

Development of the Expert Panel Process in Canada, 1995 – 2005

by
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Author's Note:

The Council of Canadian Academies [CCA] provided funding in 2007 to assist in the preparation of this paper, including the compilation of the documentary record on which it is based, for which the author is most grateful. The contents of this report are solely the responsibility of the author.

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Table of Contents

Introduction and Earlier Stages.....	Page 3
Section I: From 1995 to 1999.....	Page 7
Section II: Years 2000 and 2001.....	Page 22
Section III: Final Stages (2002 – 2005).....	Page 33
Conclusions.....	Page 35

Introduction and Earlier Stages.

The events that led to the creation of the Council of Canadian Academies (CCA) began in 1995 and reached fruition ten years later. The series of specific steps leading to the founding of CCA began early in the year 2000 with the preparation of a document by the President of The Royal Society of Canada [RSC], entitled “Providing Independent Expert Advice to Government and the Public: A Memorandum on the Role of National Academies and a Proposal for Canada,” and submitted to the Hon. Gilbert Normand, Secretary of State (Science, Research and Development), on 17 March 2000.

The drafting of this memo in March 2000 and its submission to the Government of Canada was in one sense a direct outcome of RSC’s actual experience with managing a series of expert panel projects in the late 1990s; this is explored in Section I below. However, the more general reason for this initiative stemmed from the Society’s own awareness that the entire group of senior national academies around the world have always recognized RSC as a full member of that group. And it followed from this fact that many RSC fellows had hoped, over the years, that one day the Society would be in a position to discharge, in the Canadian context, what had been long recognized as the chief public-service function of national academies: The preparation of definitive reports on complex technical issues commissioned by national governments.¹

¹ Some research would be needed in order to assemble the evidence about the circumstances under which many national academies, at least in the newly-industrializing nations, began to be assigned a public-service role by national governments. Some key events occurred during the second half of the nineteenth century: (1) the first budgetary appropriation by the Parliament of the U.K. for the benefit of The Royal Society (1849) – which has been renewed annually ever since; (2) the passage of legislation by the U. S. Congress to create the National Academy of Sciences (March 1863), with a mission to “investigate, examine, experiment, and report upon any subject of science or art” whenever called upon to do so by any department of the government: http://www.nasonline.org/site/PageServer?pagename=ABOUT_main_page .

In most cases, among the eighty or so countries around the world where one or more national academies are established, there is some form of official relation between the senior national academy and the national government.² In the nations representing, for reasons of history and geography, Canada's most relevant peer group—the United States, the United Kingdom, and France—that relationship has been especially close, at least since the nineteenth century. Among smaller European nations, such as Austria, Sweden, and The Netherlands, the senior national academy has been assigned very important responsibilities in the management of research programs. Among the economically-advanced nations of the world, Canada has always been anomalous in this regard.³

² Peter Collins (The Royal Society, London), "The Role of Academies in Advising National Governments," September 1998. There is only one major nation in the world which does not have a national academy, namely, Germany; there is a process under way that is seeking to rectify this situation: "A German Academy," *Nature*, vol. 443 (28 September 2006), 371-2.

³ From the founding of RSC in 1882, almost 125 years elapsed before the creation of CCA; during all this time, national academies around the world were being assigned various public-service roles by their national governments. In some cases, and until quite recently, the Government of Canada has bestowed similar mandates on private organizations that are entirely unconnected to its national academies—a practice which, I suspect, has no parallel anywhere else in the economically-developed world.

It is reasonable to assume that, once a certain number of years had elapsed after 1882, a type of "Catch-22" situation emerged: The Society, having only its own meager resources to rely upon, could do little more than hold an annual meeting and issue its *Transactions* once a year; when the issue was raised elsewhere about what functions the Society could perform, its lack of evident activity was cited as proof that no other mandate could or should be bestowed upon it. (The publication of an annual volume of *Transactions* is a traditional function of national academies; beginning in 1883, Parliament did grant RSC an annual stipend of \$5,000 for the publication of the annual volume. I don't know what happened to the parliamentary grant. The Society stopped publishing a hard copy in 2001, and thereafter *Transactions* has appeared in electronic format only on the RSC website.)

One can see this vicious circle at work in the following account, dating from 1969. "More than 100 Canadian scientists and engineers met in Ottawa in late July to discuss the feasibility of

Nevertheless, at least in the period after 1980, The Royal Society of Canada became involved, on an occasional basis, in the production of various expert reports that had been commissioned by the Government of Canada.⁴ (To be sure, initially RSC involvement arose only as a result of the personal initiative of Ken Hare, who had been contracted by the government to write a series of reports on acid rain and lead pollution.) By the end of that decade, however, the Society itself had been asked by Health and Welfare Canada to undertake two important projects on highly-charged medical and social issues, resulting in the production of independent reports: *AIDS: A Perspective for Canadians* (1988) and *Tobacco, Nicotine and Addiction* (1989). Both reports were extremely well-received. In addition, in 1988 the federal government gave the Society a mandate to oversee the operations, and manage the federal budgetary contribution, for the Canadian Global Change Program, which the Society had founded on its own initiative in 1985. This assignment too was successfully managed, lasting until government ended its financial commitment in 1999.

setting up a national organization to speak for science to the government and to the public.... [Some participants] felt strongly that there was a need for two different types of organizations – an elite group like the National Academy of Sciences in the United States and a second, more broadly based group like the American Association for the Advancement of Science. The elite group would speak to government for science at the highest level while the general group would concurrently speak to government and be concerned with public education.

“The Royal Society of Canada could conceivably serve as the elite group, giving government detailed advice on science priorities and science-oriented social issues either by request or on its own initiative. The Royal Society was badly mauled at the conference as an ineffective spokesman for science in the past.... At one point, the RSC was called irrelevant, and at another, one delegate said in private conversation: “They only got what they deserved. The only people they talk to are themselves and God – in that order.” *Science Forum 11* (October 1969), pp. 19-20. (I have not been able to find out anything about this publication.)

⁴ This paragraph is based on Michael Dence (RSC), “Providing Independent Expert Advice: Summary of studies facilitated or directed by The Royal Society of Canada (1980–1995),” January 2000.

Also during this time, the Society was a partner in an important tri-national, North American expert assessment (released in 1985) of acid deposition, in association with the U. S. National Academies and Mexico's *Academia de la Investigacion Cientifica*.⁵ And, beginning in the 1990s, some of the most active academies in the world initiated the practice of preparing joint statements on key international issues, such as climate change and sustainability; RSC has always been invited to participate in those endeavours, as has the Canadian Academy of Engineering [CAE]. Finally, shortly after the founding of CAE in 1987, the two academies began to collaborate on matters of common interest, such as nuclear energy.

Thus by the end of the 1980s, there were some signs that the Government of Canada was beginning to assign RSC the kind of national role that was common in other countries (U. S. and Western Europe). Unfortunately, things fell apart again shortly thereafter, as a result of an ill-advised scheme under which RSC was awarded a federal contract for \$1-million per year for each of five years (1988-93) to deliver a number of "services." By the time this episode had played itself out, much of the goodwill earned in the preceding decade had evaporated.⁶

⁵ *Acid Deposition: Effects of Geochemical Cycling and Biological Availability of Trace Elements* (National Academy Press, 1985).

⁶ This is not the place to re-examine that sad episode; undoubtedly, in the end there was enough blame to coat both contracting parties liberally. Clearly the concept of having a "national science academy" in Canada, and the question about the RSC's so-called "suitability" for this role, was a matter for discussion within the federal bureaucracy during the years 1992-94. However, it is likely that these discussions never went far beyond the purview of Industry Canada, which was the contracting party for the 5-year services agreement with RSC. There are apparently references to the judgment that RSC was deemed to be an "unsuitable vehicle for forming a national science academy" in the periodical *Research Money* (issues of 03.31.93,

Section I: From 1995 to 1999.

The idea of resurrecting the expert panel process in Canada on the basis of a set of formal procedures, appropriate to the mission of national academies, arose in the context of activities undertaken at Queen's University's School of Policy Studies by the Eco-Research Chair Program in Environmental Policy in the years 1994-98 (I was the chairholder). Major environmental issues are, to put it mildly, exceptionally contentious at the public policy level; one thinks immediately of climate change, but there are many others, from toxic chemicals and nuclear waste to wildlife habitat and species extinction. Since the 1970s, and to an increasing degree over time, it had become customary to design elaborate scientific studies, as well as risk assessments, as key inputs for the policy formation and decision-making processes.

As these studies grew in importance, they themselves inevitably became immersed both in public controversies and bitter stakeholder conflicts.⁷ Charges about "flawed study designs" and "bias" are routinely thrown about, and not all of them are

04.27.94, and 09.14.94), but I have not seen those pieces, and I don't know whether CAE was ever mentioned during the bureaucracy's internal musings.

In any event, in 1992 Industry Canada commissioned a small group to advise it on "whether it should support the formation of a national academy in Canada" [sic!]. The group thought this was indeed a good idea, but it came up with such a bizarre concept of what was required, under the name of "The Canadian Academy," that it was fortunate, both for the government and the group itself, that their report vanished without a trace immediately thereafter—because it would have made Canada a laughing-stock around the world, once national academies abroad had become aware of it. See the brief comments in W. Leiss and J. Cairney, "Feasibility Study on Expert Panels" (Eco-Research Chair Program, unpublished, 1995), Appendix.

⁷ Many of these have been the subject of case-study analysis. See the examples of pesticides in Leiss and Chociolko (1994), *Risk and Responsibility*, chs. 6, 8; dioxins: Leiss and Powell (2004), *Mad Cows and Mother's Milk*, ch. 3; MMT: Leiss (2001), *In the Chamber of Risks*, ch. 4 (all published by McGill-Queen's University Press).

without some justification. Having to redo an elaborate set of studies is extremely costly, both in time and monetary terms. Thus there has been an increasing degree of interest, especially in government and industry circles, in pursuing a variety of strategies that are intended to heighten the credibility of scientific assessments, especially where significant risks and risk-benefit trade-offs are involved. (Public recognition of the independence and freedom from conflict of interest, with respect to the authors of scientific assessments, are the single most important factors in the perceived credibility of the results.⁸) To some extent, this development in the sphere of environmental risk assessment followed a trend seen earlier with respect to health risk assessments. More recently, it has been extended to include “precautionary” assessments of emerging technologies.

With the encouragement of senior federal government and industry officials who were associated with the Queen’s eco-research program, a feasibility study was undertaken and completed in October 1995.⁹ The opening sentence of the report is as follows: “There is a perceived need for a credible and consistent expert panel process in Canada.” Two specific requirements were said to be essential in implementing such a process: (1) a formal set of procedures for carrying out expert assessments, and (2) an appropriate, independent institution that could assume the responsibility for insuring that those procedures were adhered to.

⁸ This may be inferred from the fact that academic experts consistently rank highest in public opinion polls, in terms of believability, with respect to statements on scientific issues, including health and environmental concerns. See Leiss, *In the Chamber of Risks*, p. 175.

⁹ W. Leiss and J. Cairney, “Feasibility Study on Expert Panels: Credibility in Risk-Based Decision Making” (October 1995), Environmental Policy Unit, School of Policy Studies, Queen’s University (unpublished).

The reason for the emphasis on these two particular requirements was as follows. Modern technologies have a high degree of technical complexity and a correspondingly complex set of implications and impacts on human health and the natural environment (including other living entities). These technologies are in turn, of course, the result of sophisticated basic research programs in the natural sciences, engineering, and medical sciences. Equally sophisticated and advanced scientific analysis is required in Order (a) to discover what types of impacts may be present, (b) to ascertain whether certain observed effects may be reasonably attributed to specific causes, and, most importantly, (c) to determine whether there is good evidence of *adverse* effects, i.e., impacts that are deleterious to living organisms or the supportive biosphere that sustains them. Where deleterious impacts are found, they may be used as a reason to regulate a substance or process, or sometimes to ban its use entirely. (A good early example is the ban on DDT in North America, put into place in the period 1969-72.) Either of those responses can, and almost certainly will, elicit a strong reaction from industries that are using those substances or processes and from other stakeholders, such as labour, who have a direct interest in the matter.

The three types of required scientific analysis described above are matters of great complexity where, quite often, substantial uncertainties cannot be resolved on the basis of existing knowledge. Nevertheless, a policy decision is needed, or, in its absence, a default judgment remains in effect. Thus the scientific record itself is pulled into an inherently contentious situation. There will be references to other scientific studies, undertaken by qualified experts, which appear to point to different kinds of conclusions.

As the technological complexity supporting a modern economy continues to grow, an enormous body of such studies will accumulate. Loud, strong, and diametrically-opposed claims will be made about what the “scientific evidence” is—and, inevitably, expensive lawyers will sometimes be called upon to advance those claims in a courtroom setting. There are many well-documented examples illustrating these types of controversies, e.g., in the cases of tobacco and ozone depletion.¹⁰ Climate change is the best example of a current controversy of this type.

Under these circumstances the need arises for a periodic “meta-level” review of the three-part scientific analysis described above.¹¹ However, where some controversy has already arisen, or may soon arise, the overriding need is for a special type of study, one that will successfully pass a high threshold of credibility and be widely regarded as a definitive statement for its time. Since there are so many published, peer-reviewed studies already in the public record, some special qualities are required in order for someone to be able to place a new evaluation into a special category or status. Quite literally, a study of this type can trigger a kind of automatic response from the major stakeholders, who will publicly affirm its definitive character and support the actions of regulatory authorities that are derived from the study.¹² To put the point in very

¹⁰ S. A. Glantz *et al.*, *The Cigarette Papers* (University of California Press, 1996); R. E. Benedick, *Ozone Diplomacy* (Harvard University Press, 1998); and W. Leiss, “The Interface of Science and Policy: The Cases of Ozone Depletion and Climate Change” (unpublished essay, 2005): http://www.leiss.ca/index.php?option=com_content&task=view&id=93&Itemid=48

¹¹ In some areas this type of meta-level investigation is now institutionalized – for example, in the field of epidemiology, where studies of cause-and-effect relations between therapeutic remedies and health outcomes can have huge financial implications for the pharmaceutical and medical industries.

¹² Only two examples of this type of study, from the many that could be cited, are listed here:

colloquial terms, what is wanted is a report that is, on its face, so clearly definitive and indeed unchallengeable (for its time), that the only reasonable response to it, from those who requested its production, is: “Yes.”

As suggested above, the credibility of a scientific report is largely a matter of the public’s perception of the complete independence of, and lack of external constraint on, the report’s authors. (For the same reasons, university-based experts are preferred as members of expert panels, but exceptions to this rule are often made for good reasons.) In other words, the two essential qualities that are presumed to be present, in order to justify a claim of high credibility for a scientific report, are:

- first, the quality of *disinterestedness*, or freedom from conflict of interest and lack of “balance” in the panel composition;
- second, *substantive independence of the authors from institutional oversight*.

The first of these is assured by having panelists chosen by an organization that is itself independent and is competent to apply the requisite criteria for panel selection. The second is assured by delegating full “ownership” of the product to its authors: A report by a national academy panel is *always* a report by the members of that panel, and not a report of the organization that called the panel to service.

From a purely practical standpoint, some organization must be assigned the tasks of (a) specifying in detail the conditions for “independence” and (b) certifying that those

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- (1) U.S., National Academy of Sciences, *Pesticides in the Diets of Infants and Children* (1993): <http://www.nap.edu/catalog/2126.html>;
 - (2) Royal Society of Canada, *Report of an Expert Panel on Potential Health Risks of Radio-frequency Fields from Wireless Telecommunications Devices* (1999; updated in 2001, 2004): http://www.rsc.ca//index.php?lang_id=1&page_id=120

conditions have been satisfied in a particular case. The October 1995 report, “Feasibility Study on Expert Panels,” discussed these requirements in some detail, but it left open the question of which Canadian organization might be called upon to carry out those tasks. To encourage further discussion, it presented a hypothetical case, wherein one body, The Royal Society of Canada, would act as the guarantor for the process itself, and others – such as all Canadian universities – might be “certified” by the Society to undertake the duties of delivering the reports, in response to requests (and payments) from study sponsors.

Upon being presented with a copy of the Feasibility Study, the then-president of RSC, the York University biologist Robert Haynes, reacted immediately and favourably. Only one month later, in November 1995, RSC had established a Committee on Expert Panels, with William Leiss as Chair, and charged the committee with producing a “manual of procedures” for expert panels. The manual was formally adopted one year later, and was accompanied by a shorter document entitled “Guide for Administrative Units.”¹³ The “Guide,” which was a kind of procedural abstract of the longer document, represented a continuation of the perspective outlined in the earlier “Feasibility Study”: It was intended to be used by other institutions, presumably universities, which would carry out expert panel projects after having received a “certification” from RSC and its Committee on Expert Panels. In effect, the underlying philosophy was that RSC would

¹³ William Leiss, “Expert Panels: Guide for Administrative Units” (October 1996), prepared by the Environmental Policy Unit, School of Policy Studies, Queen’s University, on behalf of The Royal Society of Canada; “Expert Panels: Manual of Procedures and Guidelines,” The Royal Society of Canada, Committee on Expert Panels (first issued in 1996, later revised 1998, 2004): http://www.rsc.ca/files/publications/expert_panels/expert_manual.pdf

operate as a kind of “official standards” body, so far as expert panel processes were concerned.¹⁴

The fuller “Manual of Procedures and Guidelines” had been prepared with the generous assistance of Myron Uman (now retired), then Assistant Executive Officer of the U. S. National Research Council [US-NRC], which describes itself as the “operating arm” of the three associated national academies there. The project to write the “Manual” had been launched on the assumption that the U. S. operation, producing at that time about one document each working day, and hundreds of full panel reports yearly, must have had a formal set of procedures in order to release so many completed reports in what was clearly a standard format.¹⁵ This facile assumption turned out not to be true. In fact, the “glue” that holds together the U. S. operation was and is its large permanent staff, who are trained as they move through the ranks and fully absorb the US-NRC’s rich institutional culture. However, some of the larger oversight committees

¹⁴ The procedures codified in the RSC “Manual of Procedures” include a methodical separation of functions; this principle is the ultimate guarantee of the panel’s independence. It is put into practice through a series of steps:

1. The panel report is a report *to* the Society, not a report *by* the Society itself;
2. No officer of RSC, or member of the committee that selects panelists, can be a panelist;
3. The panel, when first convened, must approve the project terms of reference;
4. The panel is the sole authority of what sources it will consult and with whom it will meet;
5. No non-panelist can attend panel deliberations except by the panel’s invitation;
6. No record of panel deliberations is kept (following completion of the report) except by decision of the panel;
7. The peer review monitor, who chooses the peer reviewers, is not a panelist;
8. The panel is the final authority on how it responds to peer review comments;
9. No one outside the panel and peer reviewers (and staff who are sworn to confidentiality) may inspect the panel report until it is signed off, as completed, by the panel;
10. No changes may be made to a panel report, without its express consent, by anyone else.

¹⁵ In the period between January 1993 and June 1997 (fifty-four months), for example, the U. S. academies issued a total of 1,331 reports – an average of about 300 per year: U. S., General Accounting Office, “Federal Research: The National Academy of Sciences and the Federal Advisory Committee Act” (November 1998)— <http://www.gao.gov/archive/1999/rc99017.pdf> – page 4.

in the US-NRC structure, especially those that were managing a steady flow of major reports, had found it useful, over the years, to “codify” major aspects of their operating rules of procedure, such as defining “bias” and conflict of interest, describing the steps to be taken in peer review process, specifying the role of the panel chair, and assuring the confidentiality of panel discussions. But such documents had never before been collected, nor had any of them been issued or publicly circulated by US-NRC.¹⁶

Mr. Uman assembled some hundreds of pages of their internal procedural documents from various committees and made them available to us. These documents form the sole original basis of the RSC’s “Manual.” The main topics in the manual reflect those areas of administrative procedure in the conduct of expert panels, in the U. S. system, which senior staff had considered to be most in need of clarification. To be sure, the main support for the high level of credibility enjoyed by the U. S. national academy reports is the proven track record represented by the huge volume of reports already issued, all of them authored by panelists of unquestioned expertise.¹⁷ The

¹⁶ There may be a simple reason for this fact. The United States operates under a legal system that makes government administrative procedures subject to legal challenge. Thus anything that is written and codified is a standing invitation for a lawsuit. See the GAO report, cited in note 14, for a review of one long-running episode in which the national academies were involved; cf. “Congress moves swiftly to protect academy’s independence,” *Nature*, vol. 390 (13 November 1997) - <http://www.nature.com/nature/journal/v390/n6656/pdf/390104a0.pdf> - page 104.

On the other hand, the penchant for procedural codification in that country results in some interesting and valuable discussions. For a recent example, see: United States, Office of Management and Budget, “Final Information Quality Bulletin for Peer Review” (2005): http://www.whitehouse.gov/omb/fedreg/2005/011405_peer.pdf

¹⁷ Even this highly-competent agency can occasionally get itself into trouble. See, for example, “Watchdogs call academies to account over conflicts of interest,” *Nature*, vol. 432 (10 November 2004), p. 133: <http://www.nature.com/news/2004/041108/full/432133a.html>.

situation in Canada was quite different, of course, since we were proposing to set out on a new course, in which RSC would be identified for the first time as the institution in Canada that would take public responsibility for overseeing the production of reports that were meant to have the same level of credibility as those issued by the U. S. academies and The Royal Society, which are by far the most active academies in the world in this regard. RSC's Committee on Expert Panels agreed that one good way to "jump-start" this process would be to prepare a public document about its expert panel procedures, which were designed explicitly to justify the claim of high credibility.

As it happened, RSC itself received the first commission for an expert panel report in late 1996, just when the "Manual" was in final stages of preparation. The key factor in this occurrence was the presence of Daniel Krewski, a senior official at Health Canada (now at the University of Ottawa), on the Committee on Expert Panels. Dan was thoroughly familiar with the U. S. national academies system, having been already at that time a member of a number of panels which had produced major reports on high-profile issues. Thus when the Government of Canada was confronted with the need for a credible assessment of a French technical report on asbestos risk, Dan arranged for the project to be assigned to RSC. Other commissions quickly followed, and in the period 1996 to 2004 the Society issued a total of eight major reports; in the majority of cases, two federal departments, Health and Environment, were the sponsoring agencies.¹⁸ All

¹⁸ For the eight panel projects commissioned and completed in the period 1996 to 2004, see: http://www.rsc.ca//index.php?page=expert_panels_since1995&lang_id=1&page_id=133. It should be noted that, throughout this period, numerous other inquiries about panel projects from potential sponsors were received by the Society. In one case, a panel was already appointed and awaiting inception of its work when the sponsor, a federal department, was required to cancel the project for legal reasons. In another case, also involving complex legal issues, a panel project, to be undertaken jointly with the U. S. National Research Council, has

of the reports immediately attained the status of authoritative documents; in most cases, their release was the subject of national media coverage.¹⁹ Three of them in particular—on the research monkey colony, radiofrequency fields, and food biotechnology—dealt with highly contentious issues of great interest to the public and various interest groups. These three panel reports have been widely circulated around the world, and are still to this day, many years after they were released, regularly cited.^{20,21}

been the subject of intermittent discussions between the Society and both the Council and the potential federal government sponsoring department ever since 2003; it remains under consideration. In one or two other cases, potential sponsors outside the federal system hastily withdrew their requests when they realized that they would not be permitted to participate in either naming the panelists or reviewing the report before its release.

¹⁹ The media coverage was greatly assisted by what was, so far as I know, a RSC innovation: Each panel report was prefaced by a “public summary,” which sought to cover the panel’s approach, conclusions and recommendations in non-technical language. (Thus it is quite different from the conventional “executive summary” one finds in U. S. academy reports.) The most important point is that this public summary was an integral part of the panel report, written by the panel itself. I hope that CCA continue this practice, in part because in many cases, it is the only part of the report that will be widely read.

²⁰ As of 2006, all of them were highly ranked in Google search results using generic subject-matter search descriptors:

- (1) In the case of the monkey colony report (1997), this was a topic of intense interest both to the general public and a coalition of animal-welfare groups; during the six months of panel deliberations, the *Ottawa Citizen* published a series of extensive articles, including front-page articles, on the subject. Six years after the release of the original report, Health Canada asked RSC to commission a follow-up report to examine the government’s progress in responding to the original report’s recommendations.
- (2) As mentioned, the 1999 report on radiofrequency fields has been updated twice so far—in this case, through publications in peer-reviewed journals.
- (3) The 2001 report on the regulation of food biotechnology was a special case. It generated intense interest, including both praise and some severe criticism, both in the scientific community and among the general public. Health Canada has issued, on its website, both a 2001 “action plan” as well as nine “progress reports” (the last appeared in June 2005) on its response to the panel’s recommendations. See: http://www.hc-sc.gc.ca/sr-sr/pubs/biotech/index_e.html (as of 16/01/08).

²¹ The food biotech report is the subject of continuing interest on the part of both ENGOs and academics. See Peter Andrée, “An analysis of efforts to improve genetically modified food

Thus the original conception—where RSC’s function essentially would be limited to accrediting other institutions and certifying their products—was soon forgotten. And it turned out not to be necessary, as was first thought, to spend some years building credibility for the expert panel process “in theory,” as it were, through the issuance of the manual of procedures, before one could expect the first commissions for actual projects. On the other hand, since 1996 the Society has had to respond to many inquiries, from members of the public, about the nature of its panel processes and the justifications for some of the procedures, and the exposition on these points, contained in the “Manual,” has proved to be most helpful in this regard.²²

regulation in Canada,” *Science and Public Policy*, vol. 33 (2006), 377-89. Andrée’s article even cites the letter sent by the Deputy Minister of Health to the RSC President on the eve of the report’s release, and the reply to the DM made by the panel co-chairs (these documents were obtained by an ENGO through an ATIP request).

²² The justification for a particular kind of panel composition is always a matter of keen public interest, as is only to be expected. People are curious about what criteria are applied, and why, in the choice of panelists. For example, “conflict of interest” is usually easily understood by the public, but perhaps not surprisingly, some academics can be rather blasé about this, professing surprise when, for example, the issue of their commercial interest in a spin-off company is regarded as being relevant to possible panel service. On the other hand, the criterion of “balance,” which is a core issue for panel credibility in the eyes of the scientific communities, is often harder to explain. The RSC experience suggests that it is well worth the effort for the staff of the responsible organization to be well-trained in these matters, including the ability to discuss them with the inquiring public.

Staff also need to know that they will be challenged on some matters and need to be ready to “push back” under certain circumstances. For example, the Society was once contacted repeatedly by a lawyer who was seeking the release of any notes in its possession documenting the record of a panel’s oral deliberations. This was resisted. No such notes should ever be retained, because one strongly desires panel members to engage in freewheeling discussions, and it would be far too easy for an outsider to misrepresent a panelist’s position by taking random statements from the record out of context.

On one occasion, in 1998, an opportunity arose to acquaint an important external advisory group of the Government of Canada, the Advisory Council on Science and Technology (ACST), with what had been accomplished by the Society in the preceding few years. A report was commissioned from William Leiss by the ACST's Office of the Executive Director; delivered on 30 March 1998, it was entitled "Expert Panel Processes: Options and Summary of Procedures." The report suggested a number of ways in which the Society's initiative could become more widely taken up by government departments and agencies, but nothing came of these notions; subsequently, ACST appointed its own external expert panel.²³

Section II: Years 2000 and 2001.

By the end of 1999 RSC had successfully administered the first three of what became eventually a series of eight expert panel reports. Although the end-product appears to be a rather straightforward document, namely, a technical report similar in length and appearance to many others of the same type, this is a highly misleading impression. For reasons that have been partially explored in the foregoing, expert panel reports produced under the auspices of national academies are special kinds of documents, ones which are meant to carry an inherent and appropriate claim to unique credibility. The severe challenges involved in producing this special type of report "on time and within budget," on a regular basis, turned out to be daunting.²⁴

²³ ACST, "Public Investments in University Research: Reaping the Benefits," Report of the Expert Panel on the Commercialization of University Research, May 1999.

²⁴ Even the contractual agreements between the Society and the Department of Public Works presented significant difficulties at first. (During these years, the RSC's Sandy Jackson provided indispensable assistance in negotiating and managing the series of contracts.) One issue was that the allowed "overhead" was so small that no reserve for carrying staff salaries in between

The overriding challenge was one of delivery deadline, which was in every case unreasonably short (especially when translation had to be factored in), forcing the Society either to agree to the timing or to refuse to undertake the project. The most severe pressures were imposed on panelists, who had to be asked to interrupt busy schedules on short notice for what was essentially a public-service duty. Since one is normally looking for senior people for these positions, a good deal of arm-twisting was required, although in most cases agreement was secured in the end. The resulting pressures on both panelists and staff were extremely difficult to manage, and the deadlines were met owing only to the strong reserves of good will upon which the Society could draw. This experience was especially annoying to those who had had the experience of working on U. S. academies panels, where it was always abundantly clear that there would be no unreasonable deadlines for completion of a report.

The Committee on Expert Panels, which was responsible for choosing the panel members and panel chair, and for overseeing the compliance with rules of procedure, was made up of volunteers who were otherwise busy. The chief problem was that each project was a one-time contract for services, and thus there was no opportunity to hire and train continuing staff in order to assist the senior scholars who were temporarily volunteering their time for these oversight functions. These and other management

projects could be built up. More difficult was the report delivery mechanism; DPW was astonished, at first, at the idea that the report must be ready for release before the sponsor could even examine it! A solution to this anomaly was found in the practice of delivering the report, already printed and therefore not subject to any changes, "under seal" to the sponsoring department a few days before it was released to the public. This also allowed the department to prepare a preliminary response to the report, since reporters typically called immediately following the RSC press conference, at which the panel chair and a few other panelists presented the report and answered questions from the press, interest groups, and the public.

issues imposed a severe strain on the Society and its staff, because it is simply not acceptable to make substantial mistakes in such a high-profile venture.²⁵

The high credibility that is appropriately attached to national-academy-type reports comes at an equally high price: There is no room for error in ensuring that all of the key procedures have been rigorously adhered to. For example, one cannot, except in very unusual circumstances, make changes to the panel composition after it is publicly announced. In addition, there must be a clear understanding between the sponsoring department and the responsible body (RSC, in this case) about the precise nature of the questions to be addressed by the panel, as well as about the type of documents the panel will review in the course of its deliberations. And panel members can never be allowed to acquire – reasonably or otherwise – the feeling that they have been “pressured” into supporting a line of reasoning at variance with their own best judgment. Finally, the peer review segment of the process must be carried out with scrupulous care.

A particularly onerous matter was the lack of any mechanism whereby both the Society and the panel could remain “engaged” on the issues generated by a panel report following its release. The main obstacle was that the contract ended with the delivery of the report to the sponsor, so there were no funds available to support any subsequent activities. This presented an especially difficult situation with respect to the food biotechnology panel, in view of the extraordinary level of genuine interest in both the

²⁵ The situation became acute in 2000-2001, when the Society had three different panel projects running simultaneously, all of which reported in the year 2001. Only the heroic efforts of Queen’s University’s Dr. Geoffrey Flynn, who was then Chair of the Committee on Expert Panels, made it possible for the Society to discharge its responsibilities for panel selection and panel project oversight.

report itself, and the range of more general issues (around the concept of precaution) it touched on. To be sure, it is uncommon for national academies to carry on a public “debate” with other parties following the issuance of a report. RSC never had a chance to work through this dilemma, for purely practical reasons. (It seems to me that there must be some legitimate ways in which CCA could develop innovative practices in this regard, in order to extract added value from panel reports in the future.) Clearly no one else can speak for a panel, and panelists want to get back to their own work after they have signed off on their report. It would be necessary to think through this problem and see whether any good solutions can be found.

This is by no means an exhaustive list of the types of issues and management problems faced by the Society in its attempts to acquit itself honourably in this function. All those who were directly involved were keenly aware of the twin pressures RSC faced during those years. One was our knowledge that we were entering an arena where very competent academies in other countries had already established a high standard of performance, and that we would be judged by our peers accordingly. The other was our awareness that others outside the academies in Canada, particularly in the federal government, would be observing the results, and that they might well bring a certain lack of charity to the task, seeking confirmation of a prior belief that RSC would be unable to discharge these responsibilities adequately.²⁶

²⁶ If the author’s sensitivities are on display in this passage, there are reasons for it. In no other developed nation in the world have a country’s national academies been expected to manage their affairs solely on the basis of their own private resources (that is, the dues and bequests of their aged members), while simultaneously being disparaged by others for doing little beyond awarding medals and honours to themselves.

This is not a complete picture, however. Beyond the satisfaction involved in delivering to sponsors a series of highly credible reports, there was the gratification of seeing first-hand the dedication of the senior academics who agree to serve on expert panels at the request of national academies. The Society always sought to take seriously the special demands imposed on those appointing panelists that are implied in the notion of “balance.” It is a mistake to interpret this criterion narrowly, for example, as including only the established sub-fields within a single academic discipline. Rather, balance should be interpreted broadly, in a cross-disciplinary sense, but also in terms of the need for a depth of understanding about the interface between science and public policy. Of course, in the Canadian context, regional, linguistic, and gender balance is also required. Such diversity has its costs, in that panelists from quite different backgrounds must work cooperatively, under extreme time pressure, to resolve complex questions and, ideally, reach conclusions that are unanimously affirmed. While the RSC sets of panelists sometimes struggled to reach a consensus, we also had many private reports from panel chairs who had witnessed in the panel deliberations a spirit of good will, collegiality, and a willingness to find common ground without compromising on matters of principle. When such expert panels work well, it seems, they can be among the most gratifying professional experiences in one’s career.

Section II: Years 2000 and 2001

The third in the “new series” of RSC panel projects (radiofrequency fields) was completed in 1999, and in October of that year the members of the fourth panel (particulate matter and ozone depletion) were appointed. However, toward the end of 1999 it had also become apparent, to some of those at the Society who had lead roles in

the expert panel business, that the prevailing arrangements were likely to prove to be unsustainable in the long run.

The overriding reason for this view was that the practice of treating every request as a one-time contract, while convenient for the potential sponsors, imposed an intolerable burden on the Society and its staff. The lack of continuity meant that no one could be hired and trained on a permanent basis. Many of the key responsibilities, such as panel selection, require types of skill and subtlety in judgment that are very difficult to pick up quickly. RSC's organizational memory and experience base was fragile and could be disrupted at any time; meanwhile, one never knew when to expect to have new business come through the door. The responsible officials at RSC were volunteering their time, carved out of already busy schedules.²⁷ They were all-too-aware of the high standard for "product quality" set by the international peer group, and of the dilemma presented by the thin layer of qualified personnel, which meant that there was an ever-present risk of a serious error being made simply because with oversight responsibility happened to be available in Ottawa at a critical point in time.

There appeared to be only one possible way to change the situation, namely, through an appeal to the federal government for sustaining funding. A proposal was drafted by William Leiss in January 2000 and was circulated only to a few colleagues before being sent to the Hon. John Manley, Minister of Industry, and to the Hon. Gilbert

²⁷ The idea that senior academics might have salaried, full-time (or at least part-time) positions available to them while they occupy leadership positions at national academies, while common elsewhere, is almost impossible even to conceive of in the Canadian context.

Normand, then Secretary of State (Science, Research and Development), who reported to the Minister of Industry, in early March. In the early draft, RSC was the only proponent, and CAE had not been consulted. The rationale was simple, if mistaken: This was about the long-term capacity to carry out expert panel projects under the rubric of a national academy, at the request of agencies of the national government, and at that time RSC was the only entity which was, in matter of fact, in that line of business in Canada.

The proposal consisted of two parts, a request for infrastructure funding and a short background document on the role of national academies in providing expert advice to national governments, using the U. S., U. K., and France as examples. An annual budget of \$1,500,000 was proposed, later raised to \$2m. The strongest part of its rationale was its citation of a passage from a short piece written in 1999 by Tom Brzustowski, President of NSERC:

The Royal Society of Canada is an established national organization that has been doing important work for many years in recognizing and honouring outstanding Canadian scholars in all fields. On occasion, it has also conducted significant studies commissioned by the government. The Canadian Academy of Engineering is a newer organization playing the corresponding role for the engineering profession. The RSC and the CAE both certainly have the intellectual capacity to represent the Canadian scientific and engineering communities in national debates, and to develop compelling independent advice to government on major issues that they themselves have identified, but they lack the resources and the public attention to play those roles.²⁸

²⁸ Editorial, *NSERC Contact*, Fall 1999, pp. 2-3.

Dr. Normand responded with keen interest and immediately set up a series of meetings and consultations.²⁹ One of the first suggestions from the Secretary of State's office was to bring in the Canadian Academy of Engineering as co-proponent, which was done immediately, and from that point forward the proposal design was the joint product of the two academies (the health sciences academy was added later). The initial proposal had at least implied direct funding to The Royal Society of Canada. The joint proposal, of course, required an entirely different framework. Thus the first versions of the joint RSC-CAE document envisaged the creation of a new legal entity, which was named "The National Academies of Canada" [NAC]—an obvious and intended reference to the U. S. system. The revised approach also devised a solution to the imbalance in size between the two proponents, namely, a structure in which the three academies within RSC would operate as separate units, along with CAE, within the larger framework of a newly-created entity.³⁰

At the time when the proposal referred solely to the RSC, its administrative aspect was straightforward: RSC would administer the funds.³¹ The creation of a joint

²⁹ The presence of Paul Dufour (now in the Office of the Science Advisor) on Dr. Normand's staff may have had something to do with this response, since Mr. Dufour was familiar with the Society's early history: R. Daley & P. Dufour, "Creating a 'Northern Minerva': John William Dawson and The Royal Society of Canada," *Journal for the History of Canadian Science, Technology and Medicine*, vol. V (1981), 3-13. The response from Minister Manley was decidedly cooler: In a letter to RSC dated May 9, he acknowledged the value of RSC's recent work with expert panel projects, but wondered why the then-existing system of "pay-as-you-go" projects should not be maintained.

³⁰ "The National Academies of Canada / Les Académies nationales du Canada: A Proposal to the Government of Canada," May 4/5, 2000.

³¹ Although the proposal was not explicit on this point, the intent was always to secure the funds by means of an annual grant (grant-in-aid), not a contract, because this was considered to be important in protecting the independence of the national academy. This intention was

venture required a different solution, namely, a new (third) entity which would serve their common purpose whilst also maintain the separate identities of the two academies. In effect, the revised approach, although displayed graphically as a hierarchy, was meant to create a “parallel” structure, in which the two academies would be “joined at the hip,” but only with respect to the public-service function of producing expert assessments. (They would remain separate in so far as their traditional “fellowship” functions were concerned. For example, the May 2000 proposal included a secondment, at 50% time, of all RSC and CAE staff, to NAC, where they would work in the assessments business for this portion of their duties.) This conception was based, of course, on our understanding of how the U. S. system worked, in the relation between NRC, the “operating arm,” and the three national academies.

In this important respect the revised approach retained what may be called the “core concept” of the original RSC proposal, namely that expert assessments done under the auspices of national academies at the request of national governments are unique. That is, this type of assessment has special characteristics (as noted above, a special credibility derived from the two qualities of disinterestedness and independence). The structure of both the original and revised proposals makes clear the implicit and explicit

preserved when the change to a joint proposal took place. At various times, an endowment – sufficient to generate an appropriate level of annual income – was also discussed. The third strategy was to prepare an Act of Parliament that would mimic the U. S. system, which virtually guarantees a steady flow of requests for studies from agencies and departments of the national government. (The provision of a generous overhead percentage in all of the individual contracts for studies allows the U. S. system to maintain its large permanent staff infrastructure.) These issues will return, for CCA, once the initial ten-year agreement expires. In the case of The Royal Society (London), the large “science advice” function (and staffing) is supported by the annual grant-in-aid from Parliament; although this is an annual appropriation, the long history of the relationship (dating back to 1849) appears to assure continuity.

message that *producing such assessments is the business of national academies, in so far as their public-service role is concerned*. The main presupposition in both versions is that the academies themselves are and must be intimately involved, as organizations, in the assessments business. This is obvious on its face, with respect to the situation in most countries. But it is equally true of the U. S. model: The legal structure under which that system operates ensures that The National Academy of Sciences is the holds the decisive hand in that four-member family. The “Canadian version” of that system, as shown in the May 2000 version, designed the NAC to be just like US-NRC in a legal sense: RSC and CAE representatives would control the board of NAC; furthermore, the RSC members would make up a majority on the board, mimicking the predominance of NAS in the U. S. arrangements.

As soon as the revised proposal was submitted, Dr. Normand initiated a process of broader consultation. He scheduled a meeting for May 4 and invited a spectrum of senior figures, including the presidents of the three federal granting councils, RSC, and CAE; the presidents of NRC, Genome Canada, CFI, and AUCC; representatives of the PMO and the Governor-General; two sitting MPs; and a few other senior academics. (Most of the invitees came to the meeting.) Support was provided by officials from Industry Canada. Encouraged by the enthusiastic backing of the attendees at that event, Dr. Normand’s gave his staff responsibility for moving the proposal forward. At that time a more generic title was chosen for the venture: “National Science Organization” (NSO). It might be assumed that this name change reflected the wish of the government officials to downplay the “academies” profile for the time being, and perhaps it represented a lingering effect of the earlier débâcle involving RSC. But there was also a

substantial reason for it, one that was accepted by both RSC and CAE: Dr. Normand had concluded, quite properly, that he should not bias his plans for a wider public consultation and discussion by conflating two issues: first, whether or not there was a present “need” for such a function in Canada, and second (assuming a positive answer to the first), what body should be assigned to perform it. The NSO label had a definite air of neutrality about it, one that all parties regarded as appropriate.

During the Summer of 2000, the RSC/CAE proposal surfaced publicly for the first time in an article in *Research Money*, where Dr. Normand announced his hope to convince his Cabinet colleagues to support the proposal.³² Also during the Summer of 2000 Dr. Normand’s office launched a series of initiatives, including the planning of a national “round table” consultation meeting and the commissioning of background papers, from a variety of consultants, on aspects of the NSO concept. An informal working group was established, consisting of many of those who had attended the May 4 meeting. Dr. Normand’s letter of invitation to the national meeting, scheduled for 4-5 October 2000, contained the following sentence: “With the recognition that the sciences and technology are moving to the center of decision making in all walks of life, has come the call for the creation of an independent, credible organization to provide

³² *Research Money*, 9 June 2000. This article recalled the distant reverberations from the earlier history between RSC and Industry Canada (note 6 above), as did a short note appearing some months later: “Few politicians besides science czar Gilbert Normand have endorsed the idea. The lack of enthusiasm may stem from a consultant’s 1994 conclusion that the Royal Society had failed a government-sponsored, \$5-million, 5-year test to see if it could reposition itself as some form of national academy.” “Science Scope,” *Science*, vol. 290 (27 October 2000), p. 685. The report’s comment about the “test” is entirely mistaken: No federal funding at all was granted for such a purpose in that five-year period.

clear, unbiased advice on the scientific and technical issues that affect our lives.”³³

Eventually, the October meeting was convened under the title, *Using Knowledge to Advantage: The Need for a National Science Organization*.

About a hundred participants showed up for the National Round Table in early October 2000, including representatives of The Royal Society and the *Académie des Sciences* and of a broad range of professional and educational societies from across the country. Two questions had been posed to the group: “Does Canada need credible and independent assessments of the science and technology underlying pressing issues of the day? If so, what mechanisms or organizations would be best suited to providing assessments?” A short discussion paper, prepared by a consultant and entitled “Using Knowledge to Advantage,” had been circulated in advance. The record of meeting demonstrates clearly that there was a lively, wide-ranging discussion, remarkably free of rancour and invidious references to past events, on both questions.³⁴ There was a strong consensus in favour of answering both questions in the affirmative; with respect to the second, a wide variety of implementing strategies was discussed, but there was no

³³ By this time the dual involvement of officials within the Industry Canada (IC) line agencies, as well as in the small, quasi-independent “shop” reporting directly to the Secretary of State, was evident. A letter from one senior IC official to the President of RSC, in August of 2000, referred to the planned October consultation meeting under the title, “National Science Academy – A Day of Reflection.” (Shades of 1969!) In the end, the NSO moniker prevailed.

³⁴ Prepared by Intersol Consulting Ltd. (Archive). One notable point is that, in a presentation to the group, a senior Industry Canada official insisted that there was an important difference between “advice” and “assessment.” In large part this distinction was intended to avoid any perceived overlap between a new NSO and two existing bodies, ACST and CSTA. From that time forward, the use of the phrase “science advice” in documents related to the NSO was proscribed. (I am very pleased to see that CCA has revived earlier concept in its excellent motto, “Science Advice in the Public Interest.”)

desire, on the part of the Secretary of State's office, to indicate a preferred scheme as of that time.³⁵

It was upon this occasion that the first references were made to drawing a third national academy into the RSC/CAE proposal. For some time RSC had been talking to representatives of CIAM, the Canadian Institute of Academic Medicine (some of whom were RSC fellows) and had learned of their desire to found a broader academy of medical or health sciences. There were existing models in France and the United States, and a new academy of this type was just being formed in the U. K. After October 2000, the President of CIAM participated in all of the discussions.

The inaugural meeting of the "National Science Organization Working Group," consisting of fourteen individuals, was held on 8 February 2001. This group, as well as a smaller sub-committee, met periodically throughout the year 2001.³⁶ The statement of terms of reference for the group referred to the October 2000 meeting and stated:

Consensus was reached on the need for an independent, multi-disciplinary, national organization for the sciences and humanities (including the social sciences and engineering) funded with new dedicated resources. Participants agreed that Canada requires a NSO to conduct assessments of science and technology to support informed decision-making by government, industry and individual citizens. While consensus was not reached on the preferred model, there was a strong and diverse base of support for a broadly-based umbrella organization which would consolidate many of the roles and abilities of existing science organizations under a new and expanded mandate and governance structure.

³⁵ *Research Money*, 23 October 2000, p. 5.

³⁶ Members included the presidents of RSC, CAE, CIAM, CFI, and NSERC; for the complete list, see the letter of Dr. Normand dated 30 January 2001 (RSC Archives).

The task assigned to the group was to “develop a proposal for a new national science organization.”

A sub-committee was struck with a mandate to “narrow the range of possible options for a Canadian NSO.” For its first meeting on 1 March, Dr. Normand’s staff had provided its members with a brief document that outlined (on the basis of discussion at the 8 February meeting) only two broad categories of candidate organizations for filling the role of a NSO.³⁷ These were a “broadly-based NSO,” based on a stakeholder model with wide representation, and a “selectively-based NSO,” which was in effect a national-academies model. They also supplied a consultant’s report, entitled “A comparison of science academies in the G-8 and other countries, and options for a Canadian equivalent.” The approach to the NSO issue that was taken in the report (a focus on G-8 countries) had its origins in Dr. Normand’s own experiences in attending meetings in Europe of G-8 science ministers. He often remarked at NSO Working Group events on his feeling of being somewhat out of place at the G-8 meetings, because without exception every other minister in attendance was accompanied by a science advisor who had a senior role in that country’s national academies. It was clear that his quick and

³⁷ An important issue had been resolved by that time. The staff background paper provided two key definitions, for “sciences” and “assessment.” The first read: “All of the recognized disciplines of specialized knowledge, including the natural sciences and engineering, the human sciences, the health sciences, and the humanities, arts and letters.” This conception is quite “Canadian” and sets us apart from the traditional, narrower base of the affiliation of national governments with the senior natural-science academy. There was no resistance to it, either at NSO Working Group meetings or from within the government staff personnel assigned to this project. Of course, its intellectual origins are best indicated in the concept of the “human sciences,” embracing both the social sciences and the humanities; the twin German terms, *Naturwissenschaften* and *Geisteswissenschaften*, express it best. Note also that the motto of the University of Ottawa, “*Deus Scientiarum Dominus Est*,” is translated into English as “God is the lord of knowledge.”

enthusiastic response to the RSC and RSC/CAE proposals, and the priority he assigned to moving this “file” forward thereafter, was rooted in these experiences.

The lead consultant for this report, Willie Smith of New Zealand, had prepared excellent prior reports on science advice and expert panels for the governments of New Zealand and Canada. Since his focus was on G-8 countries, it was a foregone conclusion that his conception of a viable NSO would give priority to a national-academy model. Although there was subsequently a series of lively and free-wheeling debates at the NSO Working Group meetings, after the March 1 meeting the preponderance of opinion and argument was strongly in favour of that model.

During the Fall of 2001, Dr. Normand promoted the concept in interviews with the journal *Nature* and the periodical *University Affairs*.³⁸ The statements published there show that the NSO Working Group had arrived at a final consensus, over the course of the preceding Summer, on a preferred model for the organization – namely, a new entity, now called the Canadian Academies of Science, which would be controlled jointly by Canada’s three national academies. In the *Nature* interview, Dr. Normand went so far as to reveal the scope of the enterprise: Government support would be sought in the amount of \$3 million annually, ideally as an initial ten-year allocation of \$30 million, with the hope of including the appropriation in the next federal budget.

³⁸ “Canada plans to give unified voice to science,” *Nature*, vol. 412 (9 August 2001), p. 573: <http://www.nature.com/nature/journal/v412/n6847/full/412573a0.html>;
“Proposal for science academy gains support,” *University Affairs*, October 2001: <http://www.universityaffairs.ca/issues/2001/oct/index.html>

The Secretary of State's office released a draft consultation document, entitled "A Proposal for the Canadian Academies," dated 25 July 2001. This text was accompanied by materials prepared to support a wide range of consultation activities, both within and outside the federal system. An extensive series of meetings, led by members of the NSO Working Group and others, took place during the Summer and early Fall of 2001. The preferred model was finalized at the October 5 meeting of the Working Group. For this meeting staff had compiled an extensive catalogue of feedback from a wide variety of professionals across Canada, showing strong support for a new NSO.³⁹ Then, toward the end of 2001 the Government of Canada released a White Paper on "Canada's Innovation Strategy," and the academies proposal was recognized therein as one of the government's priorities, using the following language: "Support a 'Canadian Academies of Science' to build on and complement the contribution of existing Canadian science organizations."⁴⁰

The final document, entitled "A Proposal for the Creation of The Canadian Academies of Science," dated 18 December 2001, was posted on the Industry Canada website at the beginning of 2002.

Section III: Final Stages (2002 – 2005).

Encouraged by government officials, the three academies proceeded to undertake (and pay for) the required steps under the Canada Corporations Act to create the legal entity

³⁹ Archive, Binder for meeting of 5 October 2001.

⁴⁰ *Achieving Excellence: Investing in People, Knowledge, and Opportunity*, 2001, p. 87.

in that name, a process completed by April 2002. It is probably fair to say that during the first few months of 2002, academies representatives believed that there was a good chance they would see funding in the upcoming federal budget and implementation of the long-awaited actions.

And then, so far as those observing from outside government could ascertain, the proposal seemed to slowly expire.⁴¹ For there were, in fact, dozens of government objectives set out in the 2001 White Paper, and outsiders had no way of knowing what level of relative priority the academies proposal was assigned within the long list of publicly-stated priorities collected under the rubric of an “innovation strategy.”⁴² To be sure, occasional meetings and lobbying activity continued, but as time passed the chances of success appeared to diminish steadily. By the Spring of 2004, the leadership at RSC, at least, was beginning to re-evaluate its strategy and consider whether the existing proposal should be abandoned and other avenues explored.⁴³ The series of expert panel projects at RSC continued throughout the period after 2001: one panel reported in 2003, followed by another in 2004; one other was cancelled for legal reasons after the panel had been appointed; one other potentially large joint project with the

⁴¹ Of course, an endless series of meetings and lobbying activities continued. Howard Alper, who became president of RSC in November 2001, was tireless in his sustained efforts to keep the proposal alive. Gilles Paquet, who succeeded him two years later, then took up the cause.

⁴² Much later, after the proposal had been miraculously revived in the Fall of 2004, Industry Canada officials remarked that, so far as internal departmental priorities were concerned, the academies proposal never ranked particularly high on the overall list.

⁴³ Sometime around May 2004 the then-president of RSC, Gilles Paquet, called me to discuss the situation, which, we agreed, was not hopeful. Knowing my personal commitment to the existing proposal, he kindly asked me whether I would release the Society from any further obligations to support it, should that course appear to be pointless, and to assist him in exploring other options. I agreed to do so on both counts.

NAS was under intensive review; and numerous other inquiries had been made. At the very least, RSC was fully committed to staying in this business, even under the onerous administrative burdens discussed earlier. And the RSC leadership was beginning to evaluate other options for establishing its expert panel activity on a more sustainable footing. We were mindful of the fact that the fellows of RSC had enthusiastically supported our initiative from the beginning, a clear sign of their commitment to the public-service function of their national academy. We knew that CAE and CIAM (then already in the process of transforming itself into CAHS, the Canadian Academy of Health Sciences) remained equally firm. The one thing that was clear to everyone concerned was that none of the partners was prepared to abandon the field.

Then in mid-summer 2004 the Office of the National Science Advisor, which had been created in April of that year, contacted representatives of the academies to say that the proposal was being revived and actively considered for funding. Prime Minister Paul Martin announced the commitment in his reply to the Speech from the Throne on 5 October 2004.⁴⁴

Conclusions.

This paper seeks to tell the story of the series of events, which took place over the course of a decade, culminating in the formal beginnings of CAS (now CCA) in September of 2005. The interpretation of those events in this paper is based on an extensive and

⁴⁴ A variety of comments made at the time may be of interest. See *Research Money*, 12 October 2004; "Canada to join 'big league' with its own science academy," *Nature*, vol. 431 (14 Oct. 2004), p. 727; "Martin backs science academy," *Science*, vol. 306 (22 Oct. 2004), p. 589; "Prime Minister creates Academies of Science," *University Affairs*, December 2004.

reasonably complete documentary record; I believe that the contents of those documents fully support the following conclusions:

1. The original proposal was initiated by RSC, early in the year 2000, on its own behalf, in the context of the administrative challenges it faced in delivering a series of expert panel reports, commissioned by the federal government, beginning in 1996.
2. A single core concept runs throughout all stages in the evolution of the proposal, first presented to the federal government in March 2000 and finally announced in October of 2004: namely, that the chief public-service responsibility and mission of national academies is to perform independent expert assessments at the request of governments, and that Canada's national academies wish to be in a position to discharge that responsibility appropriately.
3. The situation of the public-service role of national academies in Canada, considered in relation to the common patterns everywhere else in the world, has always been anomalous.
4. The administrative model most relevant to the final form of the Canadian proposal is the U. S. one, where the US-NRC provides administrative support and staff expertise for the joint roles of the three national academies there with respect to the production of expert assessments.
5. In all instances around the world, without exception, where national academies perform these functions, either the senior national academy itself or a number of academies jointly (through the academy president/s and senior staff), are directly involved in the business of producing expert assessments.
6. All three of Canada's national academies remain fully and firmly committed to the idea of having a direct and ongoing involvement in that business.

The formal inception of CAS activities in September 2005 represented the resolution of a matter that had lain dormant for all of 122 years, ever since the RSC had been incorporated by an Act of Parliament, and was granted its Royal Charter, in 1883. That "matter"—the public-service role of Canada's senior national academy, including its national academy of sciences—had been under discussion from time to time in

Canada since at least the late 1960s, and quite possibly even earlier. At times the tone of this discussion has been rancorous, ungenerous, and even spiteful.

I conclude with a personal observation about what occurred in the period between the Prime Minister's announcement in September of 2004 and the formal inception of CAS's activities one year later. This observation has to do with the relation between the three academies and CCA, considering the latter in its legal and corporate role. It is my personal belief—and I stress emphatically that this is a personal view—that, collectively, the representatives of the three academies made a very serious error during that time. Their formal partnership had been sealed ever since CAS was legally incorporated in April 2002; but little if any effort had been expended, between that time and the September 2004 announcement, in envisioning how the partnership would actually work. I recall clearly the enormous amount of good will and the easy collegiality that existed among the academies representatives during the years 2000-2001, when the partnership gradually came together under Dr. Normand's tutelage, aided by the many dedicated persons who served on the NSO Working Group (including the government officials who worked on the file).

For reasons that are not at all clear to me, that good will and collegiality appeared to have evaporated completely by the time when the three partners began to devise an operational strategy beginning in September 2004. It seemed to have been replaced by a competitive ethos and a sense that the three academies had quite different interests with respect to their joint venture. During that entire critical year leading up to the September 2005 launch of CAS, almost no effort was expended in *defining, collectively*

and collaboratively, how the three academies – including their officers, fellows, and staff – would now be integrated within a single administrative framework facilitated by the Board and staff of their “operating arm,” CAS [CCA], so far as their roles in the expert assessment business was concerned.

I emphasize here the word “integrated” in the italicized passage above. The consensus-building exercise conducted by the government in the period 2000-2001, when the academies project was under discussion, involved a wide range of qualified individuals beyond those affiliated with any national academy. At every stage in those discussions, there was agreement on the idea that the two (and later three) Canadian academies would be acting jointly, not severally, in any new setup where they would have responsibility for expert assessments. At no time was it ever contemplated or argued that they might forge a loose association, for the administering of the requested government support, while acting entirely separately in the assessments business. The reasons for this included, of course, the efficiencies to be gained by concentrating trained staff under one administrative roof. But they also included the need to have a unified senior staff structure wielding broad discretionary authority – ultimately subject to Board oversight, of course – to maintain a high level of quality assurance and quality control across all of the assessments. In this respect, too, the designers of this scheme sought to mimic the well-functioning structures in the U. S. system.

As it happens, the legal and fiduciary position of CCA, including its responsibility for managing the funding agreement with the federal government, is paramount. This gives the Board of CCA all of the initiative in this respect, as well as final authority over

what form *any* kind of “administrative integration” of the four entities—CCA and the three academies—can assume with respect to their common purposes, in so far as any financial resources are required (as they of course are). However, by the same token, CCA must now assume the leadership role in shaping and implementing such a program—in large part because the academies themselves failed utterly to discharge their own responsibilities in this regard before September 2005. In my view, CCA should not avoid accepting this leadership role and driving the process forward at this time and in the coming years.

For the alternative is simply unacceptable. The alternative is that Canada’s three national academies would have nothing but a purely formal and “arm’s-length” role in the expert assessments business, confined to the participation of their representatives at occasional meetings of the CCA Board of Directors. Should this come to pass, such a situation would represent, in my opinion, a betrayal of the entire process in which the academies were engaged between the years 2000 and 2005. Should this come to pass, the situation in Canada, in relation to the public-service activities of national academies elsewhere, would revert to what it had been in the past and become, once again, sad and anomalous. Should this come to pass, it would have been far better if Canada’s national academies had never started down the path they traversed in those years.