POLLARA AND EARNSCLIFFE

PUBLIC OPINION RESEARCH INTO BIOTECHNOLOGY ISSUES THIRD WAVE

EXECUTIVE SUMMARY

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

December 2000

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Presented to the Biotechnology Assistant Deputy Minister Coordinating Committee, Government of Canada, by Pollara Research and Earnscliffe Research and Communications.

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

Introduction

Earnscliffe Research and Communications is pleased to present this report on a public opinion research program conducted in the fall of 2000 for the Assistant Deputy Minister Coordinating Committee (BACC), Health Canada, Environment Canada and the Canadian Food Inspection Agency. This was the third wave of a series begun in the fall of 1999. This wave was comprised of a variety of separate instruments:

- two telephone surveys, one primarily an instrument to track opinion on biotechnology, one to focus on regulatory and science issues;
- two sets of focus groups designed to support the surveys; and
- a secondary analysis of other public domain public opinion research published in the year between fall 1999 and fall 2000.

The research was split into two discrete surveys to ensure that questionnaires were of a manageable length and that discrete sections were rich enough to produce robust findings. To ensure comparability, the two instruments began in exactly the same way while some questions were repeated in both to see if attitudes remained consistent. To allow for easier synthesis and consumption, this report presents the findings of all the various instruments.

The research was designed to accomplish two major objectives:

- to track sentiment on a range of biotechnology issues, using a baseline of data developed in previous waves of research; and
- to assess public opinion in discrete areas of concentration in aid of developing policy and communications strategies.

The research probed a number of areas of investigation in order to develop a comprehensive analysis of current opinion on biotechnology. The areas included:

- overall awareness and familiarity;
- perceived risks, benefits and drawbacks;
- assessments of government performance in biotechnology, preferred roles for government and future priorities;
- knowledge of and attitudes towards regulatory and science issues;
- the acceptability of various products and processes;
- the acceptability of patenting various products and processes;

- attitudes on high-profile and emerging issues like genetically modified foods and genetic privacy;
- public demand for information and consultation; and
- the testing of communications issues like key messaging, intervenor credibility and appropriate spokesperson models.

The telephone work began on September 15, 2000 for both surveys, ending on October 1 for the science/regulatory instrument and October 10, 2000 for the tracking survey. The tracking survey, commissioned by the BACC, reports on the views of a random sample of 1512 Canadians and carries a margin of error for the national sample of +/- 2.6%, nineteen times out of twenty. The survey measuring regulatory and scientific issues, commissioned by Health Canada, Environment Canada, the Canadian Food Inspection Agency and the BACC, reached a random sample of 1202 Canadians and carries a margin of error of +/- 2.9%. Margins of error for sub-samples would be larger. Precise margins of error can be provided for the variety of aggregated sub-samples.

Ten nights of focus groups (twenty groups in all) were conducted in two waves because of a suspension of public opinion research during the fall federal election period. The first four nights were held in Montreal, Toronto, Vancouver and Halifax between October 15, 2000 and October 24, 2000. The second wave of groups was conducted in St. John's, Quebec, Toronto, Brandon, Calgary, and Victoria between December 10 and December 20, 2000.

The research followed a set agenda for discussion and was designed to probe in more detail opinion underlying the results of the telephone surveys. Each night comprised a group of approximately ten participants drawn from the general population and a group of similar size of *Involved Canadians*, our proprietary population segmentation of Canadians who are significantly more interested and involved in public policy issues.

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Executive Summary

Awareness, Familiarity and Interest Levels

Biotechnology is no longer an obscure subject for most Canadians. Increasing numbers report hearing and talking about biotechnology though there still are very low levels of familiarity, interest or intellectual engagement in the issue. Most find the area too complex and technical to follow closely. In addition, though most express concern about potential risk, they are both resigned to the inevitability of risk and confident that somewhere, someone is in charge of trying to mitigate that risk. In a world replete with threats and risks, biotech-related risks seem to many to be less urgent and commanding of immediate attention. In general, Canadians seem to have assumed a casually watchful and mostly neutral stance.

Canadians have noticed increasing volumes of media coverage and that has broadened awareness levels – Involved Canadian respondents in most groups can cite specific articles and news stories that they have recently read or viewed on this issue. However, most people have divorced their personal assessments of biotechnology from the perceived media analysis.

Top-of-Mind Disposition – Support, Opposition and Semantics

A significant majority of Canadians continues to remain neutral to positive about biotechnology. A majority expresses direct support but does so with little intensity. There is a bit of "polarization" of attitudes emerging at the extremes where a small, entrenched minority remains strongly negative and where there has been some growth in the number of respondents who hold strongly favourable views. On the whole, however, there are higher levels of uncertainty and mixed feelings towards biotechnology in the fall of 2000. A general summary would say that over the past year, views of the majority in the middle have become more moderate and more equivocal rather moving to outright support or opposition.

Most people associate biotechnology with health and medical benefits, or with GM food. Some also associate biotechnology with the stock market, and its potential as a growth industry. There remains virtually no awareness of forestry applications or environmental applications like bio-remediation.

As Canadians become more aware of biotechnology, they are less willing to make blanket assessments (either positive or negative.) Views become more nuanced, and often come with qualifications**.** However, higher levels of awareness do not necessarily correlate with higher levels of concern or negativity toward biotechnology. In discussion, it frequently becomes evident that most people are torn in their views toward biotechnology.

Different language evokes profoundly different attitudes. *Genetic modification* has an almost universally negative connotation. It tends to be viewed fairly narrowly, linked most directly to ideas of eugenics and the manipulation of human genes. In contrast, *biotechnology* is a term that is broader, more inclusive of a range of applications, and generally connotes positive attributes.

Biotechnology Applications

Canadians continue to resist offering systemic views on biotechnology applications. They evaluate each application on its merits, bringing a core analytical framework to bear on a case-by-case basis. That framework involves an implicit risk/benefit calculation with the net conclusion depending on the assessment of the marginal personal benefit conveyed by the application. In simple terms, the larger and more personal the anticipated benefit, the more acceptable the risk and the higher the level of support.

As has been found in both previous waves, health and medical applications are the most positively received and the strongest positive drivers for biotechnology. Environmental applications come next. Conversely, 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 resistance. Human gene modification is the most difficult concept for most people and requires the largest set of expressed benefits to render it barely acceptable.

Environmental applications are virtually unknown. It is clear people are receptive to the benefits case for environmental applications, particularly bio-remediation, but there is some concern about the risks of environmental biotechnology agents ending up in the water supply or food chain. The results suggest the need for comprehensive research into ecosystem impacts.

Ultimately, when it comes to applications, the purpose/outcome is the key positive driver, while the process is the key negative driver.

Federal Government Performance, Priorities and Roles

There has been a weakening in the public assessment of the federal government's performance in biotechnology. Fewer people are willing to give the government excellent or good ratings this fall and those numbers have been eroding steadily over the past year. However, the erosion in public assessment is linked to a general malaise with government and the uncertainty over biotechnology itself. There is virtually no understanding or knowledge of the government's biotechnology policy or regulations. Although few can say whether the federal government is doing an effective job, the first instinct of most is that it might not be. In part that is due to concerns that government cutbacks have eroded the effectiveness of the regulatory system.

For the most part, top-of-mind impressions are that the federal government probably has some regulatory role in the field of biotechnology, but virtually no one has any detailed sense of what that role might be. However, there are much stronger views about what the government roles *should* be. Most believe that the government must regulate aggressively to ensure product safety and that it should find the appropriate balance among competing demands and interests so Canada can reap the benefits of biotechnology. As well, Canadians emphasize health and environmental stewardship with a strong focus as well on research into the long-term health and environmental impacts of biotechnology. These views are based on a prevailing view that these technologies are moving forward without any sense that the risks are being considered, let alone managed by the federal government. A fairly universal consensus has emerged that GM products are different than other products, and should be subject to higher standards and more comprehensive research and testing. Canadians also believe the federal government should make it a priority to collaborate with other countries on biotechnology, particularly in the areas of safety and regulation.

Economic support to industry was deemed important, but much less important than health and safety regulations and research.

Nevertheless, and in many cases despite all of the foregoing, Canadians very much want government to ensure they reap the benefits of what they see as truly important scientific breakthroughs, particularly in health and medicine.

In summary, there was continuing broad support for a two-track policy approach, including a strong regulatory and scientific oversight system in addition to fostering the development of the technology and the industry. Specifically, a majority of Canadians believes in both functions (stewardship and promotion) for government and that they can be carried out in an appropriate and balanced way.

Managing Risk

The evaluation of risk and the risk/benefit ratio is a fundamental issue in public attitudes towards biotechnology. It affects the acceptability of all biotechnology applications. Underlying the demand for an increased emphasis on stewardship is the uncertainty people carry about biotechnology and its long-term risk.

Because of its importance, each research wave has probed the risk issue in a number of different ways to ensure the phenomenon is thoroughly understood. In general, the results have been quite consistent.

- The more significant the benefit (health/medicine being the most powerful), the more acceptable the risk.
- In virtually every formulation, there is a quite small percentage of people who *strongly* disagree (the best indicator of settled negative opinion) with proceeding to reap the benefits despite the risks.

Hard-line views on eliminating risk soften substantially when people have to trade off benefits and risks or are confronted with the potential loss of benefits. Most participants understand that the development and use of biotechnology applications carry risk, and are prepared to accept those risks in cases where the potential benefit merits taking a risk. They want biotechnology activity to proceed as long as government seems to be managing risk intelligently. Appropriate management of risk would appear to rest on putting into place strong regulation and long-term scientific inquiry.

In reality, most Canadians have resigned themselves to the fact that risk is pervasive in modern society and that managing risk is about as well as anyone can do. This acceptance of taking risk is more prevalent than found in previous waves of research. It is bound to a strong sense that progress cannot be achieved without calculated risks being taken.

The vast majority believe that science should be the primary guide to decision-making about biotechnology applications. Again, consistent with previous research, people do see biotechnology as having moral or ethical dimensions, but for the most part, health and environmental risks are the key drivers. Ultimately, if an application is deemed safe by the "best available" scientific research, most say that this is the best that we can expect.

Among the general public, the dominant view is that they themselves do not have the knowledge or ability to make effective decisions, and that experts (scientists, university researchers, government researchers and policy makers) are much better placed to make these kinds of decisions. Among Involved Canadians, there was a much stronger sense that individual Canadians should be involved in decisions. Where there was agreement among the two audiences was about the decision-making process – Canadians do not like the idea of decisions like this getting made "behind closed doors." Ultimately, for the majority of Involved Canadians, informed choice is the preferred option. That is, beyond safety, the government should make products available and allow individuals to make their own decisions about biotech products.

Regulation of Biotechnology

Canadians, by and large, are uncertain about Canada's biotechnology regulatory system but accept that the products it approves are safe.

It is clear they know very little about the way it works. A negligible proportion of Canadians claims strong familiarity with the regulatory system as a whole or with the way research is conducted into the safety of biotechnology products. The lack of familiarity drives down assessments of the federal government's regulatory performance and drives up demands for more regulation.

Nevertheless, despite the lack of knowledge and uncertainty, Canadians continue to presume things are working the way they should. Most express some level of confidence that federally approved products are safe. Those confidence levels also extend to the view that the Canadian regulatory system compares favourably with that of other countries.

Canadians feel confident in Health Canada's product safety approval processes. A majority also feel that food on grocery store shelves is safe. Virtually all focus group participants believed that the regulatory agencies, and scientists at Health

Canada in particular, are doing as well as can be expected given the current level of scientific knowledge of the risks, and the current level of resources dedicated to these purposes (which many feel is probably not adequate at this time).

The comfort level increases dramatically when the actual approval process is described. Three separate departmental approval processes were tested and all increased comfort levels substantially. When a brief overview of the regulatory approval processes for GM food and GM health products was provided to respondents, the majority were pleasantly surprised at the comprehensiveness of the actual regulatory approval processes, and were reassured by the information.

For those who expressed skepticism, a very consistent view emerged on what would improve their confidence: the integration of independent verification of research by scientists outside government (at universities, possibly from other countries), contracted by government to provide a secondary “check” on company research.

Most Canadians embrace international arrangements on biotech in the science and regulatory spheres and gain confidence once they know such arrangements are underway. Collaborative international arrangements convey a sense that the implied “pooled” resources are more capable of identifying risks. Canadians were willing to speed up approvals here to match quick approvals in the U.S. if that meant we could have access to products more quickly. However, as a matter of principle (and when the explicit benefit is removed from the question) most people say the approval process in other countries should have no bearing on the process or speed at which Canadian regulators work.

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Science and Credibility

To most Canadians, the acceptability and approval of biotechnology products and processes is largely a technical and scientific issue with relatively few significant moral or philosophical determinants. All three waves of research have produced the same results – for most, good science should be the main arbiter of regulatory approval. There are some important caveats:

- The proposed uses or outcomes have to be within a range of acceptability. Good science will not trump highly contentious applications that seem to 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 science.

In fact, the general willingness to move ahead in exploiting biotechnology increases substantially if people believe they have received scientific assurances of safety from credible sources.

There remains widespread distrust of a variety of institutions and potential spokespeople on all sides of the debate. There are few voices people would believe to be completely trustworthy in providing information about biotechnology.

The survey results suggest that scientists are highly credible voices on biotechnology – virtually all generate a reasonable level of credibility. Collaborative arrangements, international bodies and university-based science generate the most credibility.

Focus group discussions reveal another level of analysis. Most people rest their assessment of credibility on the degree to which the person or institution is perceived to be at arm's length and independent of controlling and/or funding influencers. The source of funding seems to be the critical test. As a result, many people say university scientists are much more credible than other scientists because it is assumed they are free from funding pressures and therefore, more "independent."

Similarly, government regulators maintain a relatively high degree of credibility because they have no financial stake in outcome and are presumed to be working in the public interest. Others that fall into that category are doctors and hospital researchers. Of note, participants felt that independent advisory boards (like the Canadian Biotechnology Advisory Committee) carry credibility as information sources on biotech. Most people were willing to accept the word of expert panels or advisory boards as long as they were clearly at arm's length from government and industry.

Lastly, credibility varies significantly among NGOs (non-governmental organizations) and interest groups. In general thesis, the less "political" and the less "self-interested," the higher the credibility.

Genetically Modified Food

The debate over the past year about genetically modified (GM) food has increased awareness and left more people personally uncomfortable about buying GM food. Consistent with previous waves of public opinion research, the GM food debate has not catalyzed opinion very deeply in most of the centres, although it continues to be of substantial concern in the lower mainland of British Columbia. The debate has not convinced most Canadians that GM foods are fundamentally risky or unsafe. The lack of a health incident or the production of convincing evidence to the contrary has left most people believing the food safety issue is more political than personally relevant. Only a small minority reject GM food under any condition or circumstance.

On a personal consumption level, however, there is a growing discomfort with GM food. About half of Canadians say they are uncomfortable buying GM foods and a significant number said they would stop purchasing for a while if they knew a food was GM. On the other hand, only a small percentage said they would never buy the food again. It is clear that opinions about GM foods remain in flux, partially because people tend to believe the food safety system is sound.

Most people advocate an "informed choice" approach to GM foods. As long as the science is sound, most people feel that the purchase of GM food should be up to each individual. Many accept voluntary labeling as a reasonable step. Others, primarily Involved Canadians, tend to lean toward mandatory labeling as a preferred solution.

The survey suggests that Canadians are ambivalent about GM food exports and do not believe that Canada has the right to insist that its products be accepted. Most people do not believe that impediments put in place by other countries are driven by trade considerations. Most people believe those countries have the right to, and actually do, make decisions based on their assessment of the potential risk.

There is little evidence that negative attitudes toward GM food inherently "spill over" and affect attitudes toward other types of GM applications. Most people conduct a case-by case assessment of each type of application, assessing them on their own individual merits. It should be noted, however, that among the core group of strong opposers of the technology, the same types of risk considerations are cited as reasons why other applications are opposed.

Patenting

A strong majority of Canadians sees more benefits than drawbacks to mapping the human genetic code. The results of this wave of research indicate higher levels of support for the idea of patenting genes than previous research has shown. Most people see more benefits than risks in allowing the patenting of genes and gene sequences. Very few of those who are troubled by patenting issues have moral or religious reservations – the objections are raised on the grounds of access and affordability. They tend to believe patenting drives up pricing and reduces accessibility. When it comes to health and medical products (the primary products people associate with genomic research and patenting), most tend to believe the overriding principle should be equality of access without financial obstacle.

When it came to the Harvard oncomouse (genetically modified for use in cancer research) and discussions of the patenting of higher life forms (e.g. plants and animals per se), the discomfort levels rose. Half of the survey respondents said they were not very or not at all comfortable with the Federal Court of Appeal decision granting the patent on the mouse.[1]

[1] The government sought leave to appeal the decision on October 2, 2000. The leave application is currently before the Supreme Court of Canada, with a decision expected in spring 2001.

For some, the concept of patenting a whole animal brings the issue into clearer perspective and offends at an emotional level. For others (significantly more), the issue puts the pricing of cancer cures squarely on the table.

The result of these underlying opinions is that most people believed the government was right to appeal the lower court ruling and that it was appropriate to begin consultations on the issue in order to have Parliament resolve it.

Genetic Privacy

The research yielded firm views despite the fact that most people had not actively considered the issue before. In general, there is overwhelming support for strong safeguards on genetic privacy, with the intended use of the information being the key determinant of any willingness to allow information to be sought and collected.

Most people say genetic information is different from other health information. Canadians fear that genetic information conveys too much power to people who obtain it and there is a fair consensus that government has a key role to play in ensuring genetic privacy. If these focus groups are any indication, genetic privacy may be one of the catalysts that drive public engagement on biotechnology.

There is very little patience for the proposition that employers or insurance companies have a right to genetic information to determine suitability for employment or insurability. That is seen as an unacceptable intrusion that exacerbates unbalanced power relationships.

When it comes to insurance, the vast majority of people believe that insurance pools and shares risk and provides a way to protect poor-risk individuals. As to the suggestion that non-disclosure would create a “moral hazard,” most people grudgingly agreed that companies should be able to sue for fraud but *only* if the person had the actual disease/disorder when he/she applied for coverage not just the genetic predisposition.

More altruistic uses of genetic information are generally acceptable as long as there are commonsense safeguards in place. Most people believe there are substantial benefits to be gained from population genetic studies and that such studies are impossible without access to scientific data.

Communications Issues

Messaging

Positive messaging around health and the environment is much stronger than positive messaging around economic benefits, food safety or regulatory strength. However, views have polarized to the extent that those who oppose biotechnology or are deeply uncertain will not believe or accept the positive messaging.

On the negative side, it is the argumentation about upsetting the ecosystem balance that is resonant, especially the ability of certain pests to grow stronger (or be eliminated altogether) as a result of pest resistance modified into trees and crops.

The negative messaging tested (current argumentation used by anti-biotechnology groups) is more powerful than previous negative arguments, which tended to be thin on specifics. However, the positive messaging surrounding health and environmental benefits is stronger. This kind of messaging taps into people's underlying sense that biotechnology may provide society with incredible medical breakthroughs.

On GM food applications, there remains virtually no way to create positive messaging around them. There is only the prospect of trying to convince people that the safety system they have passed is stringent, and that ongoing research will continue to be done on these products.

Involvement

Most Canadians would not want to participate in decision making or consultation sessions about biotechnology but they want to know they are being conducted and that people of sufficient expertise are attending. Generally, they believe more expert people would participate and that was all to the good. Most members of the general public are content to allow experts to sort through the issues as long as they can find out what happened and have access to information if they require it.

However, as indicated earlier, individual choice is still a powerful driver in the marketplace itself. That means most people do not want any superintending body or organization to make decisions on product availability based on social or ethical grounds.

Information

There is further confirmation in this wave that most people want neutral, accessible information on biotechnology to be available. The main factor contributing to consumer confidence is transparency about safety and the regulatory approval process. The fact that information is freely available seems sufficient to convince most that there is no hidden agenda; transparency seems to indicate that government is properly motivated and committed to informing citizens. However, as has been consistent, most people don't want the information sent to them (or "pushed") – they want to be able to access (or "pull") it when they feel the need.

As such, most people would not endorse a government advertising initiative on biotechnology or GM foods. They see this as an unnecessary expenditure. Most people would like to see a biotechnology web site and/or a registry where they could sign up for updated material to be sent or e-mailed. There is also a willingness to see information brochures placed in supermarkets.

Conclusion

At this time, there is a widely held sense that biotechnology advances are inextricably linked to societal progress, that its development is bound to modernity, and that its expansion in Canada and worldwide is inevitable. Even among those who tend to be opposed to these technologies, this sense is clearly evident, and presents itself as resigned acceptance. Among the vast majority, there is clear trepidation about some of the more invasive technologies (cloning, using animal genes in humans), but for the most part, there is hope that these advances will improve people's lives. The issue now is about managing the risks, not eliminating them, and this role of managing the risks is what Canadians hope government can help with, although at this juncture they are not sure that government is willing, or able, to do so.

Awareness is not driving concern; it is driving the growth of more complex, nuanced views toward the technology. This evolution evidences itself as case-by-case assessments of applications, and the inclusion of qualifications and caveats about how these products should be introduced. For most, the issue is not about whether the products will be available, but how it will be done to ensure risk is minimized.

Print copies of the full report in English are available from:

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