House of Commons
CANADA

# Standing Committee on Industry, Science and Technology

INDU • NUMBER 025 • 2nd SESSION • 39th PARLIAMENT

**EVIDENCE**

## Thursday, March 6, 2008

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## Chair

**Mr. James Rajotte**

# Standing Committee on Industry, Science and Technology

**Thursday, March 6, 2008**

● (1110)

[*English*]

**The Chair (Mr. James Rajotte (Edmonton—Leduc, CPC)):** I call the 25th meeting of the Standing Committee on Industry, Science and Technology to order.

The orders of the day today are pursuant to Standing Order 108 (2), study of the Government of Canada's decision to phase out the position of the national science advisor.

We have with us here today two witnesses: Dr. Arthur Carty, the national science advisor from the Office of the National Science Advisor, and secondly, Mr. Paul Dufour, interim executive director, Office of the National Science Advisor.

Dr. Carty, do you have an opening statement?

**Dr. Arthur Carty (National Science Advisor, Office of the National Science Advisor, Department of Industry):** Yes.

**The Chair:** Mr. Dufour, do you have an opening statement, as well? No, okay.

Dr. Carty, you can begin at any time. We'll have your opening statement, and then we will go immediately to questions from members of all parties.

Begin at any time.

**Dr. Arthur Carty:** Good morning, everyone. *Bonjour à tous.*

Distinguished members of the committee, *membres distingués du comité*, I want to, first of all, thank you for the kind invitation to appear before you on the matter of the closure of the Office of the National Science Advisor.

To begin, I want to emphasize that my comments today are my own. They convey my experience, my commitment to, and my firm belief in the need for non-partisan, independent science advice at the highest levels of government, including Parliament.

I suspect you will realize that shaping and providing science advice for decision-makers is never easy. To begin with, as Dr. Alan Bromley, a Canadian who served as science advisor to President George W. Bush Senior, once said, “There is little in this world more useless than unwanted advice.” In other words, for advice to be effective, there must be a receptor willing and able to use it.

[*Translation*]

Secondly, as science advisor you need not only a good fundamental understanding and appreciation for science across a very broad spectrum of interests, but also the patience and wisdom to distill insights from many perspectives.

[*English*]

No science advisor, of course, can possibly be an expert on everything. Inevitably then, you must rely on the goodwill, the expert advice, and the support of many individuals and communities that have an interest in the scientific issues of the day. The ultimate goal must be to provide credible, well-founded, non-partisan advice on how science and technology and knowledge and innovation can improve the social and economic well-being of the country.

In Canada, following the announcement of the discontinuation of my office, a debate has emerged that will hopefully trigger a more holistic and intuitive approach to providing science advice to government. Here is a short reflection on lessons learned from my experience as the country’s national science advisor from 2004 to 2008.

First of all, it's important to underscore that the science and technology ecosystem in Canada has evolved tremendously over the past decade or so. This has had major benefits for Canada and Canadians. With over $15 billion of incremental funding invested in research and knowledge generation over that period, Canada is leading the way on many fronts. For instance, we are the leader in the G8 group of advanced countries in terms of investment in university research as a percentage of GDP. We have developed innovative new models of funding and governance such as the Canada Foundation for Innovation, the Canada Research Chairs, Genome Canada, and the recently expanded Networks of Centres of Excellence.

Such is their success that these models are being cloned in other countries around the world. Research institutes dedicated to foundational science, such as the Perimeter Institute for Theoretical Physics, a public-private partnership funded in part through personal philanthropy, have captured the world’s attention, and MaRS, the Medical and Related Sciences Discovery District in downtown Toronto, a meeting place and accelerator for innovation, is a new model to foster technology transfer and commercialization.

I'd also say that Canada punches well above its weight in many international research ventures, and the excellence of Canadian contributions to major science projects in areas such as astronomy, ocean sciences, neutrino science, synchrotron science, particle physics, and structural genomics draws global recognition.

I am proud to say that I have been involved as an advocate and supporter for many of these major science initiatives in my NSA, national science advisor, capacity and before that. These successes notwithstanding, however, Canada needs to continue to invest at a high level to maintain our competitive advantage. It would be so easy, having climbed one mountain, to slide quickly down the other side.

● (1115)

[*Translation*]

However, if one looks around the world, a sound innovation and research system requires more than just scientific excellence and funding. Any S&T approach needs to be strengthened with commitment and leadership in an effective and stable framework that engages advice at the highest levels and stimulates an open dialogue on the future course of research for society.

[*English*]

Now, I say "stable" because the frequent dismantling of our science advisory capacity in the past has left little option but to constantly start afresh with relatively few lessons learned.

The advice in question needs to be fully shared. So I strongly believe that for Canadians to fully appreciate both the lights and the shadows of science and technology, for our science culture and literacy to grow, and for innovation standings to improve, the debate on policy choices for future directions must be aired publicly, much as you do here in this respected standing committee.

I am therefore dismayed and disappointed that the Office of the National Science Advisor is being wound down. I was informed in October that with the evolution of the S and T strategy, my office would be phased out early in the new year 2008 and that the position of national science advisor would be discontinued. So I want to make it unambiguously clear that I conveyed my intention to retire from the public service only after I had been informed that the office was being closed.

Although our office was inadequately funded—it had no permanent staff other than me from year one until an executive assistant was added in 2006—I believe we accomplished a great deal with the limited resources available. As examples of issues we took on, I cite the following.

The national science advisor's office was instrumental in advocating at the highest level for the establishment and funding of the Canadian Academies of Science. This was announced in the response to the Speech from the Throne in October 2004 and in the budget of 2005. The Council of Canadian Academies, as it's now called, is operating with a $30 million endowment to undertake expert assessments of the state of science, underpinning issues that have a public policy impact.

Our office provided key input and interventions leading to the creation of a national secretariat and the government's decision to invest $150 million in the International Polar Year, a global collaboration involving over 60 countries.

In collaboration with the heads of research councils and agencies, we led a national consultation on the development of a framework for the funding, evaluation, and oversight of Canadian major science investments and infrastructure, a framework that in my view is still critical.

[*Translation*]

In partnership with the former Advisory Council on S&T and with an international panel of experts that I convened, in 2005 we developed a draft national strategy for nanotechnology.

[*English*]

With the cooperation of our aid agencies and other departments, we developed an action plan to help mobilize our R and D efforts towards the needs of the developing world. I'm pleased to see that this has been picked up in part by the budget 2008 announcement of a development innovation fund.

The national science advisor and our office also worked closely with Foreign Affairs and International Trade to secure funding for and to design the international S and T partnerships program that is now providing $20 million for enhanced partnerships with Israel, Brazil, China, and India.

To take advantage of emerging opportunities in research and innovation with key trading partners, I championed the creation of the Canada-California Strategic Innovation Partnership, CCSIP, and through many presentations and visits, I've helped, and our office has helped, raise the profile of Canadian science and technology in our G8 partner countries such as Germany, Japan, the U.K., and France.

I've represented the government at the twice-yearly Carnegie Group meetings of the G8 science ministers and science advisors since June 2004. This is a unique forum designed to exchange information and ideas of mutual global concern in an informal setting with our key partners. I had the pleasure to host one of those meetings in Canada in 2005.

Our office also worked closely with other agencies and councils to outline a new governance framework for our science advisory apparatus. We also commissioned a paper that showed how other countries function effectively with a solid combination of high-level science advice from a science advisor, coupled with input from a science advisory council.

● (1120)

[*Translation*]

One of the significant achievements of our office over the last four years has been the development of a unique capacity in Canada to undertake science and technology foresight.

[*English*]

—that is technology foresight—

[*Translation*]

looking over the horizon for future opportunities and challenges.

[*English*]

I could go on and give you many other areas where my office has made a contribution, but this will have to suffice.

In mid-2006 our office was moved from the PCO to Industry Canada, with the science advisor then reporting to the Minister of Industry. The mandate letter from the former industry minister circumscribed our activities to three areas, so with a diminished mandate, the scope of our work was reduced and our office became increasingly marginalized, and despite our expressed interest in contributing, we had relatively little input to the crafting of the S and T strategy and were not asked to participate in the consultations that took place across the country.

The frustration of all this has been that while my office has lots of knowledge and insights to offer, we have rarely been asked to play an important role and contribute as a true partner. Through all of this, I have tried to maintain a policy of professionalism, public engagement, and partnership with all key stakeholders, be they domestic or international.

Over the course of the past four years I and my staff have given well over 300 talks, presentations, and papers on key issues as well as on the Canadian advantage in research and innovation. We have received countless visits and delegations from many countries seeking our input to the Canadian success stories and models, and I might say also they have been seeking our advice on key issues.

In my mind there is absolutely no doubt that science and technology are impacting our lives in ways that were unimaginable even a decade ago. Almost every issue before government has a science and technology element, and our economic and societal prosperity increasingly depend on it. In other words, there has never been a time in history when science and innovation are so important and when scientific input is so vital to decision-making.

[*Translation*]

I continue to believe that the need for sound, impartial advice to government on national and global issues and developments in knowledge has never been greater.

[*English*]

Other advanced and developing countries alike have recognized this need and have embedded a strong science advisory capacity, including a science advisor or chief scientist, at the very centre of government.

I have received a very large number of calls, e-mails, and letters from the concerned public about the decision to close the office, and I want to publicly acknowledge this support both from Canadians and international partners alike. They all agreed this has the potential to tarnish our image as a leading player in science and technology, and the fact that we've received such support only serves to underscore the need for a closer look at how we design our science governance systems as new issues emerge that will require sound scientific input.

We can certainly learn from elsewhere while keeping in mind our own national specificities, and most importantly, this exploration needs to be done in an open and consultative fashion.

Thank you for your attention.

**The Chair:** Thank you very much, Dr. Carty.

We will now go to questions from members. We'll start with the first round, which is six minutes.

We'll start with Mr. Brison.

**Hon. Scott Brison (Kings—Hants, Lib.):** Thank you, Mr. Chair, and thank you, Dr. Carty, for providing us with some time and insight on this issue.

When you were national science advisor during the period, did Prime Minister Paul Martin seek your advice?

**Dr. Arthur Carty:** Yes, he did on numerous occasions. He would sometimes phone me on a Saturday morning when I was on holiday. So yes, we did interact, and there was the opportunity to exchange views on science and technology.

**Hon. Scott Brison:** What sorts of issues did he seek your advice on?

**Dr. Arthur Carty:** One of the Sunday morning events was when he was at the G8 heads meeting, and I think that was in Gleneagles, Scotland. It wasn't anything to do with that, it was about an article that appeared in *Science* on Genome Canada and the problems with matching funding as seen by the scientists. This was very critical of Genome Canada, and he wanted my views on that, which I gave, and subsequently he wrote an article to *Science* on the issue.

● (1125)

**Hon. Scott Brison:** Did you discuss climate change and policy around climate change?

**Dr. Arthur Carty:** Not specifically, not in any detail, and I wasn't asked to take that on as an issue.

**Hon. Scott Brison:** You mentioned the issues around genomics. Are there any other pertinent science issues that you discussed?

**Dr. Arthur Carty:** He was very interested in bringing Canada's expertise and resources in science and technology to bear on the problems of the developing world. I mentioned that briefly and reflect it in my speech.

**Hon. Scott Brison:** Did Prime Minister Harper seek your advice?

**Dr. Arthur Carty:** No.

**Hon. Scott Brison:** At no point did he contact you?

**Dr. Arthur Carty:** No point.

I want you to remember, of course, that my mandate was transferred to the Minister of Industry during the first year.

**Hon. Scott Brison:** Does science and decisions involving science, in your view and in your experience, affect all or most departments?

**Dr. Arthur Carty:** Yes, I think they do. Of course, we have a group of departments and agencies called science-based departments and agencies, which are particularly departments that carry out research and have science-related activities. Even an organization like Transport Canada would have science issues. I think science comes these days into almost every issue government has to deal with.

**Hon. Scott Brison:** Whether you're in the Department of Health or whatever.

What was the rationale to move your office to Industry and away from the top political decision-maker in the country, the Prime Minister?

**Dr. Arthur Carty:** There are certainly issues of machinery to consider. While a good interaction with the Prime Minister is important, it isn't actually the Prime Minister who brings issues to the cabinet table; it's a minister. I think you need access to both the Prime Minister and the minister, who can then take issues that you've developed along that. It was felt that this would help.

**Hon. Scott Brison:** We've established as a country the Science, Technology, and Innovation Council. Some other countries have both a national science advisor to the prime minister or president as well as a science, technology, and innovation council.

Could you give us some samples of some of those countries and how it would work? It strikes me that the leader of the country needs that independent, direct advice, but there are also synergies potentially with a separate council that advises the whole of government on issues more granularly.

**Dr. Arthur Carty:** Yes. In the G7 group of advanced countries, the United States has a science advisor to the President, John Marburger. The United Kingdom has a chief scientist, David King, who retired at Christmas and has been replaced by John Beddington. Australia is not in the G8, but Japan has a science advisor.

Your question is, how does it work? All of those countries also have an advisory council, so it's the combined effort of those two advisory capacities, which I think is important and powerful. Why do I say that? For example, I think it's essential that the national science advisor or the chief scientist has the ear of the Prime Minister but also is able to interact with the science advisory capacity in the country more generally, and from a council particularly. It is the combination of those two things. The science advisor can give instant counsel and advice on an issue that may not be large enough to stimulate a discussion, a review, or a particular study.

● (1130)

**The Chair:** Thank you, Mr. Brison.

We'll go to Madame Brunelle.

[*Translation*]

**Ms. Paule Brunelle (Trois-Rivières, BQ):** Good day, gentlemen.

My questions are along the same lines as those of Mr. Brison. In the past, you reported to the PCO. Therefore, you had the ear of thePrime Minister, so to speak. Then, your office was moved to Industry Canada. Was this move a signal that science was relatively unimportant to Canada or, in your view, was everything going just as smoothly as before and there was no problem?

**Dr. Arthur Carty:** Mr. Chairman, I will answer the question in English, for the sake of clarity.

[*English*]

As a correction, I actually was president of the National Research Council, which is the government's department that is really the principal R and D arm of government. Prior to that, I was an academic. So I have had short periods in industry, but my experience has largely been academic and government.

Can I ask you to repeat the second part of your question?

[*Translation*]

**Ms. Paule Brunelle:** Does your office's move to Industry Canada reflect the fact that science is less important? I understand that several countries have a special advisor assigned to the Prime Minister's Office.

[*English*]

**Dr. Arthur Carty:** Certainly that would be the interpretation that many members of the science community would have taken, that it was a down-step or a downgrading of the function.

One other thing I'd say here is that I think it is very important these days that our leaders express an interest in science and are committed to it. If that doesn't happen, then what does it say about the rest of the country? I think that is important. It's subtle, but it gives a message, though, that there's a leadership and vision.

[*Translation*]

**Ms. Paule Brunelle:** I want to talk about the creation of the Science, Technology and Innovation Council. If I understand correctly, the Council is composed of 18 people from various sectors, including university academics, business leaders and public servants.

What assurances do we have that the 18 STIC members will have the same ability to think independently as they did under the NSC?

[*English*]

**Dr. Arthur Carty:** Let me say that, first of all, I've mentioned the need for both a science advisor and a council.

As far as STIC is concerned, I'd say a number of things. First of all, the membership includes some prominent people in the research community—three Canada research chairs, four university and college presidents, presidents of private sector corporations, and three deputy ministers of the federal government. So in total that's an impressive group of people. STIC has only just started its work, so we'll have to reserve judgment on its effectiveness until we see the results of their work, but it is an eminent body, no question.

As I said, in many advanced countries the capacity and capability to provide non-partisan, independent advice comes from a science advisor—a chief scientist—and a council. I also point out that the science advisor should have the ear of the prime minister or the president and can be called on for rapid counsel and advice, or to undertake an investigation and a study on a whole range of critical issues—BSE, bird flu, pandemics, etc., or even climate change.

So in my view, and answering your question, it's unlikely that STIC will be able to fulfill all the demands for both immediate and long-term independent and transparent advice for the following reasons. First, it isn't really an arm's-length, independent body. Three of the members are deputy ministers in the government. In one sense that might be good, because you're getting the government perspective in there, but it does raise a question about whether it would be independent.

STIC doesn't report publicly, and its reports, as far as I know, will not be made public, nor might they be made available to Parliament.

Members of STIC, as with all advisory councils, are part-time people. The national science advisor and his office are full-time employees. So you have a bit of a difference there.

I'd say also that the modus operandi of STIC, which is studying selective topics that are obviously of interest to government and then reporting to the minister and the cabinet, is remarkably similar to the way the previous Advisory Council on Science and Technology operated, and ultimately that turned out not to be very successful.

So there are just a few points—pluses and minuses—I'd say about STIC.

● (1135)

**The Chair:** *Merci, madame Brunelle.*

Mr. Stanton, please.

**Mr. Bruce Stanton (Simcoe North, CPC):** Thank you, Mr. Chair.

Good morning, Dr. Carty.

I want to start by saying, as a matter of context, that one of the responsibilities we have here as parliamentarians is to be conscious of the value that is received for the public dollars we invest in various offices and programs.

I note that your office budget in the last fiscal year crept up on $815,000. It was forecast to be over $1 million this year. I also take note of the fact that in the last four years, on average, your expenditures on hospitality and travel crept up about $100,000 per year. That's coming up on 12% or 13% of your total budget.

And looking at some of the details, in addition to the mid-$230,000—I'm not sure what your actual salary is, I don't have the specifics, but the salary category is between $222,000 and $262,000—this is a big expenditure.

You've had extensive travel and expenses submitted for this office, and yet you indicate in your remarks that your office was inadequately funded and staffed. Dr. Carty, from what I see, wouldn't you take some responsibility for making sure that things like travel expenses are kept more in line so you would have more dollars available for this office?

**Dr. Arthur Carty:** That's an interesting comment. One of the principal elements of my mandate, specifically designated by the Minister of Industry, was being an international ambassador for science and technology, understanding and knowing about international developments in science and technology, being Canada's representative at the G8 Carnegie meetings, which are held twice annually.

So there's no question that I have done a lot of international travel. The Department of Foreign Affairs and International Trade has used my office extensively. I would honestly say those have been very worthwhile expenditures that couldn't have been possible without our commitment to an S and T ambassadorial role.

**Mr. Bruce Stanton:** Dr. Carty, in 2004 you dinged the taxpayer for $3,000 for tickets to—

**Hon. Scott Brison:** Mr. Chair, in respect for—

**Mr. Bruce Stanton:** I have the floor, Mr. Chairman.

**Hon. Scott Brison:** The pejorative term, when we have a witness, "you dinged the taxpayer".... You're talking about $100,000 a year in expenses. Most members of Parliament spend more than that—

**The Chair:** Mr. Brison, if you want the floor, you can make a point of order, but you cannot interrupt another member's questioning.

Is this a point of order?

**Hon. Scott Brison:** May I make a point of order?

**The Chair:** A point of order.

**Hon. Scott Brison:** We have a responsibility when we have witnesses not to use pejorative language to attack them and not to create straw man arguments that are not intellectually honest. Most members of Parliament spend far more than $100,000 a year on travel and hospitality. To use the term "dinging the taxpayer" for somebody who served as head of the NRC for 10 years and is a member of the Order of Canada, who has served the country.... To be attacked like this by a member is not appropriate.

● (1140)

**The Chair:** Thank you, Mr. Brison. That is not a point of order. That is a point of debate.

**Dr. Arthur Carty:** Mr. Chairman, can I make another point here?

**The Chair:** The member has the time.

Mr. Stanton, it's your time.

**Mr. Bruce Stanton:** Dr. Carty, I appreciate your last comments. I wonder how you might reason that an expenditure of some $3,000 to attend an opera soirée fits into the kind of expenses that would be suited to this office. In addition, I see several expenses in here—this is going back to shades of David Dingwall—charges of 87¢ for a cup of coffee, individual expenses that clearly in an office and in a position of your stature become rather paltry expenses, and you still continue to put that on the public tab. Can you explain that?

**Dr. Arthur Carty:** Can I just ask which expenditure of $3,000 you're referring to? I do attend the opera with my wife, but my office has never spent $3,000 on Opera Lyra.

**Mr. Bruce Stanton:** As a matter of the travel and hospitality expense report submitted by your office on February 21, 2004, opera soirée, without a lot of detail—

**Dr. Arthur Carty:** I'm sorry, but I was not national science advisor in February 2004.

**Mr. Bruce Stanton:** These were the expenses that were submitted. They were part of the public record, I assume, in the course of your work with the National Research Council. How would an expense like that fit into your mandate?

**Dr. Arthur Carty:** This has nothing to do with the national science advisor. I don't know if it's a question I can answer in the context of NRC, but it's irrelevant here, I think.

**The Chair:** If you want to carry on, go ahead.

**Mr. Bruce Stanton:** Let me carry on.

**Hon. Scott Brison:** Mr. Chair, on a point of order, this has nothing to do with the actual mandate Dr. Carty had as national science advisor.

**Mr. Bruce Stanton:** Mr. Chair, if I could, this has everything to do with the role of this individual in the course of his work on behalf of the Government of Canada, in the roles that we're concerned with here. These are expenditures and commitments that have been made by this office and they are a matter of public record. In the course of this presentation that we've seen this morning, rationalizing the kinds of expenses that are on the public tab, Mr. Chairman, should in fact be queried against the assertions that Dr. Carty has made. That was my point.

**Hon. Scott Brison:** Mr. Chair, the Prime Minister, when asked a question on Dr. Carty, actually said in the House of Commons that Dr. Carty was "an eminent Canadian who voluntarily took his retirement".

The fact is, Mr. Chair, that Mr. Stanton, by going into a completely separate mandate that Dr. Carty has had, which has no relevance on his efficacy or responsibility as national science advisor, is conducting a witch hunt to try to distract the committee from the issue at hand, and that is the efficacy of the role of the national science advisor and the importance of that role.

**The Chair:** Thank you.

I'm going to remind members what the actual motion was:

> That the Standing Committee on Industry, Science and Technology study the Government of Canada's decision to phase out the position of National Science Advisor; that the committee invite Dr. Arthur Carty, National Science Advisor to the Government of Canada, to immediately appear before the Committee; and that the Committee report to the House its findings, conclusions and recommendations.

Mr. Stanton, my understanding was that you were moving on to another topic.

**Mr. Bruce Stanton:** I'll confine my remarks to those that involve the—

**The Chair:** The Office of the National Science Advisor.

**Mr. Bruce Stanton:** —Office of the National Science Advisor, which commenced, as I understand, from May 2004 on. I'll go back to my question.

In terms of the responsibility we have for value for public investment, and I would say again on average you have $100,000 of travel and hospitality, 13% of your budget, including numerous items, which are very small, very minute. I wonder how you can rationalize those types of expenses against the kinds of assertions you made, up to and including, by the way.... I mean, in the position you're in, would it not be perfectly proper to take a question from the Prime Minister over the phone, even if you did happen to be on holidays?

● (1145)

**Dr. Arthur Carty:** Sorry, could you say that again?

**Mr. Bruce Stanton:** I mean, you have said with some dismay that you—

**Dr. Arthur Carty:** Not with dismay. I didn't say it with dismay. It was a fact of life that I worked weekends and I worked on holidays too.

**Mr. Bruce Stanton:** Why do you submit expenses for cups of coffee and lunches, a $1.47? These are small items, Dr. Carty.

**The Chair:** Okay, put your question, Mr. Stanton. We're out of time here.

**Mr. Bruce Stanton:** Well, I thought I did, Mr. Chair. I mean, perhaps could he just rationalize this 13%.

**The Chair:** Okay, Dr. Carty, please respond.

**Dr. Arthur Carty:** Perhaps I could add some information that might be relevant here.

With regard to the budget and the staffing of my office, there are offices of national science advisors and chief scientists around the world. In the United Kingdom, Sir David King, in his office, had a staff of 120 people, and I haven't bothered to ask what his expenditures are, but I can tell you that it's multi-millions of dollars. Jack Marburger in the United States has a staff of 60 people and similar expenses.

The fact of the matter is that with an international mandate my office was hosting international visitors. In fact, you can't not provide coffee and donuts and the occasional meal for international visitors.

**The Chair:** Thank you, Mr. Stanton.

We'll go to Ms. Nash, please.

**Ms. Peggy Nash (Parkdale—High Park, NDP):** Thank you, Mr. Chair.

Good morning.

We've had a lot of discussion at this committee, because it is the industry committee, about our economy, competitiveness, and globalization. Certainly there are some who believe that in order to position ourselves best for the future it's a matter of perpetual tax cuts and lowering labour costs. It seems to me that the importance of science is often overlooked, not only in positioning our economy but in positioning our country in the world and in the 21st century economy.

You said in your remarks that your office was underfunded, that you had no permanent staff initially. After spending a lifetime in science and research, what do you think would be the best approach a government could take to really take advantage of the investment that it has made in training skilled people in various fields of science, in order to take best advantage of that knowledge to position our country for the future?

**Dr. Arthur Carty:** Well, you asked a very broad question and completed it with a question about how we best tackle the issues of economic and societal benefit through whatever means. I have my own views about the combination of factors and the combination of investments that would help do that.

There's absolutely no doubt in my mind that investing in science is absolutely crucial and that Canada has a real opportunity. We have invested very heavily. We've reached the highest position in the G8 in terms of per capita investments in university research. It's very important that this capacity that is being built up is maintained and built upon and not just sustained, that we take advantage of it and move further. We've brought really highly qualified people into the country through a number of measures. We've invested in infrastructure. The overall capacity is significantly greater now than it was in the late 1990s. That is an opportunity to take advantage of, to continue to invest heavily for the future.

Now, the other side of it is that, of course, that's not everything. Investing in knowledge—knowledge generation—is only a part of the equation. You need to think about industrial innovation, the strength of the industrial side of your economy, and how best to get that on an even keel and to create a competitive advantage. That is more difficult. It's a combination of things such as reduced taxes, support for R and D tax credits, all of the measures that this country and others have taken, but improved. For example, I think that in the SR and ED tax credits one can have tax credits that are a positive in the sense that they might reflect an increased investment in university-industry collaborations, for example, or there might be incremental credits that could be added to a company that invests more in R and D a year ahead.

There are certainly many things one can do. It's a difficult question, and not many countries have actually solved this problem. I agree with you that there are some measures that could be taken, and I agree with you on the primacy of investing in the science enterprise.

● (1150)

**Ms. Peggy Nash:** Do you think we've lived up to our potential in terms of giving science a value-added piece to our economy that investing in science can bring? Do you think we've really lived up to our potential here?

**Dr. Arthur Carty:** Well, if you go back 20 years, Canada was very much a resource-based economy. Now we're in a resource boom at the moment, so that is still apparent. Then you look further and find that we have a knowledge-based economy. We have, for example, a vibrant aerospace sector. We have the second-largest biotech sector in the world by number of companies.

**Ms. Peggy Nash:** Can I ask you something on that? Yesterday we had hearings on the sale of MDA, and we had a discussion about the fact that we have no space policy, for example, and here we have our largest and most important aerospace company, one that's taken advantage of tax credits and grants and investments, and this technology now all moving to the United States. Regardless of whether or not we'll get data from the current investment, it makes one wonder about the future of space policy and investment and the potential for missed opportunities in the future in that sector.

**The Chair:** Thank you.

**Dr. Arthur Carty:** Well, MacDonald Dettwiler is...sorry.

**The Chair:** Yes, final question.

**Dr. Arthur Carty:** MacDonald Dettwiler is a space company primarily, and now a very valuable one because it's a knowledge-based company. It would be sad to lose it, but there is a marketplace that has to play a role here, so I wouldn't say that I would be all for interfering in every takeover that ever came around in Canada. That wouldn't be good either. This issue has to be approached very carefully, with wisdom and foresight.

**The Chair:** Thank you, Ms. Nash.

We'll go to Mr. Simard, please.

**Hon. Raymond Simard (Saint Boniface, Lib.):** Thank you very much, Mr. Chair.

Thank you for being here, Dr. Carty and Monsieur Dufour.

On January 30 in the House of Commons, Minister Prentice said that Dr. Carty is a respected Canadian “whom I hold in very high regard”. I think we should take him at his word for that.

Dr. Carty, I'll come back to the sale of MDA, but I'm trying to find out what ministers would consult you on. What kinds of issues? I notice in your biography that you're also on the board of the Canadian Space Agency. Is that correct?

**Dr. Arthur Carty:** I was, in fact.

**Hon. Raymond Simard:** You were. It would seem to me that you would be one of the first people I would want to consult in terms of whether or not we should let this deal go through. Is that the kind of thing that Minister Prentice would consult you on? Has he consulted you on it?

Can you tell us very, very briefly what you think? I know you just touched on it, but do you think this is a good deal for Canada or not?

**Dr. Arthur Carty:** If Minister Prentice wanted my view, I'd try to give it, but I wouldn't claim to be an expert in this area. I have a view from the scientific perspective, but I am not a businessman, so I'm not sure that I'd be the best person to consult on that particular issue. If I were asked, what I would do is pull together a group of experts who were capable of putting together an analysis and assessment of the Canadian Space Agency's program, or the MacDonald Dettwiler situation.

I would emphasize that a national science advisor or chief scientist can't be an expert in everything. I did say that. Therefore, you have to depend on the community to do that. Minister Prentice may feel there are other parts of the community that are capable of giving that advice.

● (1155)

**Hon. Raymond Simard:** What did prime ministers do prior to this office being created? Who did they consult? Was there anybody they could go to?

**Dr. Arthur Carty:** I'd just say that it was the strong feeling that because there wasn't an office it had to come into being, because they were missing something. Of course, science advisors from other countries have been in Canada and provided advice too, and at least two of them have recommended to the government that there be a national science advisor.

**Hon. Raymond Simard:** You seem to know the other science advisors from other countries on a first-name basis, so I'm assuming it's a very close-knit community.

I'm just wondering about the possible damage this has done to our country. We all know the importance of science and technology in Canada's future, and every country's future. It would seem to me that these people here.... When they're responding to you, are they saying this is ridiculous, that Canada should not be getting rid of its science advisor at a time when, as a matter of fact, it is probably one of the most important things we should have?

**Dr. Arthur Carty:** I have to say that a number of those people have expressed surprise and disbelief, yes.

**Hon. Raymond Simard:** Organizations like Genome Canada.... I believe that's Dr. Henry Friesen?

**Dr. Arthur Carty:** No, Henry Friesen is no longer the chairman of the board. It's now Cal Stiller from the University of Western Ontario, and he's a long-standing medical scientist and entrepreneur. The president is Martin Godbout.

[*Translation*]

**Hon. Raymond Simard:** It's Martin Godbout.

[*English*]

So my question is, do you work with an organization like Genome Canada or CIHR, with the heads of these organizations, on a consistent basis in terms of sharing information, or not necessarily?

**Dr. Arthur Carty:** No, of course I know all of these people on first-name terms, but I go further than that. During the first part of my time as the national science advisor, I created a committee of presidents of councils and agencies—research agencies. That would include NSERC, CIHR, the Space Agency, NRC, SSHRC, CFI, and Genome Canada. We met regularly to discuss issues and take on projects. I thought that was a very effective way of getting people, first of all, to share information that they hadn't shared before. Bringing them together, convening this, was by itself a very positive thing.

**Hon. Raymond Simard:** I have thirty seconds and I'd like to get one last question in.

You mentioned earlier on that Foreign Affairs used your office extensively. Are there other departments that would consult with you on a regular basis—for instance, Agriculture, or anybody else?

**Dr. Arthur Carty:** Yes. I have lots of things I could tell you, if you want.

**Hon. Raymond Simard:** Could you name a few departments that did work with you?

**Dr. Arthur Carty:** Well, for example, Natural Resources Canada. I and one of my staff, Kevin Fitzgibbons, spent a fair bit of time appearing with NRCan to talk about the government's positioning within Canada's natural resources and sciences innovation system.

I'll just quote from this letter I received. It reads: “I would like you to know that your contributions and recommendations are one of the cornerstones upon which our department will chart its future directions. ”

There you go. So we've worked with Agriculture and Agri-Food Canada, Environment Canada—

**The Chair:** Thank you.

Thank you, Mr. Simard.

We'll go to Mr. Van Kesteren, please.

**Mr. Dave Van Kesteren (Chatham-Kent—Essex, CPC):** Thank you for coming, sir. I've read your resumé. It's very impressive. I want to let you know that I have the highest regard for your credentials.

Why did you leave the position as an eminent scientist and take on a job as national science advisor when you knew, and it was obvious, that the office was underfunded?

**Dr. Arthur Carty:** Well, that's a good question.

First of all, I'd say the scientific community really welcomed the creation of this position. They were literally convinced this was the right thing to do. We hadn't had a science advisor in many years in Canada. This was in fact the first national science advisor, and the community was very much behind this. And of course, it was a prestigious position, reporting as it did to the Prime Minister. I think that anybody in my position—most high-profile scientists around the country—would have jumped at the opportunity to do this. So I didn't hesitate.

● (1200)

**Mr. Dave Van Kesteren:** You see, here's the problem. We talked about this at the last meeting too. We're in a position as a government where we spend millions and then even billions of dollars on projects that for the most part most people haven't got a clue about. I'm talking about science and technology. We just trust those who are in command. As government, we have to take charge of the public purse, so we have to look at these things.

I'll just give you an example, and I don't know if you want to comment on this. But to the average layman.... On page 7 of your presentation, you say the Council of Canadian Academies, as it is now called, is operating with a $30 million endowment. We're wondering about what kind of value we are getting for our buck. It's great to do this stuff and it's great to have these.

Sir, I have to just go back to this. Again, the average Canadian is going to judge—because he has absolutely no idea of what you're involved with and the work that you're doing—the value for the money on things like Mr. Stanton was talking about. I looked at this too. I have to tell you, frankly, I'm shocked at some of these expenses.

I want you to comment on that. I know Mr. Stanton was criticized for bringing that up, but I just feel that's something that has to be—

**Hon. Scott Brison:** Mr. Chair, on the same point of order, Mr. Stanton was referring to expenses when Dr. Carty was head of the NRC during a ten-year period.

**Mr. Dave Van Kesteren:** Is this a point of order, Mr. Chair, or is this an interruption?

**Hon. Scott Brison:** This has absolutely no relevance to the discussion of the future of the role of the national science advisor or its office.

I may add that in a December 13 letter Minister Prentice said, relative to Dr. Carty's role with the NRC:

> ...may I assure you that your vision and leadership at NRC continues to contribute to the government's Science and Technology Strategy and efforts to improve Canada's capacity to innovate and prosper.
>
> Furthermore, you have made significant and valuable contributions to Canada's international agenda, and have built a strong and well-respected Canadian presence at such forums as the G8 Carnegie Group and the Canada-India Joint Science and Technology Committee. Thank for your leadership and dedication to the public service of Canada.

He's talking about the NRC, not the mandate of the committee.

**The Chair:** Mr. Brison, I get your point.

Mr. Van Kesteren, I remind you that we are dealing with Dr. Carty's term as national science advisor.

**Mr. Dave Van Kesteren:** Mr. Chair, the point I'm trying to make is that if the government is to be criticized for eliminating this post and possibly seeing a better vehicle, the obvious course of action for the government to take is to ask those questions. I think it's relevant.

**The Chair:** Mr. Brison, I've directed Mr. Van Kesteren to limit his questions.

**Hon. Scott Brison:** I appreciate that and your fairness in that regard. But if the government really wants to pursue this kind of vendetta against science, as it did with Linda Keen, they're welcome to continue that sort of agenda and live by the consequences.

**The Chair:** Mr. Brison, you know that's not a point of order.

Mr. Van Kesteren, it's your time.

**Mr. Dave Van Kesteren:** I said at the outset that I'm very respectful of your position, and I recognize that you are a man who has very high credentials. I'm not criticizing that at all.

As a matter of discussion and public record, I think the Canadian public want to know what value they got for the money that was spent. A significant amount of money was spent.

**Dr. Arthur Carty:** I tried to give you some of that in the accomplishments and contributions we've made. Were you specifically referring to the Council of Canadian Academies on page 7?

● (1205)

**Mr. Dave Van Kesteren:** I guess I wasn't necessarily zeroing in on that specifically, but the vagueness of that...we need to have a little bit more accomplishment. Quite frankly, when we talk about part of the problem we've had in science and technology...the government had no direction, and that became evident at the last meeting too. There really wasn't a plan as to where we were going. Why was that? Were you underfunded? Why didn't you point the government in a direction where they could go?

**Dr. Arthur Carty:** On that specific issue I should comment on the Council of Canadian Academies, because there has been a long-standing recognition in Canada that we needed an organization that was capable of providing the government with the science base from which it could make its decisions. This is an organization that is perhaps similar to the National Academy of Sciences in the United States, or the Académie des sciences in France.

The fact of the matter is that we didn't have the Council of Canadian Academies or the Canadian Academies of Science, yet government had to make decisions every day that really required a consideration of science. How do you do that if you don't have an organization that can periodically and systematically do an assessment of the science involved in one of these issues and provide it to government?

**The Chair:** Thank you.

Thank you, Mr. Van Kesteren.

Monsieur Vincent.

[*Translation*]

**Mr. Robert Vincent (Shefford, BQ):** Thank you, Mr. Chairman.

For several minutes, I've been hearing the Conservative members ask questions that are somewhat unrelated to our agenda. For instance, Mr. Van Kesteren asked earlier if, with the office of a national science advisor, consumers were getting their money's worth. We could turn the question around and ask the witness if, in his opinion, Canadians have been getting their money's worth since the Conservatives have been in office. I think we shouldn't stray too far from the issue at hand.

You've been the National Science Advisor since 2005. However, in the fall of 2006, your job was redefined and your office was moved to Industry Canada. In your opinion, what prompted the government to change direction so radically in the fall of 2006?

[*English*]

**Dr. Arthur Carty:** I tried in an earlier question to give a partial answer to that, but I don't know the full story.

Perhaps I can put it positively and ask what would be the most influential, the most useful role and structure that would most appropriately serve Canada in this, and I've already said a chief scientist or a science advisor, coupled with a science advisory board, is the way we should be going. I still would adhere to that view.

I don't know the full story of why the office was transferred, but certainly, to me, it is very important that the science advisor have the ear of the Prime Minister—or the President, as it is in the United States. In combination with that, you have access to an advisory committee, which is going to supplement the advice the science advisor gives. It doesn't make a lot of sense to not have the connection to the Prime Minister, nor does it make any sense to eliminate the office.

But what is the reason? I could only speculate on the reasons. I've given one possible suggestion earlier. That's maybe not a very satisfactory answer, but I can't really give you a satisfactory one.

[*Translation*]

**Mr. Robert Vincent:** In your opinion, might the reason why the government changed direction so dramatically be that its science and investment priorities in this area are not very tangible? The government would like to abandon the whole science niche on a national scale. Do you think that could have something to do with it?

● (1210)

[*English*]

**Dr. Arthur Carty:** At the time I didn't interpret it that way. Upon reflection on what's happened, I have to say that on the surface and superficially it appears this is what's happening.

[*Translation*]

**Mr. Robert Vincent:** Could personality conflicts have played a part in this?

[*English*]

**Dr. Arthur Carty:** I'm sorry?

[*Translation*]

**Mr. Robert Vincent:** Is it possible that since the fall of 2006, with the arrival on the scene of some new MPs, you were no longer viewed as the right person for the position of national science advisor? Do you think they had someone in mind to take over your job?

[*English*]

**Dr. Arthur Carty:** Perhaps to some people I didn't fit the job. It's quite possible that's the case.

Talking about the government's commitment to science, and I'm talking about the current government, one has to recognize the Prime Minister did announce a science and technology strategy in May 2007. That strategy, I think, by and large is a very good and useful strategy if it's followed. There are many strong points about that document, *Mobilizing Science and Technology to Canada's Advantage*.

It may be the Prime Minister felt, or the system felt, that a science advisor reporting to the Prime Minister wasn't the way to go, and this wasn't important.

**The Chair:** *Merci, monsieur Vincent.*

We'll go to Monsieur Arthur.

**Mr. André Arthur (Portneuf—Jacques-Cartier, Ind.):** Dr. Carty, do you remember being described by *Maclean's* magazine as one of the high flyers of Ottawa?

**Dr. Arthur Carty:** I'm sure some of that's happened, but I don't remember the specific thing you mention, no.

**Mr. André Arthur:** If you had seen it, would you have been horrified, surprised, disappointed, or just felt lucky that worse was not seen?

**Dr. Arthur Carty:** I'd have been flattered, I think, if they'd said that about me in the right way.

**Mr. André Arthur:** If they had said it in a way that, after seeing your expense accounts, they were kind of flabbergasted, what would have been your reaction, sir?

**Hon. Scott Brison:** Mr. Chair, on the same point of order, we're here to discuss the role of the national science advisor and Dr. Carty's input as a citizen as well as someone with significant expertise as a public servant in this area as to what that role ought to be. He's been extremely constructive. He has proposed that the role continue, along with a science and technology innovation council, not as either/or. He has been very constructive, and I cannot understand why we are engaged in a smear campaign of a public servant.

**Mr. André Arthur:** Let me explain, sir, on your point of order.

**Hon. Scott Brison:** For instance, I suspect most members of Parliament travel by the—

**Mr. André Arthur:** You go on and on and on. Nobody will be—

**The Chair:** One at a time.

Mr. Brison has the floor for now.

**Hon. Scott Brison:** I expect that most members of Parliament have travel budgets that exceed $100,000 per year. We have letters from Minister Prentice here referring to the international travel and the work Dr. Carty has done and the accomplishments on behalf of Canada.

**The Chair:** Okay, Mr. Brison, let—

**Hon. Scott Brison:** Not only is it intellectually dishonest, it is not consistent with the mandate.

**The Chair:** Mr. Brison, you have made your point.

Mr. Arthur, respond on the same point of order.

**Mr. André Arthur:** Mr. Brison says we are here to analyze the role of the national science advisor. That's exactly what I'm doing, except that I've chosen to take the angle of his role as an administrator of public funds, which he is.

**The Chair:** I'm going to rule on this.

● (1215)

**Hon. Scott Brison:** You're not regular—

**The Chair:** No, Mr. Brison, the chair has the floor.

Monsieur Arthur, on this issue, I'll repeat again what the motion actually says: "That the Standing Committee on Industry, Science and Technology study the Government of Canada's decision to phase out the position of National Science Advisor." This is related to Dr. Carty as the national science advisor. Now, if there is an issue with his expenses as the national science advisor, that is relevant to the motion.

With respect to your questions, you're really testing the bounds of relevance unless you relate them to his position as the national science advisor.

**Mr. André Arthur:** Allow me to proceed then.

It is quite evident, Dr. Carty, that your organization and your functions were not properly funded from the start. You didn't get enough money, you didn't get enough staff, and that has nothing to do with the change of government. It was like that from the start.

Yet on October 15, 2004, you hosted a lunch for deputy ministers, for which you charged $919.02. You did the same later and charged $1,200.35. On November 24, 2004, it's $1,487.50 that you charged to your—

**The Chair:** On a point of order, Monsieur Vincent.

[*Translation*]

**Mr. Robert Vincent:** On a point of order, Mr. Chairman. The same thing is happening again. The purpose of today's meeting is not to examine spending or explore what happened here from a financial perspective.

[*English*]

**The Chair:** One at a time.

Monsieur Arthur, is this related to Dr. Carty with respect to his time as national science advisor?

**Mr. André Arthur:** Yes, as the national science advisor he hosted lunches for deputy ministers, and he paid for those lunches.

**Hon. Scott Brison:** How many deputy ministers—

**The Chair:** Mr. Brison, you don't have the floor.

**Mr. André Arthur:** My question was coming up.

**The Chair:** If it is related to Dr. Carty's time as national science advisor, then I'm going to allow it. If it's related to expenses when he was head of the NRC, then I will not allow it. If it is expenses in his time as national science advisor, I will allow the question.

**Mr. André Arthur:** On January 24, 2005, there was $1,340.40. On October 13, 2005, there was $1,465. If you have an underfunded situation, why would you pay for lunches for deputy ministers?

**Dr. Arthur Carty:** Can I answer that question?

I mentioned earlier that I had created two committees, as national science advisor. One was to bring together the presidents of councils and foundations and to have them discuss relevant matters of concern to them. The other group was a group of deputy ministers of science-based departments and agencies. I had permission from the clerk to do this, to bring them together again to discuss common interests, horizontal collaborations, how we could better work together. In fact, most of those dinners were held at night because that was the only time we could find deputy ministers available, because they were very busy during the day.

So that was good value for money, Mr. Chairman. The others can be seen in exactly the same light.

**The Chair:** Mr. Arthur, you have two minutes.

**Mr. André Arthur:** You earn a salary that's somewhere between $222,000 and $262,000. I won't ask you how much you earn—only if you want to volunteer the information. Then you go out and you do your job. You do your job, with pencil in hand, to be able to charge to the Government of Canada most things that you pay. You couldn't pay a breakfast on June 24, 2004—little things like 87¢ for coffee or refreshments.

What kind of scope does that mean you have? As a public servant, as one of the most important members of the science institutions of Canada, is that the message you're giving to other public servants, that once you have an expense account, 87¢ is good enough and you can charge that?

Could you explain that to me, Mr. Carty?

**Dr. Arthur Carty:** Well, one has to meet people. Breakfast is often a good way, at 7 a.m., to meet a key person who is not available elsewhere.

In terms of an 87¢ coffee, I have always, as far as I can tell, paid for my own coffee. I go down and buy my own coffee every time in the morning. If there are other guests who want coffee, yes, it might be charged to my account.

I have never overcharged the government for anything. In fact, I avoid—I *avoid*—charging per diem. I will never accept a per diem in an instance where, for example, a dinner is provided.

I think I've been honest and above board in all of this. None of these things are ridiculous expenditures.

● (1220)

**The Chair:** Thank you. Your time's up, Mr. Arthur.

We'll go to Ms. Nash, please.

Ms. Nash has waived; we'll go to Mr. Brison.

**Hon. Scott Brison:** Thank you, Mr. Chair.

Dr. Carty, I want to apologize to you on behalf of this committee. The fact is that our committee voted to have you appear before the committee in order to better determine what is the best direction for the role of the national science advisor and its potential synergy with the Science, Technology and Innovation Council, and how, in broader terms, that fits into a general science strategy for our country.

You're somebody who has served as a senior academic for 27 years, ten years heading the NRC. Having been our national science advisor, you have a lot of information and knowledge and expertise and perspective to bring to that.

Some of us wanted to hear that perspective and to benefit from that. Others—who as members of Parliament have expenses that in most cases have exceeded yours, and in all cases do not have the same level of transparency around their travel or hospitality expenses or the same need to disclose that you as a public servant have had—have hidden behind that veil and that hypocrisy to attack you unnecessarily and unfairly.

So I apologize to you, Dr. Carty. It's difficult to get good people and to retain good people in the public service, and parliamentarians have a responsibility to not debase public servants further. When they want to provide good advice to a committee, or good advice based on science to a Prime Minister, we ought to encourage that. We should not be attacking our institutions, as it further reduces the capacity for our government and our public service to function together for the betterment of all Canadians.

Dr. Carty, on the role that you see for the national science advisor and the synergy with the government's strategy relative to the Science, Technology and Innovation Council, you've said that you see a synergistic role between the two. You've indicated that some other countries are in fact pursuing that kind of role.

Do you see a commercial value to Canada on the research and development and commercialization, for instance, of clean energy and clean environmental technologies? Some people have indicated, and some experts have indicated, internationally and within Canada, that this could be one of the fastest-growing areas of the 21st century economy. We have a job, as a committee, to try to understand the role between research and development, commercialization and competitiveness.

Do you see that as one of the areas we should be focused on as a country, trying to position ourselves in the whole area of clean tech—environmental technologies and clean energy?

**Dr. Arthur Carty:** Yes, I would share your optimism on that, for a number of reasons: first of all, because Canada has a base of expertise in its institutions—in the universities and government labs and in the National Research Council—in many of these areas; and because there are some innovative Canadian companies, innovative small companies as well as larger ones, in the area.

For example, in biofuels we have a very innovative company here in Ottawa called Iogen Corporation, which is a cellulose ethanol company. There's another company called Lignol Energy Corporation, which is using forest biomass to produce bioproducts. We have a lot of experience in Canada in carbon sequestration and storage and using carbon dioxide to recover oil from spent oil fields. That's in the Weyburn project in Saskatchewan, which is an example to the rest of the world. In that sense, we have a number of companies that have shown leadership. Another one is a company called ARISE Technologies Corporation, which is in the solar technology area.

So yes, it's an area of tremendous development and one where we can benefit.

I would also add something else, though. I really believe in the idea that regulation stimulates innovation and that you get innovation with good regulation. I've heard many CEOs at conferences pointing out that they need a road map so that they can then innovate and drive change.

● (1225)

**The Chair:** You have 20 seconds.

**Hon. Scott Brison:** Dr. Carty, could you provide the committee with your mandate letter from Minister Bernier? You said earlier that in fact the role was limited, from your role advising the Prime Minister. I think it would be helpful to know that.

I learned of the elimination of the role of science advisor actually at Davos, at the World Economic Forum conference.

**The Chair:** The question, Mr. Brison? Your time is up.

**Hon. Scott Brison:** This is an international issue, Mr. Chair, and I'd appreciate the views of Dr. Carty on what impact the elimination of the role has on our branding in the area of science internationally.

**The Chair:** Dr. Carty.

**Dr. Arthur Carty:** I mentioned that some of my colleagues were surprised and upset about the turn of events. Whether that is a continuing concern will, I think, depend on how things evolve. If our government invests significantly in science and technology in the years ahead, we can undoubtedly remain a leader. The science and technology strategy points the way forward in that regard.

There are, I think, negative consequences of eliminating the position. I don't say that simply because I want it; I am not speaking personally. I just believe that philosophically we should have a national science advisor.

**The Chair:** Thank you.

Thank you, Mr. Brison.

We'll go to Mr. Carrie, please.

**Mr. Colin Carrie (Oshawa, CPC):** Thank you very much, Mr. Chair.

And thank you very much, Dr. Carty.

I note that you've said from day one that your office has been inadequately funded and has had no permanent staff other than you yourself. We have been criticized for terminating your office, but what the government is trying to do is provide an office that can give them substantive policy advice to move the entire agenda forward.

I'd like to quote from *Research Money*. A gentleman named Mark Henderson wrote this. He said:

> The role of the NSA was hamstrung from the beginning due to a minuscule budget, a vague mandate and the lack of a reporting mechanism to Cabinet. Several have criticized Carty for failing to negotiate a clear mandate before accepting the position. Indeed, Carty told *Research Money* in early 2005 that he was seeking a clarification and strengthening of his mandate from Paul Martin, but nothing came of the attempt.

And he quotes you as saying, “There are a lot of expectations being put on this office but without any mechanism for inputting policy advice to the highest levels, I'm not going to be very effective”. That's what he has quoted you as saying.

So I think there's a realization that with your office there were some challenges.

The government has put together STIC. From what you've said today, it almost sounds like what you're recommending. We have Dr. Alper, who is chairing it, with 17 other people in the council giving him advice—prominent people.

You seem to be criticizing STIC as not being independent because it has three DMs, but we've also heard that you had a committee of DMs under you. Do you feel that your office alone could give better advice to a minister or a Prime Minister than STIC, which includes 18 other people, with Dr. Alper as the chair?

**Dr. Arthur Carty:** That's just not true. I believe the two things are extremely complementary. They fulfill somewhat different roles, but they contribute to a balance of science advice going to cabinet ministers and the Prime Minister, which we need.

The science advisory community in Canada isn't exactly large. Why would we eliminate a piece of it?

**Mr. Colin Carrie:** I take your comment, but the way I look at it and I think the way the government looks at it too, is not necessarily eliminating; it's almost taking your exact advice, where you say you need somebody at the head. And this is where Dr. Howard Alper comes in, with 17 other prominent scientists and people to advise him. You seem to criticize them for not being arm's length, but—

● (1230)

**Dr. Arthur Carty:** No, I'm not criticizing STIC. STIC has only just started its work. There are eminent people on it, and it may well produce some excellent advice, but that won't be all the advice that's needed.

**Mr. Colin Carrie:** What I'm saying, though, is this. With your office as an under-funded office, with you yourself as the only regular employee, are you saying your office would have been better to continue with that than to go with this new direction? I did write down that you said it wasn't arm's length, that it may not be independent, that you're going to have to reserve judgment on its effectiveness. But even you, as a public servant, sir, how are you more independent than this council would be?

I'm not quite getting where your criticism is coming from. Could you explain that?

**Dr. Arthur Carty:** The question of independence will have to be proved. STIC doesn't report publicly; it reports to cabinet. Its reports are not necessarily going to be public knowledge. The high end of a national science advisor is to provide sound, non-partisan, unbiased, independent science advice, and the reporting mechanism should provide for that.

As I say, the two things should be complementary. You have to remember that prior to STIC there was the Advisory Council on Science and Technology, and before that the National Advisory Board on Science and Technology, and before that the Science Council. So we have a history in Canada of experiments in science advisory—

**Mr. Colin Carrie:** We're trying to get it right. We've had a lot of experiments, and I do believe STIC will report. They will be reporting through the state of the nation.

When your office was set up, it was to report directly to the Prime Minister. Did you have agendas for the meetings, how often you met with the Prime Minister in official meetings, what policies you were giving him directly, and was that made public through reporting? Do you have those records of how many meetings you had with the former Prime Minister? Can you give us an idea?

**Dr. Arthur Carty:** I probably do, but they were more informal. Prime Ministers are very busy. You know that.

**Mr. Colin Carrie:** But how many formal meetings did you have to tell the Prime Minister about the policy directions you'd like to see this country move ahead with? Was it five, was it 10, was it 20, once a year, twice a year or—

**Dr. Arthur Carty:** In my statement I've tried to outline some of the things where we made a major contribution in influencing government decisions. That's how it was done. I would engage with the Prime Minister or with cabinet ministers to try to say to them, "This is an important issue, an important problem that Canada has to solve, and here's a way forward."

**Mr. Colin Carrie:** I heard you. But your criticism of STIC is that it's not going to be reporting regularly, yet you've brought the example that instead of a meeting, it was a telephone call over vacation. I'm just trying to see—

**The Chair:** Mr. Carrie, we're well over time here.

**Mr. Colin Carrie:** —where the criticism is.

**The Chair:** Mr. Carrie, you'll have another slot.

**Mr. Colin Carrie:** Okay, good.

**The Chair:** Thank you.

We'll go to Mr. Brison again.

**Hon. Scott Brison:** Thank you, Mr. Chair.

Dr. Carty, in his letter to you of December 13, 2007, Minister Prentice referred to your having built a strong and well-respected Canadian presence at forums such as the G8 Carnegie Group and the Canada-India Joint Science and Technology Committee. Could you explain the work at those kinds of forums and the impact and benefit to Canada?

**Dr. Arthur Carty:** I will take the last one first.

In terms of the Canada-India collaboration on science and technology, I am the co-chair with my counterpart in India, Dr. Ramasami. We have a joint committee that sets the direction for the collaboration. Actually, we'll be meeting in two weeks in India to go through the progress we've made and the prospects for the future. We'll set the stage for what's to come in the India-Canada collaboration, which I consider to be very important. Most people do.

One other part of that, which I did mention briefly, is that until the agreement with India, Canada hadn't signed an S and T agreement with another country in many years. This was the first agreement that was negotiated with a rapidly emerging economy.

I personally played a role not only in designing that program but in ensuring that there was some funding for it. The funding isn't extensive—$20 million in the four countries. The existence of that has managed to leverage other contributions from provinces—Ontario, Quebec, Alberta, and two other provinces. This is now a program that is beginning to show success.

Another organization, another forum I have played a role in, is the Science and Technology in Society *forum* that was created by Prime Minister Koizumi of Japan. It's held once a year in Kyoto and it is meant to look at the lights and shadows, the positive impacts but also the difficulties of science in society.

Last year when we held this, in part as a result of my efforts, we had a large group of Canadians there. I think 17 prominent Canadians appeared at that forum. They presented talks or chaired sessions. This was a very prominent opportunity for Canada to make an impact. And that impact was made. People recognized that we were important. I think that has really been significant.

● (1235)

**Hon. Scott Brison:** Thank you.

**The Chair:** Mr. Simard.

**Hon. Raymond Simard:** Thank you, Mr. Chair.

First of all, I'm fairly confident that down the road somewhere, maybe in the not-too-distant future, we will have a national science advisor here once again. It seems to me that in the past in the U.S. the national science advisor was very visible, a person who they would put out there to represent the scientific community. Do you see that as a possibility here in Canada? I would like our national science advisor to be visible, to be on television, to represent the community. I think Canadians should be proud of that—that we are on top of things. Do you see that as a possible role down the road?

**Dr. Arthur Carty:** With all due respect, I don't think it's up to me to suggest.... I'd hope and like to see it happen, but—

**Hon. Raymond Simard:** Whether it was you or somebody else?

**Dr. Arthur Carty:** Yes. I'm not going to be working for the government anymore after the end of March. There are many prominent people around the country who could serve in this role very effectively.

**Hon. Raymond Simard:** Do you think they should be more visible, that they should speak on behalf of the scientific community?

**Dr. Arthur Carty:** Yes. Visibility, in part, is due to what you take on and what you accomplish. I think with limited resources we've accomplished a lot.

It is true that if the office had been set up properly in the first place, with appropriate staffing and an appropriate budget, we would have achieved a lot more, which would have given even greater visibility. The visibility at the moment is partly in those areas where we've had an impact, in those communities we've had an impact on.

**Hon. Raymond Simard:** Thank you.

**The Chair:** Thank you.

We'll go to Mr. Carrie.

**Mr. Colin Carrie:** Thank you, Mr. Chair.

Mr. Carty, I wanted to get back to the reporting mechanisms you talked about. You said the new STIC really doesn't have a reporting mechanism.

**Dr. Arthur Carty:** No, I didn't say it didn't have a reporting—

**Mr. Colin Carrie:** Could you clarify then, please?

**Dr. Arthur Carty:** It reports to the minister, Minister Prentice, who will then report to cabinet.

**Mr. Colin Carrie:** What I wanted to read actually is one of the things with this new structure. It does have a clear mandate, and I'd just like to read it for you. The science and technology strategy announced the creation of a Science, Technology and Innovation Council, which is mandated to "provide the government with policy advice on S and T issues and produce regular state-of-the-nation reports that benchmark Canada's S and T performance against international standards of excellence".

So the idea here is to give it a specific mandate, and it talks about reporting back for research commercialization, refining the four research priorities, establishing S and T strategy, using government procurement to stimulate business innovation, and improving the benefits to Canada from international S and T collaborations. What this government has tried to do is to look at science and have it accountable, have some really good reporting structures in there.

Getting back to the article by Mark Henderson from *Research Money*, he really did say you were hamstrung, that there was a lack of reporting mechanism to cabinet, that you did try to strengthen the mandate from Paul Martin, but nothing came of the attempt. Was that true?

● (1240)

**Dr. Arthur Carty:** I think the reporting is not how you're interpreting it. It wasn't so much reporting as it was getting issues to the cabinet table that was the issue.

**Mr. Colin Carrie:** Could you clarify that a little bit more?

**Dr. Arthur Carty:** Having a direct relationship with a minister, where the minister would then take propositions forward to the cabinet table, is obviously also an important element in this. It's not just the Prime Minister; it's getting to cabinet with propositions that have seen input from a lot of sources. I didn't have that at the beginning.

**Mr. Colin Carrie:** You didn't have that at the beginning?

**Dr. Arthur Carty:** No.

**Mr. Colin Carrie:** But it was established for you just to report to the Prime Minister initially, type of thing, without a clear mandate when the Liberals set it up. Is that one of the frustrations you had? Was it like you were supposed to do a job without a clear mandate, to report to the Prime Minister very informally without any structures for these reports? I'm trying to figure out exactly how this mechanism went about.

**Dr. Arthur Carty:** Let me just explain it.

When I started this as national science advisor, there was no job description. Other science advisors have said the same thing: there's nobody to say how you're to carry out the mandate from the Prime Minister or to Parliament.

**Mr. Colin Carrie:** So they gave you a job without a job description, really. But there was a history there, Dr. Carty. Didn't you say that we've had all these other councils?

I think with this new Science, Technology and Innovation Council, we actually have a mandate up front, and we do have a reporting structure.

The point I'm trying to make is that your office, with best intentions, didn't seem to be following through this in the best way possible. The point I'm trying to make is that it appears what the government is doing—it's not saying that science isn't important—is making an accountable council that's going to give regular state-of-the-nation reports that benchmark Canada's S and T performance against international standards of excellence, so that Canadian taxpayers know the money is going where it needs to go.

You almost had the statement that you might be better alone in your office to report to the minister—

**Dr. Arthur Carty:** Absolutely not. When did I say that?

**Mr. Colin Carrie:** You said that the new STIC—

**Dr. Arthur Carty:** Look, I have nothing against STIC. I believe that a science advisory council is essential.

**Mr. Colin Carrie:** I agree with you.

**Dr. Arthur Carty:** And it's complemented by a national science advisor.

**Mr. Colin Carrie:** So you see that the science advisor has to be there in order for this to work?

**Mr. Arthur Carty:** Absolutely.

**Mr. Colin Carrie:** You do.

Mr. Van Kesteren, did you want to—

**The Chair:** Well, we've got 30 seconds.

Okay, we'll go to Madame Brunelle.

[*Translation*]

**Ms. Paule Brunelle:** I'd like us to get back on point, to focus on science.

From time to time, the media reports that Canada does not seem to invest heavily enough in the sciences. We are starting to hear people talk about this situation. According to Mr. Godbout from Genome Canada, it is very difficult for Canada to attract top-rate scientists because these individuals command high salaries.

In your opinion, should Canada make a greater effort to invest in the sciences? As I see it, that is the way of the future. Canada must invest in knowledge and, more importantly, in industrialization. The government must embark on this path and support scientific research. Shouldn't it be investing more heavily in order to attract leading scientists and researchers? Given its relatively small population, is this something Canada can do, in your opinion?

As for my second question, we have already discussed this in committee, namely how to get young people and women interested in the sciences. We need to prepare the next generation of scientists. Do you have any suggestions for us on how to make that happen?

[*English*]

**Dr. Arthur Carty:** With regard to the first point, I completely agree with you that a strong investment is needed. I'd add to this that some of the programs that have been created, such as the Canada research chairs program, have not just attracted top-class Canadians and retained young up-and-coming stars, but they've also recruited a lot of internationally renowned experts in various disciplines. In fact, as a result of the Canada research chairs program, more than 500 experts from outside the country have been recruited.

Our capacity has gone up, and the capability that Canada has to do research and development has increased significantly. The danger is this: how do you keep these people, both young, up-and-coming stars and established researchers? That's a challenge. There are other countries that would be very happy to poach them. As it is, Canada is very highly regarded for having done this, but it's an ongoing battle.

So yes, in order to sustain that and to build on it, you're going to have to invest more, because the demand will be greater. And of course, in the 21st century the need for highly qualified human resources is one of the principal considerations, and there's going to be great competition between nations for the brightest brains. Yes, absolutely, we have to invest more in science and technology.

As for women in science and technology, you're quite right that like many other countries we have a problem, in that we're not making the best use of the talent that resides within the female community. Why is it that something above 50% of university enrolment is female, but in fact the number of females in our faculty ranks is much lower than that and the number of women in research is much lower? We certainly have to do something about that.

This is one of the things I haven't mentioned. I chaired a women in science committee, which was examining.... This was done with Miriam Stewart of the CIHR, who on behalf of CIHR had a major interest in this. She was the director of the CIHR's Institute of Gender and Health. We chaired this committee and came up with a number of recommendations that would make it easier for young women faculty who had been recruited into universities to see their lot improved; in other words, that there be such things as maternity leave on an extended basis, so that they had the chance to come back after the maternity leave and compete again in the system.

It's a bit of a rat race, as you know, in universities, and anybody who takes time off to have a baby, for example, is at a disadvantage. I think one has to tackle the quality of the environment in order to adjust that. We did some work on that and came up with a series of recommendations, which have gone to the granting councils. That will be followed up whether I'm there or not.

I strongly support the idea of building the community of female scientists. In principle, it's a competitive advantage to be able to make use of all of those women who are now getting an education at university and to make sure that in science and technology we have a significant component.

One of the major concerns at the moment is the number of women who are not going into computer science. This is a big issue, a major issue for the country, because we have a large ICT sector.

● (1245)

**The Chair:** Thank you.

*Merci, madame Brunelle.*

We'll go to Mr. McTeague.

● (1250)

**Hon. Dan McTeague (Pickering—Scarborough East, Lib.):** Mr. Carty, thank you for being here today. I apologize for some of the heated comments here. I want you to know this is a committee that normally functions very well. Despite our partisan differences, we tend to try to work things out as best as we can.

I have been in touch with some officials from the Ontario equivalent of what we have here nationally. They are of course very disappointed with the turn of events, because they tend to think there is less of an emphasis now on science.

Can you give me an illustration of what other nations are doing at this very difficult time?

We've finished a report on manufacturing, where we've identified the need for greater research and development, particularly in breakthrough areas. I recall sitting in this very seat in 1999 when a fellow by the name of Preston Manning, leader of the Reform Party, was amazed at synchrotron and the nanotechnology our chair has referred to many times.

Can you give us an illustration of nations that are doing very much what we formerly did, with an advisor and the kinds of investments being made that will continue to attract future business? Can you give me examples of countries that do not have this sort of schizophrenic approach to science—one day hot and next day cold?

**Dr. Arthur Carty:** Of the leading nations, I think the United States has traditionally been at the top of the heap in science and innovation. They have not only a world-leading knowledge generation capacity, but also the capacity to turn brilliant ideas and concepts into vibrant companies in the marketplace. The U.S. has been a leader in that.

It's interesting that over the last few years there's been a recognition that the U.S. government has moved the Office of Science and Technology Policy, which is where the science advisor lives, out of the White House and away from the seat of power. Many communities have reflected that it hasn't really been a good thing. There is now a very powerful independent committee in the United States that is arguing—and this is supported by two of the candidates—to move the OSTP back into the White House. Then the science advisor would have greater access to the ear of the President, for example, and more influence.

**Hon. Dan McTeague:** Are there any other jurisdictions, other than south of the border, where the position of the science advisor has been changed, altered, or demoted, that you can think of in your experience?

**Dr. Arthur Carty:** Some of the positions go back a long time. Japan recently created a science advisor to the Prime Minister, and that's in place. They have a Council for Science and Technology Policy, on which the science advisor sits, but he also has access to the Prime Minister. That's a change in the direction I was recommending.

In the United Kingdom there's a long history of science advisors. These science advisors have always had the ear of the Prime Minister in the U.K., but the relationship between David King, the last science advisor, and Tony Blair was very positive for the United Kingdom—not just for their investments in science, but their tackling of various problems they've had.

**Hon. Dan McTeague:** Is it fair to say that Canada and the United States are the only countries that have removed or changed the role of the national science advisor?

**Dr. Arthur Carty:** I think it's evolving, but the tendency is to strengthen it.

**Hon. Dan McTeague:** If you have no one coordinating, it's a bit like the old Yogi Berra saying: if you don't know where you're going, chances are you're going to wind up somewhere else. If you don't have someone coordinating our science approaches, it's a little like having a cabinet without a Prime Minister.

What do you think is in store for science down the road in Canada, given that we've made a rather radical decision here that is almost unprecedented, save and except for the United States?

**Dr. Arthur Carty:** Reflecting on what's happened in Canada over the last 20 years, the sound way to move forward would be to recognize that we need a science advisory capacity embodied in a science advisor and also in a council, which can provide a different kind of advice.

I think the other recognition we have to make is that there are other key elements. One element is that the government at the highest level has to have science as a high priority in the country so that it can be seen that way. If that's lagging, it won't help.

The other thing is that the science advisory capacity that is brought to bear by the national science advisor should be embedded in the system and welcomed not just as an appendage. It should be part of a team working towards this, and working with Parliament as well as with the government. I know this is very much along the lines of what Mr. Rajotte has suggested.

● (1255)

**The Chair:** Thank you, Mr. McTeague.

I'm going to take the last spot here, Dr. Carty.

Dr. Carty, I was at the synchrotron on Saturday at the University of Saskatchewan. In your remarks you mention an innovation and research system and you talk about scientific excellence and funding and then you talk about science advice as the two that need to complement each other. I think that's absolutely correct.

One of the things that hasn't come out today is the fact that when I was out there in Saskatoon—and I don't want to speak for them—they seemed overjoyed with what we're moving forward with in terms of an S and T strategy, first of all last spring, but secondly, in terms of the budget, in terms of concrete things that the government is actually doing. Investing more in the synchrotron, more funding for indirect costs of research, more funding for the three granting councils—all things you've supported over the years—strengthening the ability of Canadian universities to attract and retain top science leaders with $21 million over two years to establish up to 20 Canada global excellence research chairs. These are issues we can point to that are very specific and concrete, which I certainly assume you would support in an advisory position. I think that needs to be emphasized.

When you emphasize the advice and you emphasize the funding, it's a very key question. One of the things that strike me is partly from our own private discussions. You mention it in your talk about being inadequately funded from the start. My impression from our conversations was that you were frustrated right from the start with a lack of direct access to former Prime Minister Paul Martin. You make comments about the current government, and I take your point, but you seem to be very frustrated at your lack of access to former Prime Minister Paul Martin and the fact that you were not solicited for advice.

Is that impression of your frustration correct or not?

**Dr. Arthur Carty:** I guess I was frustrated by a lack of access to cabinet on a regular basis and to the Prime Minister on a regular basis. When a national science advisor is to be effective, you have to have that regular interaction. For example, for science to be effective there should be a science advisor at the cabinet table in order to give sciences a voice to their considerations. I think that's quite crucial.

With regard to your comments about the CLS, as you know, I'm the chairman of the board of the CLS. I've just finished a nine-year term as chairman of the board. I absolutely agree with you that the CLS is delighted that the government has provided $10 million over two years of additional funding. Unfortunately it doesn't solve the longer-term problem, as you know. I'm sure the universities are very happy about the indirect costs and the increase there. There are many things that are very positive. It's important to keep your eye on the overall ball so that we don't forget about improving the whole system. That's the difficult thing.

**The Chair:** I look at this, and you reference the S and T strategy, which I think you said overall is a very good document. It looked at the Office of the National Science Advisor, which, as you admit, was not funded properly from the start. So it took your office, combined it with the Council of Science and Technology Advisors and the Canadian Biotechnology Advisory Committee, and put it into the body under Dr. Alper.

You and I may say we'd love to have Dr. Carty involved, but the fact is that the government moved forward very deliberately, it seemed to me, and is saying from a program point of view that it's moving forward on issues like granting councils, CFI, and other things. On science policy, it's moving forward with the Council of Canadian Academies, but also the Science, Technology and Innovation Council. It seems to me this is the advisory body.

You mentioned we need a science advisor plus a council, but it seems to me the government is saying the advice was too disparate. We needed to bring it together into one body under Dr. Alper. Now, Dr. Alper is not called a national science advisor, but in essence he is. He will be the person filtering advice from this distinguished body to the Minister of Industry, to the cabinet, to the Prime Minister.

Just following Dr. Carrie's point, you may not agree personally with your situation, but does that not make sense, with Dr. Alper, who I'm sure you would agree is an eminent scientist, filtering science policy advice to the government?

● (1300)

**Dr. Arthur Carty:** I just don't think it's complete. I think the full system is needed here, and that includes a science advisor, not just an advisory council, which is a part-time group of people who will meet and generally study topics given to it by government. The daily advice on science issues—where does that go?

**The Chair:** You reference some of the topics, technology and others. Can you submit to the committee the reports you presented to the Prime Minister and to cabinet so we can see exactly the advice you provided and how it might be different from this new Science, Technology and Innovation Council?

**Dr. Arthur Carty:** You're thinking of the structure? We provided advice. We completed studies on major science investments, on nanotechnology.

**The Chair:** Can we get copies of those?

**Dr. Arthur Carty:** Yes. The structure we had suggested, yes.

**The Chair:** Thank you.

Thank you for your time, Dr. Carty and Mr. Dufour.

The meeting is adjourned.

**Published under the authority of the Speaker of the House of Commons**

**Publié en conformité de l'autorité du Président de la Chambre des communes**

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