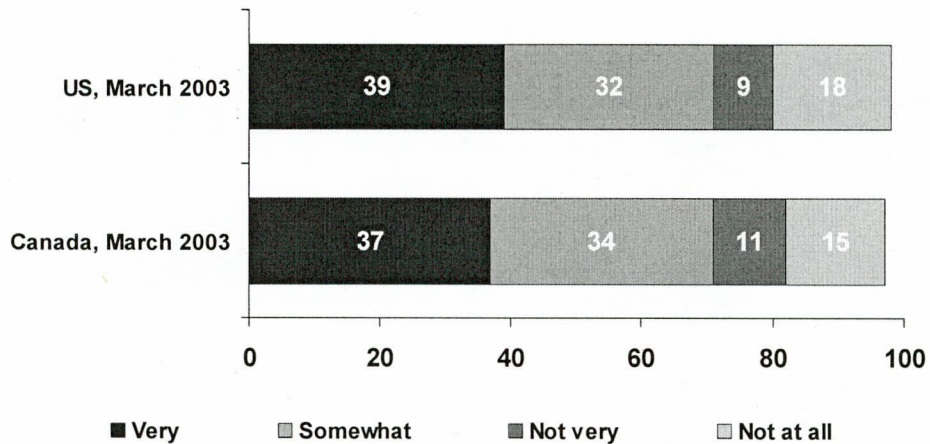
Stem cell research involves the use of certain human cells to study diseases and their cures. Unlike other types of human cells, stem cells have the unique ability to reproduce any type of cell in the human body. Many scientists say that research in this field will likely produce the most important healthcare breakthroughs of at least the next decade. However, to conduct this research, scientists have to get stem cells. They have been getting them from embryos that are less than 4 weeks old that have been developed and frozen in fertility clinics, which are going to be discarded because the parents do not need them. How acceptable is it that this type of research be allowed in Canada/the US?



From what you know or have heard, how beneficial do you think stem cell research will be to your health?

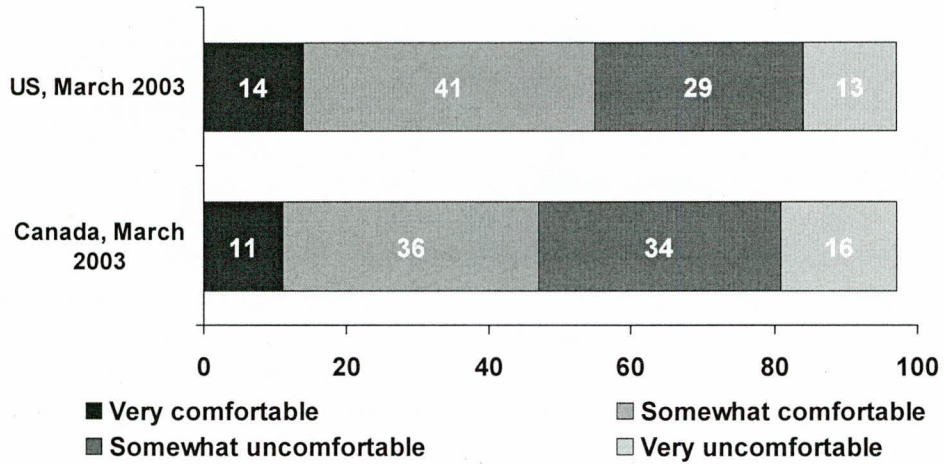


How acceptable is it that the government of Canada/US be involved in supporting this type of research?

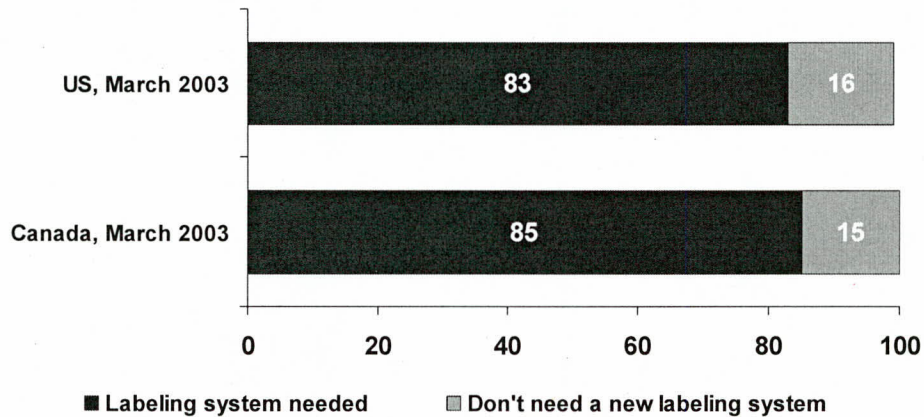


- **Support for GM food greater in the US than in Canada**
 - But four in ten remain uncomfortable with the technology
- **Support for labeling very consistent across the two countries, with wide majority support**
 - And similarly wide majority support for a mandatory system
 - 79% in Canada, 76% in U.S.

In general, would you say you personally are very comfortable, somewhat comfortable, somewhat uncomfortable or very uncomfortable with the idea of buying foods that contain GM ingredients?

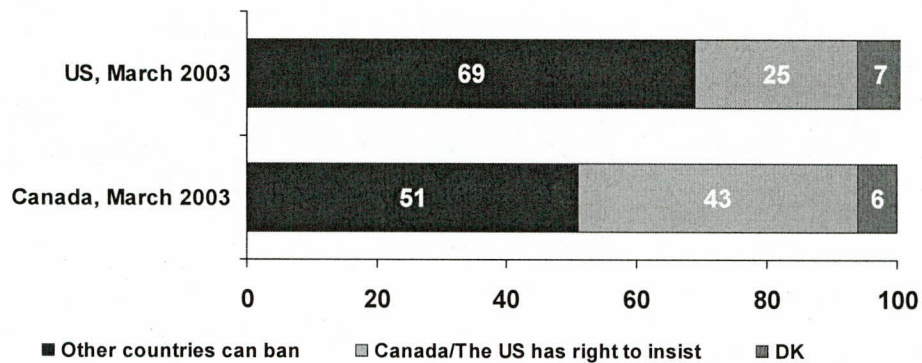


Some people say that Canada should introduce a new labeling system for food products that contain genetically modified ingredients in Canada, because GM food is not like other food, and people want to be more informed about it. Other people say that GM food is just like other food, and food companies have tested it, so we do not need to introduce a new GM good labeling system. Which of these views is closest to your own?

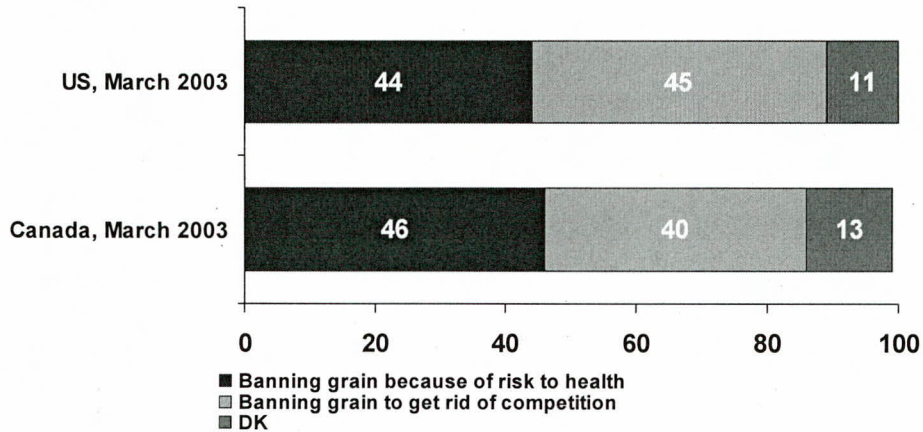


- **Many recognize the importance of GM food to farmers**
 - Two thirds believe GM food somewhat or very important to farmers' ability to compete
 - And half believe that international bans are based on support of domestic economic interests
- **But the data suggests that these considerations do not trump national sovereignty, in either Canada or the US**
 - In the US, almost a 3:1 majority feel that countries have the right to impose such bans
- **Focus group findings indicate that the Canadian government has a right to pursue the issue under international trade rules**
 - Doubt rules would or should force undesired imports

If the best available scientific evidence indicates that genetically modified grain grown by Canadian/American farmers is safe, should other countries have the right to ban sales of that grain or should Canada/America have the right to insist (through international bodies) that its grain be sold?

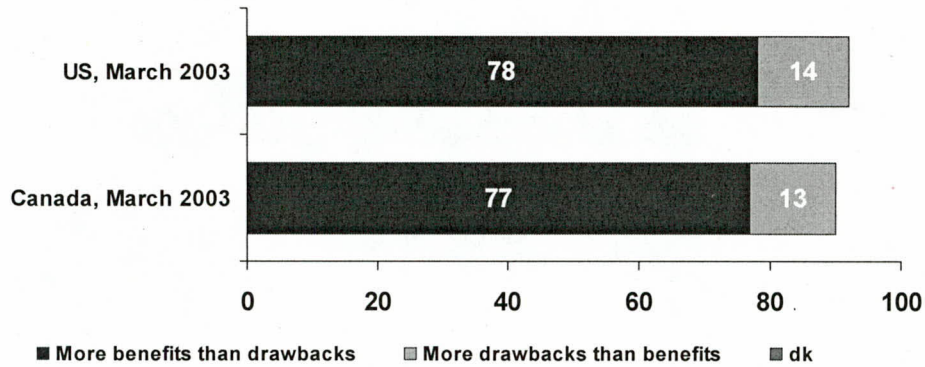


Some people say that countries trying to ban genetically modified grain from countries like Canada are doing so because they think there is a real risk to health. Other people say they are doing that in order to get rid of competition to their own grain. Which of these views is closest to your own?

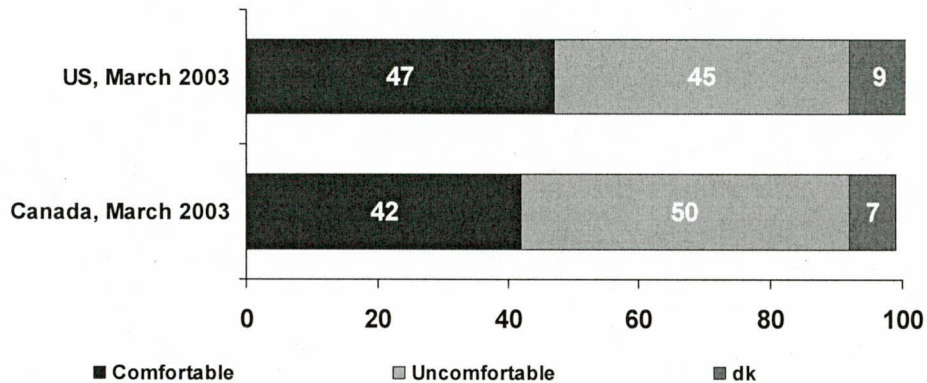


- **5:1 majorities in both Canada and the US say there are more benefits than drawbacks in the areas of DNA mapping**
 - No marked difference between the two countries on this issue
- **But in both countries, half uncomfortable about patenting in the area of biotechnology**
 - On both equity and ethical grounds

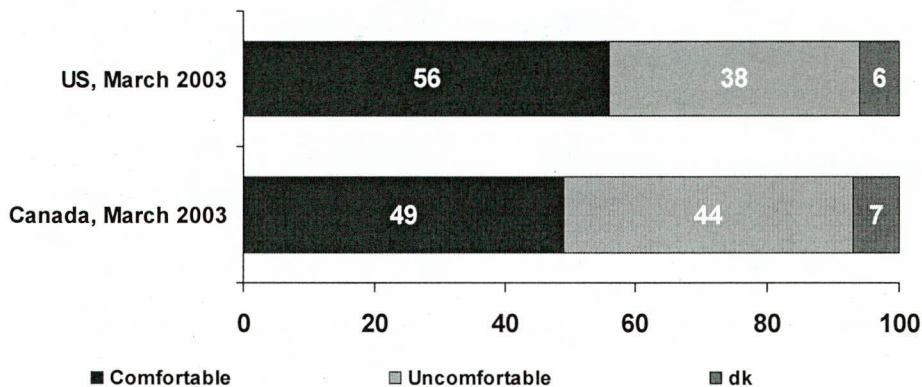
From what you know, would you say that identifying or "mapping" human DNA ultimately presents more drawbacks than benefits to humans, or more benefits than drawbacks?



Some people feel that the idea of patent protection is necessary in the field of biotechnology because we need to encourage inventions in this area for all the benefits they can bring. Others are uncomfortable with the idea of providing patent protection in the area of biotechnology, because there is something wrong with the idea of patenting parts of a life form such as an animal or plant. Which is closest to your view?



Some people feel that the idea of patent protection is necessary in the field of biotechnology because we need to encourage inventions in this area for all the benefits they can bring. Others are uncomfortable with the idea of providing patent protection in the area of biotechnology, because the benefits of new inventions might only be available to those who can afford to pay more. Which is closest to your view?



- **Across the board, Americans exhibit more faith in biotechnology than Canadians**
 - Even in controversial areas like stem cell research, animal cloning
- **The core values at play don't differ all that much between the two countries**
 - Risk, science, perceptions of stewardship efficacy are the drivers
- **The data as a whole suggests that Americans have a deeper faith in progress, and in science**
 - A faith that many, but not all Canadians share
 - Most Canadians can be described as cautiously supportive, whereas most Americans would be better described as confidently supportive

APPENDIX 2

DESCRIPTION OF HEALTH WARNING MESSAGES



WARNING
CIGARETTES HURT BABIES

Tobacco use during pregnancy reduces the growth of babies during pregnancy. These smaller babies may not catch up in growth after birth and the risks of infant illness, disability and death are increased.

Health Canada



AVERTISSEMENT
LA CIGARETTE NUIT AU BÉBÉ

L'usage du tabac nuit à la croissance du bébé pendant la grossesse. Plus petit à la naissance, le bébé risque de ne pouvoir rattraper ce retard et les risques de maladies infantiles, d'incapacités et de décès sont plus grands.

Santé Canada


<p>Informative and explanatory</p>
<p>Synonyms, advanced language, long text, relationship to visual</p>



AVERTISSEMENT
LA CIGARETTE
CAUSE DES ACCIDENTS
CÉRÉBROVASCULAIRES

La fumée du tabac peut bloquer les artères du cerveau, empêcher le sang de circuler dans les vaisseaux sanguins et provoquer un accident cérébrovasculaire. Cela peut entraîner une incapacité et la mort.

Smoking harms your health and can cause stroke.
 Santé Canada



WARNING
CIGARETTES
CAUSE STROKES

Tobacco smoke can cause the arteries in your brain to clog. This can block the blood vessels and cause a stroke. A stroke can cause disability and death.

Smoking harms your health.
 Health Canada

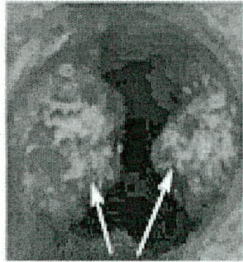
<p>Informative and argumentative</p>
<p>Synonyms, organization</p>



Informative
Synonyms



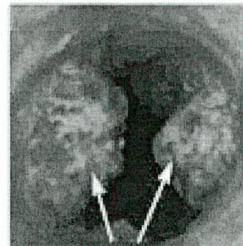
Affirmative



AVERTISSEMENT
LA CIGARETTE CAUSE
LE CANCER DU POUMON

85% des cancers du poumon sont
causés par le tabagisme. 80% de
ceux qui sont atteints vont mourir
en moins de 3 années.

Santé Canada



WARNING
CIGARETTES CAUSE
LUNG CANCER

85% of lung cancers are caused by
smoking. 80% of lung cancer victims
die within 3 years.

Health Canada

Informative

**Synonyms,
advanced
language, visual
clarity**