"This is a first examination of a relatively short, but definitively important and rich, period in the history of social statistics in Canada. The authors provide a wealth of information and we learn how, in a favourable context admittedly, statisticians from Statistics Canada (Fellegi, in particular) and researchers, by joining forces, could initiate a fairly major change. The story leaves room for individual decisions and actions, without falling into the trap of ancient style history. I definitively enjoyed the text: very informative, very precise, well documented, well written. And very, very helpful. The authors deliver first-hand information that will be highly valuable to those interested in social research."

– Jean-Pierre Beaud, Coauthor of *Statistics, Public Debate and the State, 1800-1945* (2012).

"The creation and development of Research Data Centres have played a leading role in transforming the Canadian research landscape during the early 21st century. In their compelling volume, Social Statistics Matter, Raymond F. Currie and Sarah Fortin analyse for the first time the origins and expansion of the RDC network. Their work emphasizes the multiple ways in which the RDCs enable profound new insights about the past and present, an expanded pool of talented researchers, and significant contributions to key questions of public discussion and policy debate."

– Chad Gaffield, Professor of History, University of Ottawa, and former President of SSHRC.

The development of the Canadian Research Data Centre Network (CRDCN) is a remarkable story in the development of quantitative social science research in Canada. From a core group of nine Research Data Centres, when it was launched in the early 2000s, the Network now includes 27 facilities right across Canada. It plays a key role in providing access to a vast array of social, economic, and health data, primarily gathered by Statistics Canada. It also helps to prepare the next generation of social science researchers, by offering essential training in quantitative methods, and to make research count, by disseminating research findings to the policy community and the Canadian public. Thanks to thousands of researchers from more than 25 disciplines who have used this infrastructure through the years, Canadians now know far more about their society than would have been possible otherwise. This book tells the story of this quantum leap forward in quantitative social science research capability in Canada, paying tribute to the men and women who made it happen.

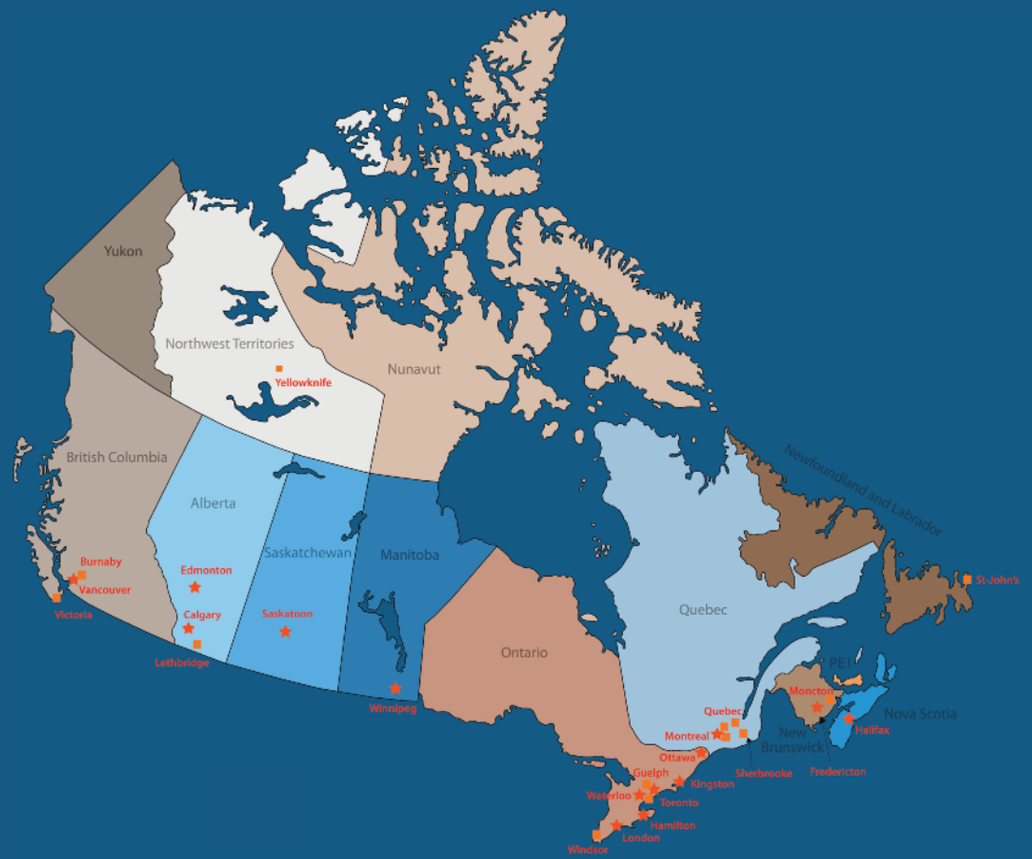
CRDCN Canadian Research Data Centre Network
RCCDR Réseau canadien des Centres de données de recherche

www.rdc-cdr.ca

ISBN 978-0-9947581-0-1

Raymond F. Currie and Sarah Fortin

Social Statistics Matter A History of the Canadian RDC Network



Social Statistics Matter

A History of the Canadian RDC Network

SOCIAL STATISTICS MATTER

A HISTORY OF THE CANADIAN RDC NETWORK

Raymond F. Currie and Sarah Fortin

CRDCN Canadian Research Data Centre Network
RCCDR Réseau canadien des Centres de données de recherche

Library and Archives Canada Cataloguing in Publication

Currie, Raymond F., 1934-, author
Social statistics matter: a history of the Canadian RDC Network / Raymond F. Currie and Sarah Fortin.

Issued also in French under title: Une question de données.
Includes bibliographical references.
Issued in print and electronic formats.
ISBN 978-0-9947581-0-1 (paperback).—ISBN 978-0-9947581-1-8 (pdf)

1. Canadian Research Data Centre Network--History. 2. Social sciences--Research--Canada--Statistics--History. I. Fortin, Sarah, 1966-, author II. Canadian Research Data Centre Network, issuing body III. Title.

H62.5.C3C87 2015 300.72'071 C2015-904646-7
C2015-904647-5

The services and activities provided by the CRDCN are made possible by the financial or in-kind support of the SSHRC, the CIHR, the CFI, Statistics Canada and participating universities, which we gratefully acknowledge.

CRDCN-RCCDR
Hamilton, Ontario
www.rdc-cdr.ca

Table of contents

Acknowledgements

The authors wish to acknowledge and thank Céline Le Bourdais, Gustave Goldmann, Chuck Humphrey, Byron Spencer, Richard A. Wanner, Donna Dosman, Dave Haans, Joe Di Francesco, Philippe Valois and Darren Lauzon for their input into the preparation of this manuscript.

The project itself, however, is the fruit of a much larger number of people's labour. If novelists can rightly spend several pages acknowledging contributions to their manuscript, surely we can do no less. There is, of course, the danger of omitting someone who has made a significant contribution. While risking that possibility, it is nevertheless essential to note that the immensity of the project requires that the key contributors be acknowledged.

The Network has been blessed with a set of Academic Directors who have been outstanding. The complete list of directors, past and present, can be found in Appendix 1. These men and women are first-rate scholars and have shown themselves to be wise administrators who have placed the success of the Network and its research goals as their highest priority. Heather Juby, the first Knowledge Transfer Coordinator, not only articulated the role of such a Coordinator but brought enormous talent to the development of our grant proposals.

Statistics Canada has been an indispensable partner. Former Chief Statistician Ivan Fellegi offered the kind of leadership without which the project never would have seen the light of day. Gustave Goldmann carried out very effectively the pivotal role of program manager within Statistics Canada for ten years and, therefore, was the main day-to-day contact person. Doug Norris, Garnett Picot, Rosemary Bender, and Heather Dryburgh all have made enormous contributions. The Network has benefitted not only from the work of personnel within several divisions, including technical support, but also from the regional and local research officers who play a major role in the smooth operation of the Centres.

The granting councils have recognized the expertise of the Network researchers and facilitated the development of our world-class network. The Social Sciences and Humanities Research Council (SSHRC) has also been an indispensable partner. Former Presidents Marc Renaud and Chad Gaffield worked with Ivan Fellegi to support the vision. Vice Presidents of Research Janet Halliwell and Gisèle Jasmeen, Division Leaders, and Research Officers such as Marc Fonda and Mika Oehling were always available for consultation at the same time that they sought out rigorous international evaluators of our grant applications.

While the Canadian Institutes of Health Research (CIHR) came on board a little later than the Social Sciences and Humanities Research Council (SSHRC), the leadership of Mark Bisby and the Scientific Directors Nancy Edwards, Colleen Flood, Anne Martin Matthews, and Joy Johnson has been noteworthy.

The Canada Foundation for Innovation (CFI) has twice provided essential, substantial funding; and on the technology development side, the expertise of CANARIE and the various provincial ORIONs has been vital.

The primary contacts among universities have been Vice Presidents of Research, as well as the personnel in their respective research offices. Special mention needs to be made of three universities. The University of Montreal set the tone at the outset,

particularly Joseph Hubert, who was then Dean of the Faculty of Arts and Science and is now Vice Rector in charge of research. The University of Manitoba (where the Network headquarters was located from 2002 until 2010) offered enormous assistance through the support of Vice President (Academic) Joanne Keselman and Vice President (Research) Digvir Jayas. Barbara Crutchley and Tracy Mohr, in the university's Office of Research Administration, were particularly accommodating. Finally, the administration of McMaster University, the headquarters of the Network since 2010, has provided the Network with significant assistance. At McMaster, special thanks go to two individuals: Robert McNutt, who replaced Raymond Currie as the Executive Director of the Network in 2009; and Byron Spencer, who opened the first Research Data Centre in the country and has been the Academic Director since its opening. He has also been a most effective Chair of the Network's Executive Committee since the position was created in 2003.

Needless to say there are many others who have contributed to the origins and development of the Network. To all, a most sincere thank you.

About the Authors

Raymond Francis Currie (Ph.D.) is Dean Emeritus and Professor of Sociology (retired) at the University of Manitoba. He was the Executive Director of the CRDCN from 2002 to 2010. Before then, he had a very successful academic career both as researcher and administrator in the Department of Sociology at the University of Manitoba (1972-1999) and at the Centre for Higher Education Research and Development (1998-2008). From 1981 to 1991, he founded and directed the Winnipeg Area Study. He was awarded the Governor General's Caring Canadian Award, in 2013; an Honorary Doctorate of Laws, from McMaster University in 2012; the Lise Manchester Award from the Statistical Society of Canada in 2010; the Queen Elizabeth II Golden Jubilee Award in 2002; the Peter D. Curry Chancellor's Award in 1999; and the Canadian Association of University Business Officers Innovation in Management Award, as well as the Canadian Sociology and Anthropology Outstanding Contribution Award, in 1994. He published his autobiography *Secure and Uncertain: A Father's Story* (Anderson Press) in 2008.

Sarah Fortin has been the Knowledge Transfer Coordinator of the CRDCN since September 2011. Before joining the Network, she was a research director (2001-2011) with the Institute for Research on Public Policy (IRPP) where she supervised several research projects examining various policy issues, including Quebec-Canada relations,

the Canadian Social Union, family policy, and the implications of an aging society. She was also the Associate Editor of the magazine *Policy Options* (2005-2011). She holds an MA in political science from the Université du Québec à Montréal (UQÀM) and did her Ph.D. studies at McGill University (ABD).

Introduction

The launch of the Canadian Research Data Centre Network (CRDCN) is the story of a remarkable development in quantitative social science in Canada.[1] Without question, the initiation of the Network has marked a "quantum leap forward" in this field of research.[2]

The achievement came about because of a number of factors: a recognized need, a shared vision of what could be achieved, a willingness to continuously break down previously insurmountable barriers, a great deal of collaboration, and financial commitments from key actors. Finally, the directors and many academics and students from more than 25 disciplines at universities across the country have harnessed their outstanding research skills toward the common goal of developing Canadian expertise in social science statistics and to "making research count."

The introduction of longitudinal surveys in the 1990s led to a major expansion of data collection within Statistics Canada. In the face of this new situation, it soon became clear that Canada needed to improve its capacity to analyse these new data sets. Failing that, the data would remain grossly underutilized. Access to the data was severely restricted, being limited to researchers working on the premises of Statistics Canada. Furthermore, Canada lacked a sufficient number of trained researchers to analyse the data, and the links were weak between social scientists and potential knowledge users.

In its landmark report released in 1998, the joint working group on the advancement of research using social statistics chaired by Paul Bernard (the joint working group) noted that "as a nation, we have very little capacity to conduct social policy research, evaluate social programs, or monitor progress toward achieving social aims."[3] This statement set the tone and agenda for the advance of quantitative social science research in Canada for more than the next decade. The vision articulated in that document came to be widely shared. Specifically, the joint working group proposed a three-pronged Social Statistics Research System: research training groups would be set up, Research Data Centres (RDC or Centre) would be established, and a social statistics communication program would be developed.

Under the leadership of Ivan Fellegi, Statistics Canada's Chief Statistician, and Marc Renaud, President of the Social Sciences and Humanities Research Council (SSHRC), who together had created the joint working group, the recommendations were accepted and a flurry of activity got underway. Eight months after the final report was released, a formal partnership (the "Canadian Initiative on Social Statistics") was established between Statistics Canada and SSHRC "to promote research and training in the application of social statistics."

Significant barriers had to be overcome before this partnership could bear fruit. Most notably, the full integrity of the *Statistics Act* had to be maintained. This was done through the development of a category of "deemed employees," where researchers were given access to confidential data as long as they fulfilled the requirements of the *Statistics Act*, including RCMP background checks and adherence to strict provisions of confidentiality.

A number of agencies collaborated to bring the CRDCN to fruition. In addition to Statistics Canada, the Canadian Foundation for Innovation (CFI) and SSHRC, a few provincial funding bodies and several universities, initially under the auspices of the Association of Universities and Colleges of Canada (AUCC), were the first partners in

what would develop over time into a partnership of over 50 universities and government agencies.

With the vision and proposed organization in place, a significant financial commitment was pursued. In the fall of 1999, Paul Bernard and Céline Le Bourdais led a small committee that sent a letter of intent, regarding a proposal for funding, to the relatively newly minted Canada Foundation for Innovation (CFI). The full proposal was submitted on January 31, 2000. An international peer review committee reviewed the proposal in April, and by August an award totalling more than $13 million over 5 years was granted. The first RDC opened at McMaster University in December. By the end of 2001, all nine of the original Centres were open: Atlantic RDC at Dalhousie University, New Brunswick RDC at the University of New Brunswick, Quebec Interuniversity Centre for Social Statistics (QICSS) at the University of Montreal, Toronto Regional RDC at the University of Toronto, McMaster RDC at McMaster University, South Western Ontario RDC (SWO RDC) at the University of Waterloo, Alberta RDC at the University of Alberta, Prairie Regional RDC at the University of Calgary and British Columbia Interuniversity RDC (BCI RDC) at UBC.

It was a remarkable achievement realized in a short period of time. It was now up to the social science community to rise to the challenge. And it did. In June 2006, the international Expert Committee that evaluated the second CFI grant request submitted by the Network stated in its report: "The committee considered the team has made very good use of the original CFI award and has achieved outstanding results and outcomes, at times well in excess of what was expected at the outset."[4]

Our goal in the following pages is to tell this story of remarkable growth from the outset until 2013, to highlight the significant achievements accomplished in this short period of time (see Box 1 for a summary of these achievements), and to acknowledge the many contributors to this success.

Box 1 Main achievements, 2000-2013

- Access to data has proceeded at a significant pace with the almost continuous deposit of new data sets. There are now over 300 data sets available in the RDCs.
- The number of Centres has grown from the original nine to 27 facilities, stretching from St. John's to Victoria.
- The number of researchers (and research projects) has grown significantly, to a total that has surpassed 4,000 users over the years.
- Graduate students are being trained in increasing numbers through training seminars and summer schools, through graduate courses offered in the Centres, through their role as research assistants, and through their own personal research in the RDCs while pursuing their degrees.
- Knowledge transfer activities have been expanding and linkages between social science researchers, policy makers and decision makers have increased markedly. This has included advice to government and capacity building in quantitative research.
- Collaboration has been a hallmark and significant achievement of the Network since its beginning. Not only have the Centres themselves been models of collaboration (in spite of their different sizes and needs), but partnerships between universities in linking Centres and branches have flourished along with the teamwork between researchers at different universities and in different disciplines. Collaboration between universities and Statistics Canada has improved, and alliances between Statistics Canada and the national granting councils, as well as with federal departments, have developed.
- Beyond the initial original funding partners (Statistics Canada, SSHRC, the CFI, the universities and various provincial agencies), the number of partners in what we could call the Research Data Centre community has blossomed to around 50, with CIHR being the most significant addition.
- The Network has developed a consensus decision-making model that has allowed it to face and resolve complex organizational and financial issues.
- Technological developments have linked all RDCs in real time through a wide area network (WAN). In addition, the Network has contributed to the development of metadata standards and the adoption of a life course approach in data management, a significant technological and methodological innovation with worldwide implications for social scientists.
- The establishment of the Network has allowed Canada to retain outstanding social science researchers, has encouraged some Canadian scholars to return to Canada, and has attracted new scholars to the country.

The 1990s: a Changing Research Climate

In 1990 the Canadian Sociology and Anthropology Association (now the Canadian Sociological Association) celebrated its 25th anniversary. In preparation for the annual conference, held that year in Victoria, B.C. with one of the largest turnouts in its history, Raymond Currie, as Chair of the national program committee, commissioned five papers on the relationship of the two disciplines to social policy. In calling for submissions, he wrote: "As a general statement, it would be hard to argue that sociologists and anthropologists in Anglophone Canada have been in the forefront of major social issues, either in formulating policy or addressing existing social policy."

A co-edited book emerged from that annual conference.[5] Bruce McFarlane, a pioneer in sociological inquiry in Canada, highlighted in this book the contributions of sociology and anthropology to social policy in Canada, particularly under the auspices of Royal Commissions and other commissions of inquiry. He added: "The sets of issues that confront the state pertain more than ever to social relations, whatever the sphere – family, community, ethnicity, gender, health, the work place, the school, the prison, the Indian reserve."[6]

On the other hand, in the same book, Jim Harding addressed "[t]he ideological and structural roots of the failure of sociology as a foundation for English Canadian social policy." Barbara Neis wrote of the "uneasy marriage of academic and policy work." Ester Reiter addressed the structural constraints under which academic work is carried out and which mitigate against "useful research" from the labour union perspective. Pat and Hugh Armstrong entitled their piece "Better Irreverent than Irrelevant." They urged more social policy research, but addressed the risks involved in doing so. "Not only does social policy not count as respectable academic work, it also may count against academics and certainly limits their ability to do other kinds of work." That was 1990.

In that same year, the American Ernest Boyer published what became an influential book entitled *Scholarship Reconsidered*.[7] Challenging the "teaching versus research" dichotomy, he advocated a much more comprehensive view of scholarship that would include the scholarship of discovery, teaching, integration, and application. The typology became the subject of intense scrutiny in academic circles around the world. One of the most significant innovations of the typology was to link academic scholarship to community service through the "scholarship of application." While land grant colleges in the United States already had had a long history of community service as scholarship, Boyer's typology urged a more universal application in higher education.

In 1994 Michael Gibbons et al. published *The New Production of Knowledge* in which they articulated a typology of the "changing modes of research."[8] The authors noted several shifts, specifically: a) the shift from individual- to team-based research, b) from discipline-based to problem-based, c) from local knowledge-based to network-based, d) from academic control of research to research shaped by the interaction of researchers and users, and e) from peer review judgment to quality control that incorporates academic review and users (for economic and social impact).

Building on the writing of Gibbons and in collaboration with Boyer, Eugene Rice wrote a seminal piece on “Making a Place for the New American Scholar”[9] and directed the “Heeding New Voices” project, [10] where he and others conducted interviews with more than 350 young scholars from 40 different groups. One of the major goals of these young academics, who were just beginning their careers, was a “strong commitment” to “wanting to help others by using their intellectual expertise to improve society.”

Boyer, Gibbons, and Rice had an enormous impact on higher education. By 1998 a major conference of 40 research-intensive land grant colleges in the United States was held in Oregon, where they focused on the scholarship of application and how universities should be more responsive to the public and to policy makers. Guidelines for tenure and promotions in universities began to change.[11] Michigan State, for example, defined university outreach as: "A form of scholarship that cuts across teaching, research, and service. It involves generating, transmitting, applying, and preserving knowledge for the direct benefit of external audiences in ways that are consistent with university and unit missions.” Four dimensions of quality outreach were evaluated, each with several qualitative measures: I) the significance of the project; 2) the context, for example, the appropriateness of expertise and methodological approaches; 3) the scholarship, that is, knowledge resources, knowledge application, and knowledge generation; and finally 4) impact, that is, the success in meeting the project goals, sustainability, and the capacity building of the project.

In the Canadian context, the early 1990s was also the period when the national funding councils began to move in the same direction. Talk arose about knowledge transfer, knowledge mobilization, research related to society, culture and policy makers. In 1998 new “CURA” (Community-University Research Alliances) grants from SSHRC required universities to interact with community organizations.[12]

Paul Bernard was a significant catalyst in Canada in this decade-long change in the research climate.[13] "An early advocate of the 'life course' approach, which aims to analyse the dynamics of the pathways taken by individuals through time and space, Bernard pushed for the creation of a longitudinal household survey in Canada."[14] Particularly relevant to this current discussion was Bernard's determination that any such data collection should be of service to society and, therefore, forge links with social policy efforts. In that vein, he led the charge to create a unique social statistics research infrastructure in Canada, which culminated in the creation of the Data Liberation Initiative (DLI) and later the Canadian Research Data Centre Network (CRDCN).

Mention of the DLI requires more than a passing reference. The provocative title of this data dissemination initiative accurately describes the substantially increased availability of public use microfiles (PUMFs) from Statistics Canada to social science researchers at universities across the country. This initiative was first conceived in the late 1980s, was approved by Statistics Canada and the academic community in 1993, and funded by the Treasury Board in 1996.[15] Thus, the DLI predated the RDCs by more than five years; and, in fact, its success in making data more widely available was a factor in the proposal for the development of the RDC Network. Prior to the DLI, individual researchers would either have to go to Ottawa to work within Statistics Canada or pay substantial fees to access the public use files made available at their universities. The DLI "liberated" these little-used files by making them available, usually in the libraries of the participating universities. Universities had to pay a modest annual fee to become repositories of these data ($12,000 for large universities and $3,000 for smaller campuses).

Wendy Watkins,[16] librarian at Carleton University, Ernie Boyko at Statistics Canada, and Chuck Humphrey at the University of Alberta are the three founders of the DLI. Also instrumental in its development were the leadership and cooperation of Statistics Canada, SSHRC, the Federation for the Humanities and Social

Sciences, and contributions from several Ministries in the Federal government as well. When the DLI was launched, it was expected to attract about 30 universities. In fact, the DLI now includes over 75 postsecondary institutions across the country.[17]

The Initiation of Longitudinal Surveys

It is in this changing research climate, with the plethora of writing on the nature of social science scholarship and its possible links to social policy, that Statistics Canada initiated a set of longitudinal surveys to provide a better understanding of the Canadian social fabric, an initiative made possible by substantial funding from the federal department of Human Resources and Social Development Canada (HRSDC). Unlike conventional cross-sectional surveys, longitudinal surveys follow the same respondents over time, which allows for much more sophisticated research into the causes and consequences of behaviours and outcomes.

These were ambitious and expensive surveys that followed an approach that already had begun in the United States and England. The US had led the way with the Wisconsin Longitudinal Study, begun in 1957, as well as the National Longitudinal Survey of Labour Market Behaviour and the Panel Study of Income Dynamics, both launched in the 1960s. In the UK, the British Household Panel Survey, the National Child Development Study, and the Birth Cohort Study all began in the early 1970s.

Box 2 presents the major longitudinal surveys launched in Canada in the early 1990s. It should be clear from these brief descriptions that the goal of these surveys was to provide policy makers with well-researched social trends that would allow for more "evidence-based" decision-making. These surveys addressed substantial if not comprehensive questions related to health, economic, and social issues, and they offered a great deal of promise and research potential. But, as the data were being collected and results became available, it also became clear that Canada was not well-equipped to

fully benefit from them. These surveys require special individual identifiers to keep track of respondents over time, and the data collected through them are, thus, even more sensitive than those from other types of surveys. While, in order to protect the privacy of individuals, researchers would never have access to these identifiers, these longitudinal files were nevertheless considered too sensitive to be placed in the public domain: They would have to be placed in a more secure environment with strict confidentiality rules; and this was the rationale behind the proposal to develop RDCs. Access would be provided to academic researchers who could demonstrate their need for detailed microdata in conducting scientifically worthwhile projects and which could not be carried out with the data available through the DLI.[18]

Thus, the RDCs would complement the DLI by dramatically extending the social science research capabilities in Canada in order to include access to confidential files which could not be placed in university libraries or other non-secure campus locations for public access. The development of the RDC Network was, therefore, the second major social science initiative in data dissemination and capacity building in Canada. In the next section, we review in greater detail how this infrastructure was developed.

Box 2 Main longitudinal surveys in Canada

The National Population Health Survey (NPHS) was first carried out in 1994 to provide measures of the level, trend and distribution of health in the population. It was designed to better understand the determinants and correlates of health and the relationship between health status and health care utilization, including alternative as well as traditional health services. In each cycle, a common set of questions was asked to the same respondents, allowing for the analysis of changes in the health of the respondents over time. In addition, the questionnaire included focus content and supplements that changed from cycle to cycle. After nine cycles, the NPHS ended in September 2012.

The Survey of Labour and Income Dynamics (SLID) was first carried out in 1993 to better understand the dynamics of economic well-being among Canadians. It complemented traditional survey data on labour market activity and income by providing information on the changes experienced by individuals over time: What economic shifts do individuals and families live through? How does this vary with changes in their paid work, family make-up, receipt of government transfers, or other factors? The SLID was the first Canadian household survey to provide national data on income fluctuations, allowing greater insight into the nature and extent of low income. Effective with the release of 2011 data, only cross-sectional estimates are now available.

The National Longitudinal Survey of Children and Youth (NLSCY) was a long-term study started in 1994 to examine the development and well-being of Canadian children from birth to early adulthood. The NLSCY was designed to collect information about factors influencing a child's social, emotional, and behavioural development and to monitor the impact of these factors on the child's development over time. The survey covered a comprehensive range of topics, including health, physical development, learning, and behaviour, as well as the family and social environment. It was terminated in 2009, after eight cycles.

The Youth in Transition Survey (YITS) was launched in 1998 to look at the factors that influence the transition from school to workplace amongst adolescents and young adults, including the family context, educational and training experiences, accomplishments, goals, and workplace experiences. After six cycles, this survey is now inactive.

Box 2 Continued

The Workplace and Employment Survey (WES) was first carried out in 1999 to examine the ways in which employers and their employees respond to the changing competitive and technological environment. The survey was designed to shed light on the relationships among competitiveness, innovation, technology use, and human resource management on the employer side and technology use, training, job stability, and earnings on the employee side. After eight cycles, it was terminated in 2006.

The National Graduates Survey (NGS) was designed to measure the short-to-medium-term labour market outcomes of graduates from universities, community colleges, and trade-vocational schools, including the level of employment, the relationship between programs of study, career expectations, qualification requirements, and the employment subsequently obtained; job and career satisfaction; and occupational achievement. Each graduating class was interviewed two years after graduation (NGS) and five years afterward (Follow-up Survey of Graduates). There were 12 cycles from 1978 to 2007.

The Longitudinal Survey of Immigrants to Canada (LSIC) was first carried out in 2001 to examine how new immigrants adjust to life in Canada over the first four years after their arrival, the crucial period during which they form their first economic, social, and cultural links, and to understand the factors that can help or hinder this adjustment. It was ended in 2005 after three cycles.

Note: The information reported is taken from Statistics Canada's website.

The Development of the CRDCN

The Bernard Joint Working Group

While the initiation of longitudinal surveys in Canada was a significant achievement, it was not long before two serious problems were identified: Previously there had been little interest in policy-oriented research in the social sciences academic community,[19] but now that these new data were being gathered, there was little research capacity to use the data effectively; and, even more basic, there was extremely limited access to the data. In brief, the data were clearly under-utilized.

On the initiative of Statistics Canada, Ivan Fellegi, the Chief Statistician, and Marc Renaud, President of SSHRC, together established a joint working group chaired by Paul Bernard in order "to make proposals to encourage quantitative research on major social and economic issues using large-scale data."[20]

In its final report, released in December 1998, the joint working group began by pointing out that "Canada's social policy has not kept pace with the dramatic changes in its economic policy in the past two decades." While "we have a number of excellent and timely social surveys covering a number of topics … *as a nation we have very*

little capacity to conduct social policy research, evaluate social programs or monitor progress toward achieving social aims [italics added]."[21] This statement set the tone for the recommendations that were to follow.

The report highlighted three significant problems that had to be overcome:

- Lack of access to detailed microdata.
- Lack of trained researchers in significant numbers.
- Weak links between the work of social scientists and the potential users of the knowledge they generate.

To solve these problems, the report recommended the funding of three components which together formed a "Social Statistics Research System."

The first component was aimed at increasing the number of skilled researchers. Three solutions were proposed: a) research and training groups that would bring together researchers from different disciplines; b) a training program to provide advanced training in methodology and statistics, which included a summer school primarily for graduate students, postdoctoral students, and librarians; and c) a Fellowship program for M.A., Ph.D., Postdoctoral students and Senior Fellowships.

The second component entailed two proposals: a) the establishment of RDCs and b) the enhancement and expansion of the Data Liberation Initiative.

The third component was the development of a Social Statistics Communication Program, in which research forums would be a key part.

The extent to which many of these recommendations have been enacted is a testimony to the creativity and high quality of the Report. In this section, we examine how the second component was implemented, focusing on the establishment and development of the

RDCs. In the next section on the Network's achievements, we will discuss the training and communication components.

The Creation of the Research Data Centres

Garnet Picot at Statistics Canada wrote the section of the Bernard report recommending the creation of RDCs. In a letter to Raymond Currie, Picot recalled the development of the idea:

> As I recall, Peter Kuhn (then a labour economist at McMaster and a task force member, now in California) and [I] promoted the idea of the RDCs and were asked to try to develop it. We based our approach on the US census bureau RDCs. They were the initial model we used, although it changed somewhat as we developed it. We did a bunch of research regarding its feasibility, including how the US data Centres worked, and held discussions with Ivan Fellegi as to how we could actually make this work from Statistics Canada's perspective. The notion of the deemed employees providing a paper for Statistics Canada as a way of legitimately providing confidential data under the *Statistics Act* came out of those discussions.[22] The approach was discussed and refined in the task force discussions, and based on what we had learned and thought would work, I then wrote the section on the RDCs for the Bernard task force report. As I understand it, the head of the CFI (David Strangway) read the report on a plane and decided that the RDCs were a good idea and a way for the CFI to support the social sciences. As I understand it, the CFI contacted the task force (Paul Bernard, I assume) to suggest that we apply for a grant.[23]

Perhaps the concept of "deemed employee" requires further elaboration. According to the Statistics Canada Policy Manual:

> Persons deemed to be employed under the *Statistics Act* must be providing a service to Statistics Canada that is in keeping with the statistical mandate of the Agency. The service to be

> provided must be in the form of a research paper or otherwise serve to support the statistical work of the Agency. It must be limited to research projects or activities that Statistics Canada would be prepared to carry out itself but cannot because of lack of resources, where Statistics Canada does not have the specialized expertise necessary, or where it is not efficient for employees of Statistics Canada to do the work.[24]

As Gustave Goldmann expressed it, the challenge met by the national statistical organization was "to maximize the accessibility of the data while respecting the citizens' right to privacy and managing the confidentiality of the data."[25]

In June of 1999, at the invitation of Statistics Canada and SSHRC, the Vice Presidents or Principals of Research at universities met with Robert Davidson, Director of Research and Policy Analysis at the AUCC, to discuss the report of the joint working group. By September, SSHRC and Statistics Canada had formalized a partnership which they called "the Canadian Initiative on Social Statistics." SSHRC still uses that name for its program of funding, under which the Research Data Centre Network falls. Maintaining the rapid pace of initiatives, the AUCC held a further meeting in Winnipeg in October, to which universities interested in establishing an RDC were invited. Sixteen attended.

When the universities were informed that they would each have to commit $100,000 a year to Statistics Canada for three years in order to open an RDC, a number of them decided to withdraw their participation. Furthermore, Paul Bernard had already been informed that CFI would prefer a "network" submission for a grant rather than submissions from individual universities, and that nine universities might be too many in a single application. The notion of "regional centres" was advanced in order to lessen the financial risk of creating more centres than would be necessary for meeting the expected demands of researchers at that time.

At the end of the meeting, Joseph Hubert, then Associate Dean of Research in the Faculty of Arts and Science at the University

of Montreal, accepted an invitation to prepare a proposal to submit to the CFI. It was the judgment of many that, without his support, the RDC project would never have gone forward. In turn, he asked Paul Bernard and Céline Le Bourdais (then Director of the Centre interuniversitaire d'études démographiques at the Institut national de la recherche scientifique (INRS)) to write up the academic portion of the grant application with the help of others, while he would address the financial portion.[26]

Following that October meeting, six universities in Quebec (Concordia, INRS, Laval, McGill, Université du Québec à Montréal (UQAM), and Montreal) decided they would collaborate in establishing a single centre in the province to be located at the University of Montreal. This would be called the Quebec Interuniversity Centre for Social Statistics (QICSS). In addition to recognizing the desire of the CFI to have regional centres, the Quebec consortium felt such a collaboration would be important in their ultimate success in convincing UNESCO to establish its proposed Statistical Institute at the University of Montreal. Indeed, one year later, Montreal was chosen over competitors from Birmingham, England and Paris, France.

In many ways, the QICSS can be described as a network within the national network. Here, the work of Jean Poirier deserves special recognition. As co-director of the QICSS since its opening, he has creatively coordinated the cooperation of the six original universities comprising the QICSS, as well as that of other universities that have joined them afterwards as partners or branches. This collaborative model has been a model of research in Quebec, and has also been rewarded by the Government of Quebec, which has provided it substantial funding over the years.

In the other regions of the country, consortia of universities were also being set up. It is noteworthy that a number of the Centres reflect their regional base in the titles of their units (see the list of RDCs in Appendix 1). As explained in the application to the CFI, all of them envisioned these RDCs, "*as the stepping stone for major*

developments in social statistics research in Canada" [italics in original]. [27]

The proposal to the CFI was prepared in record time. A letter of intent was sent in December of 1999, which included six universities. From east to west, they were: Dalhousie, Montreal, Toronto, Waterloo, Calgary, and British Columbia. The actual proposal was submitted January 31, 2000. The submission highlighted the urgency of acting on the situation. "*If the data access issue is not efficiently and rapidly addressed, not only will the new and innovative surveys be under-utilized and not yield their full research potential, but the major investments required to conduct these surveys will be lost*" [Italics in original].[28]

An International peer review under the auspices of SSHRC was held in April, and the full grant of $13,450,227, (composed of $8,070,138 of "in kind" support from Statistics Canada and $5,380,089 cash from the CFI) was approved in July 2000. In addition, SSHRC also gave a $225,000 grant in 2001, which it increased to $300,000 in 2002 and 2003, to support the daily operations of the Network (distinct from the infrastructure development grant provided by the CFI).

In the meantime, three other universities had begun their own process to create an RDC. McMaster University succeeded in securing funding from within its own university and the University of Alberta received a grant from the Province of Alberta. The University of New Brunswick gave its RDC a five-year loan, which was to be paid off from grants received by its Canadian Research Institute for Social Policy (CRISP). In December of 2000, McMaster opened the first RDC in the country. The New Brunswick RDC and the Alberta RDC, as well as the six Centres funded through the CFI grant, opened in the following months and, by the end of 2001, the Network counted nine operating RDCs.

The First Years of Operation

The first meeting of the RDC National Steering Committee was held on August 22, 2000, before any of the RDCs were open. A second meeting was held in April 2001, after the opening at McMaster and just before the opening of the QICSS in Montreal. At the November 26-27, 2001 meeting, just as the last of the nine Centres was opening, Paul Bernard was elected Chair of what was then called the Research Data Centre National Coordinating Committee (the coordinating committee).[29]

In addition to hearing reports from each of the RDCs, these early Network meetings addressed the peer review process for proposed research projects, security check procedures, the workload of the analysts working in the RDCs, and the long-term financing of RDC operations.

From the beginning, the Network's meetings included the Academic Director of each Centres, as well as representatives from Statistics Canada and SSHRC. Gustave Goldmann had a major role as the manager of the program at Statistics Canada from its inception until his retirement in 2010. Doug Norris and Garnett Picot, also from Statistics Canada, attended the meetings, and both were strong supporters of the Network. SSHRC was represented at the meetings originally by Maynard Collins, followed by Daryl Rock in 2002, and later by Marc Fonda (May 2004) and Mika Oehling (2007). While she did not attend the Network's meetings, Janet Halliwell, Executive Vice President of SSHRC, was always available for wise and supportive consultation. Since 2004, the Data Liberation Initiative has had a formal representative on the committee,[30] and after the Canadian Institutes of Health Research (CIHR) began jointly funding the Network in 2005, the agency was represented primarily by Nancy Mason MacLellan.

As mentioned earlier, the role of Paul Bernard in the development of the RDCs was pivotal. He was Chair of the joint working group that produced the landmark report to Statistics Canada

and SSHRC in December 1998 and, with Céline Le Bourdais, he took the leadership in the development of the grant application submitted to the CFI in January 2000. Once the award was announced, he chaired the coordinating committee that brought the directors of the new Centres together.

However, he was less interested in the leadership role once the Centres were off the ground. In the summer of 2002, he approached Raymond Currie, Dean Emeritus and retired Professor of Sociology at the University of Manitoba, and asked if he would be interested in becoming Chair of the coordinating committee (the title was changed to Executive Director in 2005 on a motion by Richard Wanner). While he knew Currie, the suggestion came from Keith Warriner at the University of Waterloo and Chuck Humphrey at the University of Alberta.

The process for making the appointment was unusual. Currie was invited to attend the October 2002 meeting as a guest and to get a first glimpse of the Network. At the end of the meeting he was asked to make a brief presentation on what vision and expertise he could bring to the Network;[31] he then left the room while the directors voted on whether or not to appoint him. The vote was positive and Currie headed the Network until his retirement in 2010.[32] Gustave Goldmann remained the manager of the program within Statistics Canada, and the two worked together harmoniously until the end of the decade.

Currie's first task was to create a functioning network with a more complete set of policies and procedures. The universities represented in the Network were of varying sizes, with different research priorities and policies.

Over the next few years, the Network became an effective decision-making body, with more than 30 issues addressed and documented in what became known as the Director's Handbook (for example: budget allocation, procedures to open an RDC, rules for accessing an RDC, etc.). The executive committee met twice a year: in Montreal (Oct. 2002), Edmonton (May 2003), Ottawa (Nov. 2003)

Vancouver (April 2004), Ottawa (Oct. 2004), Fredericton (May 2005), and Toronto (Nov. 2005). It was then decided that one of those meetings each year would be held in Ottawa, in order to be consistent with the goal of engaging policy makers whenever possible.

Continuing the work begun by Paul Bernard, among the first issues Currie addressed was a policy of confidentiality that would govern the access to data, specifically whether secondary analysis of RDC data sets is exempt from a research ethics review. After a great deal of discussion at various universities across the country, Harvey Krahn and Chuck Humphrey authored a paper that was approved by the University of Alberta in 2003 and which ultimately became the benchmark accepted across the country.[33] Henceforth, research based on the secondary analysis of Statistics Canada data housed in the RDCs would no longer require an ethics review, since the anonymity of respondents and confidentiality of the data were assured.

The governance procedures also had to be clarified. Among the myriad of issues addressed were, specifically: the roles of academic directors, analysts, Executive Director and Executive Committee, as well as the representation and voting procedures at the meetings (more on the governance below). Vetting of proposals, access to RDCs by non-member institutions and researchers, and fast tracking of student proposals were other pressing issues.

At these first meetings, the directors also developed a mission statement which reads:

> RDCs are research infrastructures which provide access to confidential data in accordance to the *Statistics Act*, which allows "deemed employees" of Statistics Canada to perform analysis under the same conditions of security and protection of privacy that apply to regular employees of Statistics Canada. Such access is granted to "deemed employees" after their research proposals have undergone a peer review process, managed jointly by the Social Sciences and Humanities Research Council of Canada (SSHRC) and Statistics Canada.

> Beyond providing access to confidential data, RDCs should contribute to the quantitative expansion and qualitative improvement of research and training in social statistics in Canada, as well as to the communication of research to the public, and to the improvement of data and data documentation (2002).

Finally, the allocation of the initial SSHRC budget among the RDCs consumed a great deal of time and reflection and, at times, generated heated discussion. This became known as the "allocation formula."

The Allocation Formula

At the origin of the Network, the prime financial consideration was the fact that setting up a centre at a university involved a standard set of expenses, no matter whether the centre had five or 15 work stations for researchers. These common costs included creating a site in compliance with the *Statistics Act* and a $100,000 annual fee to be paid to Statistics Canada for services. These services included acquisition of data from Statistics Canada and the presence of an analyst (employed by Statistics Canada) during all operating hours of a centre. The analysts assist academic researchers in initial use of the data and conduct necessary disclosure avoidance procedures, among a number of other tasks.

In the early years, the directors agreed to allocate over 80 percent of the council funds to these fixed costs. As the Network matured, the allocation for fixed costs declined gradually, replaced by an increased emphasis on rewarding activity and output. From 2005 to 2010, there was hardly a meeting of Academic Directors that did not involve some tweaking of the formula.

Even though directors recognized the formula was not perfect (and there was intense discussion about various options under consideration), it is remarkable that by the October 2009 meeting there was unanimous agreement on the components of the formula (see Box 3). Given the agreement achieved between such diverse

centres from across the country, it was jokingly suggested the Network could teach the politicians a bit about trying to reach constitutional and other agreements between provinces.

But the search for stable funding is probably the most challenging task the Network had to deal with in these early years.

Box 3 Allocation formula, 2009

A small portion of the budget is reserved for national commitments, including salaries and travel expenses of Network personnel (Executive Director, Network Coordinator, Knowledge Transfer Coordinator), administrative infrastructure, website development, and dissemination costs. The remainder is to be divided among RDCs and branches according to the following criteria:

Fixed component: To acknowledge the basic costs associated with operating an RDC or branch. These costs were determined after interviews with the analysts employed in the RDCs who identified tasks common to each site irrespective of the volume of research activity. "The allocation for fixed costs shall not exceed 32 percent and not exceed $25,000 for a Centre or $7,000 for a branch with adjustments for inflation." (Motion passed by the directors, April 24th, 2009)

Partner contribution: To recognize the cost-savings of having partners over establishing branches when the number of researchers at a given university is not high enough to warrant a branch on campus. An RDC receives an amount equal to 15 percent of the financial contribution received from its partner(s).

Research activity: To support the costs associated with higher volume of research activity. This amount is determined by the number of active dyads, a measure developed to account for the varying levels of research support needed by various types of users.

Research output: To acknowledge the importance of knowledge transfer. To this end, up to 20 percent of the funds available are to be awarded based on output measures.

The Search for Stable Funding

In addition to being active in establishing the Network in collaboration with the universities and Statistics Canada, SSHRC gave the Network annual operating grants for each of the three years from 2001 to 2004, distinct from the infrastructure needs addressed by the CFI funding.

These funds were available only to the six CFI applicants because they were judged by SSHRC to have undergone a peer review. On behalf of McMaster University, Byron Spencer wrote to SSHRC and asked to be included in the SSHRC grant, arguing that his own university had put up all the funds for opening its centre. SSHRC suggested the issue was best resolved within the Network. The directors were polled to see if they would agree to include the other three Centres (Alberta, McMaster, and New Brunswick) in the SSHRC funding. SSHRC then indicated that no funding could be awarded until a peer review was conducted at those Centres not included in the RDC application to the CFI. In the end, McMaster and Alberta were included in the funding from SSHRC, but no additional funds were forthcoming from SSHRC.

While there had been some differences of opinion among the directors about sharing the same level of funding with more universities, there was no disagreement that the universities were being asked to assume too high a financial burden. This was judged to be particularly unacceptable, because both the report of the joint working group in 1998 and the CFI application in 2000 indicated that the "main part of the operating costs" would be covered by SSHRC.[34]

Paul Bernard wrote to Marc Renaud of SSHRC and David Strangway of the CFI in November 2001. He indicated that the Network could not operate on $300,000 a year and asked for additional operating funds because universities had to put in too much. "Financing should be tackled at the national level," he wrote, "not piecewise in the various university consortia that are involved in

the different RDCs. We need a competitive program for the support of existing social sciences infrastructure." The request was not granted.

The Network considered several options to try to find other sources of funding. At the May 2003 meeting of the directors, consideration was given to applying for a National Centre of Excellence grant; but for a variety of reasons (the main one being the lack of focus by the RDCs on a particular substantive area of excellence), the idea was voted down at the November 2003 meeting. Unlike a Centre of Excellence, as defined by the Federal Government, the CRDCN does not directly set the priorities of research. The researchers who use the RDCs are experts in approximately 30 different disciplines and in an even broader range of topics, and they choose their own topics for investigation.

Inquiries about an application for funding from the National Sciences and Engineering Research Council of Canada (NSERC) were also made, but it quickly became clear the Network likely would not be successful in such an undertaking.

Finally, an unsuccessful approach was made to try to "get on the agenda" of a meeting of Vice Presidents of research at universities.[35] While there was support from individuals, the Network was encouraged to go to the national granting councils for long-term funding.

Obtaining a Multi-Year Grant, 2005-2009

The Network thus decided to apply to SSHRC for a five-year grant. But this time it would request a joint grant with CIHR. This would take time. For that reason, in December 2003, Raymond Currie wrote a three-page letter to SSHRC, requesting a year of bridge funding for the period April 1, 2004 to March 31, 2005. Seven reasons were listed for requesting that extension (see Box 4). A review of these points illustrates how much in its beginning stages the Network was, while still actively planning for the future. SSHRC agreed to the request.

As mentioned in the letter to SSHRC, the Network was already engaged in conversations with CIHR to encourage their participation in a joint award with SSHRC. This required more than a full year of negotiations.

Box 4 Request for funding extension (2003)

- The Network is in the midst of expansion. Currently there are nine Centres, eight accessible to funding by SSHRC. In the next year, there are likely to be three new Centres at the Universities of Manitoba, Ottawa/Carleton, and Western Ontario. The University of New Brunswick would also like to be eligible for funding in the next cycle.
- The Network has been in consultation with CIHR to request funding from that agency to assist with infrastructure costs. In fact, Mark Bisby has suggested that CIHR is willing to consider cooperating with SSHRC in a joint evaluation of RDCs for infrastructure support.
- The Network has been very successful in attracting researchers to the Centres. As of November 2003, there are 341 research projects associated with the Centres involving 566 researchers primarily using six major data sets. By the end of December 2003, we will be able to furnish a comprehensive description of the disposition of the research up to that date. That will include working papers, publications in *Statistics Canada Daily*, journal articles, and other vehicles of dissemination.
- The Network is moving very decisively toward creating an infrastructure for the link between researchers and policy users. To be successful, this will involve a number of activities: 1) creating a job description for an expert in knowledge mobilization and transfer; 2) creating a website that will list all research activities in the Centres; 3) sponsoring a national theme-based annual conference (already underway); 4) designing an appropriate structure to award two annual grants to senior researchers capable of creating syntheses of already completed research projects; and 5) working with policy users to plan new projects of particular relevance to them. We are currently in discussion with CIHR for some funding in 2003-04 that would allow us to undertake some of these activities, even during the bridge funding year.

Box 4 Continued

- The Network needs to work out its financial Network and local expenses in a comprehensive, equitable, and agreed-upon formula prior to applying for a new cycle of grants.
- The Network needs to plan how it will deal with the costs of future expansion through new Centres and/or satellites.
- The Network needs to address its long-term viability as a financially sound, high-quality research network.

Note: Excerpted from a letter to SSHRC, December 2003.

Several steps were important. Michael Wolfson, then at Statistics Canada, carried on correspondence over the spring and summer of 2003 with the President of CIHR, Alan Bernstein, and with the Vice President of the Research Portfolio, Mark Bisby. In the first instance, Mark Bisby preferred a funding model in which researchers would pay fees for access to the RDC facilities.[36]

In November 2003, Raymond Currie and Garnett Picot met with Mark Bisby, John Frank (Scientific Director of the Institute of Population and Public Health), and Morris Barer (Scientific Director of the Institute of Health Services and Policy Research) in order to discuss further the possibility of CIHR funding. In particular, the meeting addressed the desire for a block grant from CIHR, as well as the complex problems that would arise from charging user fees for researchers using the RDCs.[37] Two days later, Pam Dagenais, manager of the Research Portfolio Operations of CIHR, wrote to Raymond Currie asking for a two-page document on how CIHR could help with one-time funding in the current fiscal year (2003-04) and also asking him to inform SSHRC that CIHR "might be interested in joining with SSHRC in the review of the RDCs for their next round of funding in 2005."[38]

On February 10, 2004, Mark Bisby wrote to Raymond Currie to inform him that CIHR would not be able to provide the requested one-

time funding. But he explained that "this is not a permanent refusal of CIHR to provide funding for the RDCs. What I have to find is a mechanism which allows a request for RDC support to be subject to peer review." He proposed two alternative strategies. One would be for CIHR:

> To participate with SSHRC in the review of its renewal of RDC funding, which I understand will be coming up in the next fiscal year.
>
> The scope and scale of the RDC application would take into account that it would be supporting researchers in both the social sciences and the health sciences. This would require an up-front decision by CIHR's governing council to share in the infrastructure funding of the RDCs with SSHRC, subject to peer review, but, once that decision was taken, a positive recommendation from the reviewers would trigger funding…[39]

In the meantime, the Network responded to the concerns of Ivan Fellegi and Michael Sheridan, then Assistant Chief Statistician, by preparing a 50-page compilation of RDC-based publications. One of the clear findings was that close to 50 percent of the publications were health-related. The report was submitted to Michael Sheridan on January 7, 2004. It is our understanding that the report played a pivotal role in convincing CIHR to join with SSHRC in receiving a joint proposal for a grant for the period 2005-2010.[40]

Once the green light was given to proceed, Raymond Currie took the lead in preparing the joint SSHRC/CIHR grant application, with a great deal of feedback from the directors. The grant was submitted on October 15, 2004. The request was for $2,000,000 a year for five years. This would mean that the councils and the universities would each pay for 50 percent of the operating costs. Facing the obvious shortfall of funding when the Network began, both Paul Bernard and Bruce Hutchinson at Queen's suggested we request matching funds from the councils. Prior to the decision, during the process of the grant review, Marc Fonda at SSHRC was aware that SSHRC was funding only 7.4 percent of the total costs.[41]

In spite of the recommendation from the international peer review committee that the Network should receive funding "as requested," the Network actually received $4.4 million from SSHRC over the next five years and another $3 million from CIHR, for a total of $7.4 million, or 74 percent of its request. This was due to the tight financial times and the relatively new concept of jointly funding a program by the two councils. This $1.48 million a year was a vast improvement over the previous $300,000 a year.

"Integrating New Initiatives for a Stronger Future": Obtaining a New Grant, 2010-15

In 2009, the Network applied for a second five-year grant from the councils.[42] Since the first five-year grant had been awarded, in 2005, the mandate of the two national councils had changed somewhat in that all funding for health-related research, including the social dimensions, was moved from SSHRC to CIHR. It became all the more imperative that the CRDCN receive support from CIHR. In fact, when the second grant was announced in 2009, SSHRC stated that the funding was contingent on an equal contribution from CIHR.

In this second joint grant application process, several institute directors within CIHR became some of the Network's strongest advocates.

For instance, Colleen Flood, the Scientific Director of the Canadian Institute for Health Services and Policy Research, argued that the CRDCN was, for CIHR health services and policy researchers as well as for population and public health researchers, the equivalent of the bench laboratories for basic science researchers and of the hospital research laboratories for clinical scientists. She thought that the Network was an essential national health data infrastructure, critical to the success, quality, and impact of health research in Canada. The reference to bench laboratories in the basic sciences was a particularly helpful analogy. The preparation of the submission was also strengthened significantly by the work of Heather Juby, who had

been hired by the Network as the Knowledge Transfer Coordinator in October 2006.

Approval for the grant was not a slam dunk. On April 8, 2009, Raymond Currie, Gustave Goldmann, and Byron Spencer made a presentation to SSHRC in the presence of President Chad Gaffield, Vice President (Research) Gisèle Yasmeen, and the Director of Strategic Programs and Joint Initiatives Murielle Gagnon. That same summer, Raymond Currie had four separate phone conversations with CIHR officials. In addition to the 82-page submission, he and Heather Juby prepared 30 pages of "Briefing Notes" for a July 14th conference call. He then sent additional notes to Colleen Flood, the Network's designated "champion" within CIHR. She, in turn, contacted Jane Aubin, Chair of the CIHR Scientific Council's Subcommittee on Planning and Partnerships, to respond to outstanding issues that had arisen from the briefing.

The formal proposal was submitted in October 2009. On March 24, 2010, Byron Spencer, Chair of the Executive committee, and Raymond F. Currie, Executive Director, held a conference call with the International Evaluation Committee to discuss the CRDCN submission. The two Network representatives were given 15 minutes to respond to seven criteria on which it was to be judged, followed by a 45-minute question and answer period (see Box 5). In late August 2010, the success of the application was confirmed and each of the two councils awarded the Network a five-year grant of $5,750,000.00.

Box 5 Evaluation criteria

1. Record of accomplishments
2. Research priorities
3. Objectives of the RDCs and the Network
4. The policy linkages of the Network
5. Governance structure between the Centres and the Network
6. Knowledge mobilization activities
7. The training of a new generation of experts

Note: International Peer Review Committee, March 2010.

Expansion of the Network

While funding was a key concern for the leadership of the Network over the whole decade, most researchers at the universities would have been unaware of its constant demands and its intricacies. From a researcher's point of view, access to data was the key concern.

Interest in the RDCs developed quickly from the first openings, and researchers at many universities across the country were soon clamouring for a local facility. With the exception of holders of SSHRC or CIHR research grants, who always had free access, researchers at other universities could use the RDCs for a fee even though their own university was not affiliated with an RDC. However, as the number of researchers increased at such universities, and when the travel distance was substantial, the researchers pressed to have more convenient access. Given the size of the country, the original regional representation across Canada was too limited. Researchers who did not have a facility in their city had to travel long distances while others had to travel excessive travel time in their own city for access to the data.[43]

But the cost of opening an RDC is high. A special room has to be constructed (or renovated) on each campus, a room that meets stringent requirements of Statistics Canada, the RCMP, and the Treasury Board to ensure confidentiality in the handling of the data. Hardware and software has to be purchased.

The operating costs are also significant and require monetary commitments from the universities, Statistics Canada, and SSHRC. Until 2005, the grant from SSHRC was so small ($300,000 a year) that adding new facilities posed a potential financial hardship on the existing Centres. For that reason, it was decided that any new RDCs would not have access to SSHRC funding until a new grant application was submitted and was successful. A set of guidelines was developed, and any new applicants had to commit $100,000 a year to Statistics

Canada for a minimum of three years before the application could be considered.[44]

In 2004, the CRDCN began to distinguish formally between three different types of facility (RDCs, branches, and partners), a distinction that had begun to evolve with the concept of university consortia. The idea first developed in Quebec. The goal was to avoid needless duplication of RDCs, while strengthening access to the data and increasing the level of activity.

The facilities were described as follows:

- A Research Data Centre is a full-fledged secured facility located at a university and staffed by an analyst employed by Statistics Canada.
- A branch is a smaller research facility at a university that is affiliated with an existing RDC at another university. The branch meets the security requirements of Statistics Canada and is staffed by a statistical assistant employed by Statistics Canada but depends upon its home RDC for disclosure avoidance analysis. It is open a limited number of hours and has a small number of stations.
- A partner is a university that contributes financially to an RDC at another university for the convenience of its own researchers.

That is the context in which the RDC Network expanded. The University of Manitoba opened its RDC in August 2004. This Centre was greatly assisted by an annual grant from the Manitoba Council on Post-Secondary Education, the arm's length body in the province that awarded the operating grants to Manitoba's universities. It serves all university researchers in the province. Shortly thereafter, the University of Western Ontario opened an RDC after receiving a CFI grant for their innovative proposal. Prior to that date, its researchers had been traveling to Centres at McMaster, Toronto, or Waterloo. Queen's University opened a Centre with half-time operation in late 2004. The COOL (Carleton, Ottawa, Outaouais Local) RDC officially opened at the University of Ottawa on September 20, 2005. In order

to accommodate interest in the longitudinal data by government researchers, the Federal RDC opened in 2005 for their use. In the spring of 2005, the CRDCN approved the first two branches of the Network at the Universities of Laval and Sherbrooke (attached to the QICSS).

At the fall 2005 meeting, four more branches were accepted, at the University of Victoria (a branch of the British Colombia Interuniversity RDC) and Laurentian University (a branch of Waterloo), as well as at McGill University and UQAM (branches of the QICSS). A request by Brock University, then a partner of the South Western Ontario RDC located at the University of Waterloo, was not supported on the grounds that there would not be enough researchers to warrant the costs of a branch. In 2010, a branch of the Manitoba RDC was approved in Yellowknife, but the opening of this facility had to be postponed when a small plane crashed into the building. The most recent addition, in 2013, is Memorial University in Newfoundland and Labrador, which is a branch of the UNB RDC. By then there were 27 facilities, including 14 RDCs and 13 branches (see Appendix 2 for a map showing the locale of each RDC and branch).

A remarkable aspect of this Network is the multiplicity of financial arrangements that were developed. Some Centres received federal grants and others received funding, either from their provincial governments or from agencies under provincial jurisdiction. All received substantial support from their universities. Once the advantages of an RDC were identified in a given university, creative financial solutions were found. The result has been an expansion that was undreamed of a decade ago.

Changing of the Guard

The year 2010 was marked by significant changes in the leadership of the Network. On April 1st, 2010, Robert McNutt was appointed the Executive Director and replaced Raymond Currie, who had retired. McNutt brought a wealth of experience in academic administration,

having served for seven years as the principal of the University of Toronto at Mississauga (formerly Erindale College). In his 30 years at McMaster, he served as Chair of the Department of Geology, as Dean of the Faculty of Science, acting Chair of Modern Languages, and advisor to the Provost.

For the first time, the Network would have a full-time Coordinator, Joe Di Francesco, who was hired in August 2010 from his previous position as Secretary in the Faculty of the Humanities at McMaster.

Coincident with the change in the Executive Director, the headquarters of the Network was moved from the University of Manitoba in Winnipeg to McMaster University in Hamilton. These changes were prepared for some time in advance. Knowing that Raymond Currie was retiring, Byron Spencer from McMaster agreed to be the Principal Investigator on the 2010-15 application to the councils. An outstanding economist, Spencer has been the only Academic Director of the McMaster RDC since it opened in December 2010. He has also been the Chair of the Executive Committee since the committee was created in 2003.

In the same period, Gustave Goldmann retired from Statistics Canada after coordinating the ever-expanding CRDCN responsibilities within Statistics Canada from its origins. Prior to his retirement, Statistics Canada had created a Microdata Access Division in order to: coordinate support and services to the CRDCN within Statistics Canada; provide support for the real-time remote access (RTRA) program; and be the centre of expertise and coordination for disclosure review for microdata projects. A six-month overlap in responsibilities facilitated a seamless transition for his successor, Heather Dryburgh.

Heather Juby, the Network's first Knowledge Transfer Coordinator, also retired in March 2011 and was replaced in September 2011 by Sarah Fortin, formerly a Research Director at the Institute for Research on Public Policy.

Céline Le Bourdais also resigned as Academic Director of the QICSS in order to devote herself full time to her responsibilities as a Canada Research Chair in Social Statistics and Family Change at McGill University. While Le Bourdais did not hold a leadership position in the Network per se, she nevertheless played a major role in the original grant proposals to SSHRC and the CFI, which established the Network, was a member of the Executive committee, set up the original training school for students and researchers funded by SSHRC, and was a strong advocate for and advisor within the Network during her 10 years as Academic Director.

Major Goals and Achievements

Facilitating Access to Data for Research Purposes

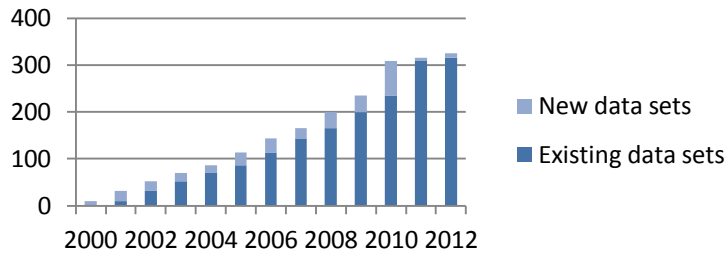
The first aim of the RDCs was to receive copies of data bases from Statistics Canada headquarters and store them in secure locations (i.e., in locations with no electronic or physical connection to the outside world) and in proximity to researchers, while still meeting the confidentiality requirements of the *Statistics Act*.

Thanks to significant and sustained efforts by Statistics Canada, the Network gradually secured access to the data from an increasing number of surveys (longitudinal and cross-sectional) and past (as well as current) censuses. In the beginning, the Network housed six data sets. In 2005, Doug Norris from Statistics Canada told the Academic Directors they could expect on average about 10 new data sets a year. That estimate turned out to be far too modest. As of December 2012, the total number of data sets was 325 (see Chart 1).[45]

More recently, a great deal of effort has been invested into adding administrative data sets to the Network's data holdings. Indeed, analytical files from various administrative data sets, many of which are assembled as a by-product of administering government programs – health care, justice, employment insurance, Canada Pension Plan,

etc. – are currently being prepared for access in the RDCs. In addition, following the cancellation of the longitudinal surveys, a new project at Statistics Canada was launched in 2013 to extend the relevance and research potential of the existing surveys, including the National Population Health Survey and the Longitudinal Survey of Immigrants to Canada, by adding outcome variables from recent administrative information to each file.

Chart 1 Number of data sets in the RDCs, 2000-2012



For a number of years, access to all these data in the RDCs was a somewhat cumbersome process. The data were encrypted and sent by courier to the Centres. As will be seen later, this method of data transmission was to change when the Network introduced a "wide area network" (WAN) in 2010.

No matter what the method of data access, once the data are accessible to researchers in an RDC, the analysts, at least one of whom is assigned to each Centre, have always played an important role in the research process, in addition to their primary responsibility of controlling confidentiality. They notably help RDC researchers prepare their data analysis specifications; they provide technical help and assistance with the manipulation of complex files and the application of advanced analytical procedures; they guide researchers through the documentation that comes along with the data and provide supplementary information when data are used in extraordinary ways; and they ensure that the information generated in this process is incorporated as value-added in the documentation of the databases.

In other words, analysts are active members of the local research community.[46] In brief, the vision was that RDCs would become major centres of scientific exchanges and knowledge production.

Use of the RDCs by Researchers

Over 4,000 individual researchers from across the country have used an RDC over the last decade. That is a remarkable achievement in and of itself. It deserves to be mentioned that this activity level has far exceeded the expectations as the project was being planned.

Economics, demography, and sociology are the most common disciplines in the Network but there are some dozen others with significant levels of activity, and, in total, over 25 disciplines are represented.[47] It is also notable that much of the research undertaken by those whose disciplines are economics and sociology is health related. In fact, it was on that basis that CIHR was convinced to contribute to the funding of the Network.

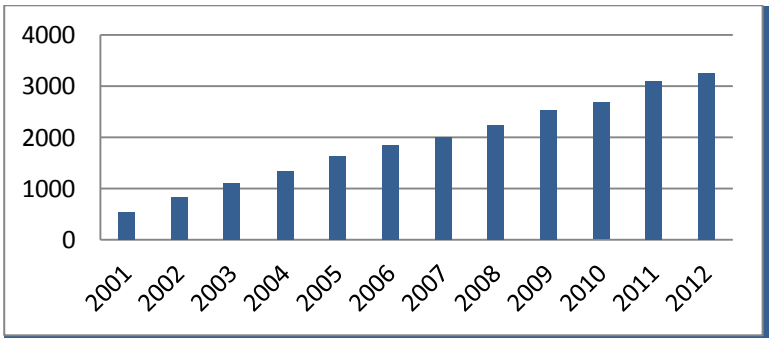
The rich and diverse research undertaken has advanced knowledge on mental health, obesity, immigrant integration, retirement readiness, transitions to and from the labour market, caregiving, and a host of other topics that are relevant from both a research and policy perspective.

For the needs of the Network, this simple count of researchers does not provide the most useful picture of the research activity. Researchers and projects are not synonymous. A number of researchers have completed several projects, alone or with others, while a number of projects involve a large number of researchers. Of course, projects with more researchers require more resources to administer. Furthermore, there are large differences in the sizes of the universities and the number of active researchers, as well as differences in the manner in which collaboration on research is undertaken, whether it is within universities or between universities.

A survey conducted by Darren Lauzon of Statistics Canada also found that student researchers require more support than do experienced researchers.

Faced with these varying components of research activity, a procedure was needed to arrive at an equitable allocation of scarce financial resources. The Network developed the concept of "researcher/project dyad" to express the research activity associated with a given project and to account for the varying levels of resources needed. After several adjustments, the Network agreed to this activity measure. One unit was assigned for each academic researcher, up to a maximum of four per project, while each student was assigned a unit and a half. Chart 2 illustrates the dramatic growth in research activity in the Network according to this measurement.[48]

Chart 2 Number of active dyads, 2001-2012



The Measurement of Research Output

In the submission of the second five-year application to the granting councils in 2009, the Network identified five funding needs. The most significant change from the needs outlined in the previous grant in 2005 was a shift from funding infrastructure (common to all Centres) almost exclusively, to funding outputs (varying significantly across Centres) to a greater extent. Output would now count for 20 percent of the funding available. Specifically, the directors identified 14 "output measures" weighted according to what the directors judged to be their relative importance (see Table 1).

From then on, it became even more imperative for RDCs to document their impact in terms of publications and activities, if they wanted to receive their fair share of the grant allocation.

Until then, researchers had been invited to fill in a brief annual questionnaire about their RDC-related publications and activities; these helped RDCs to prepare their annual reports. But many researchers failed or delayed doing so. While such reporting was considered normal for applying for tenure or promotion, and perhaps for merit pay considerations, it took time and effort to get researchers to understand that it was also important to do so for RDC access and accountability purposes. The message slowly sank in, and the introduction of an online questionnaire in 2012 greatly facilitated the collection process for both the researchers and the RDCs.

Table 1 Output criteria and relative weighting for budget allocation purposes

Relative weight	Criteria
0.5	Completed project in the RDC
2.0	Book
1.0	Edited book
1.0	Book chapter
1.5	Refereed article
0.5	Working paper
1.0	Policy report
2.0	Ph.D. thesis
1.0	MA & honor dissertation
2.0	Full-year graduate course (6 credits)
1.0	Semester graduate course (3 credits)
0.5	Conference presentation or invited talk
2.0	Hosting CRDCN annual conference
0.5 to 1.0	Conference session, workshop or symposia

It should not be surprising that publications (refereed articles, books, book chapters and edited books) account for approximately half of the overall output (see Table 2) .[49] This is the traditional breadand butter of academic research activity. Student output accounts for about one fifth of the total output in the form of Honours, MA and Ph.D. completions. The number of policy reports, whether to government or non-profit organizations, has risen over the years but it remains a relatively modest activity.

Table 2 Selected outputs, 2001-2012 (N)

Output	2001-2004	2005-2009	2010-2013	Total
Publications	129	661	802	1,592
MA & Ph.D.	43	238	288	569
Policy reports	24	176	197	397
Working papers	34	180	184	398
Total	230	1,255	1,471	2,956

Whether or not the activity level increases at the same pace in the future will depend on several factors. Government interest in research fluctuates over time, both in its direct funding, but also in its commitment to the value of social science research. The cancellation of the long-form census in 2011 and the termination of all but one longitudinal survey in the last few years will definitely have a negative impact on future research. Longitudinal data in Canada will become outdated and researchers will have to depend more on data from other countries that are not always relevant to the Canadian situation. Fortunately, current work to link these datasets with administrative data will greatly prolong their usefulness. And several pilot projects are currently ongoing to evaluate how administrative datasets from the federal and provincial governments could be made available in the RDCs. These initiatives offer a much more positive horizon.

Expanding the Pool of Trained Researchers

The diagnosis of the joint working group in 1998 regarding Canada's lack of capacity to analyze large and increasingly complex data files was widely shared by the Academic Directors from the very beginning of the Network. Indeed, the importance of training was formally recognized in the mission mandate adopted in 2002 as one of three fundamental objectives of the Network. Along with data access and knowledge transfer, a key element of the Network's activities has been to ensure that the new generation of social scientists is suitably equipped to analyze these complex data files and that the skills of established researchers keep pace with both technological advancements and data set developments.

In fact, as early as 1999, the first data training school was organized in Montreal by Céline Le Bourdais as a summer school pilot project, months before the formal partnership between SSHRC and Statistics Canada was even signed and the RDCs were funded. By the next year, there was a formal "Data Training Schools Program," with a national competition sponsored by SSHRC. Three projects were funded: the University of Montreal and the INRS (submitted by Céline Le Bourdais and Benoît Laplante); York University (Michael Ornstein); and the University of New Brunswick (Doug Willms). In 2001, there was another one year of funding for the training program at the University of Alberta (Sin Ma), which was added to the previous three.

The following year, three-year awards were established. Each school received $50,000 per year, and the participants included graduate students, postdoctoral students, academics, and government officials. From a small group of 12 students, the number of participants mushroomed to over 300.[50]

These training schools were funded until the last three-year award expired in 2011. Despite the end of this funding, the QICSS and the University of Western Ontario RDC still offered summer schools in 2012 and 2013.

As another "first" for the Network, Michael Boyle at McMaster University was assisted in 2004 by Byron Spencer in obtaining permission from Statistics Canada to offer a course on research methodology and statistics in the McMaster RDC.[51] As Boyle described it, the goals were: 1) to create an interdisciplinary forum for graduate students at the Ph.D. level to address a specific research question through secondary analysis of Statistics Canada data sets; 2) to develop statistical and methodological skills needed for secondary analysis of complex, longitudinal data; and 3) to produce a paper of sufficient quality that would merit submission to a peer-reviewed journal.[52]

To gain admission to the course, each student, with help from the instructors, had to develop an answerable question in the fall so they could enter the course in the winter term (January). There have been several advantages to this course. In the previous decade, there was clear evidence of a decline in the proportion of social science students with sophisticated quantitative skills emerging from Canadian universities. Furthermore, academic requirements, administrative procedures, and cultural insularity in university departments can hinder students who have interdisciplinary experiences. These courses addressed all these concerns. The project was a complete success, and within a few years virtually all RDCs offered such graduate courses.

In addition, all RDCs have offered a variety of training opportunities on a regular basis, including introductory and advanced level methodological workshops on major statistical analysis software (e.g., SAS, Stata, SPSS, and R), seminars on analytical methods of complex survey data (e.g., bootstrapping, structural equation modelling, R graphics, correspondence analysis, multilevel and panel modeling) or data seminars introducing new data sets available in the RDCs.

To encourage students to undertake quantitative research in their graduate work, several RDCs also offer grants and fellowships.

The QICSS alone has offered hundreds of such scholarships over the years.

The importance of training for the Network is probably best illustrated by the fact that students have consistently comprised a significant share of its users. While the number of researchers accessing an RDC has grown tremendously, from virtually zero in 2001 to about 3,300 in 2012, the share of student among them has remained fairly constant over time, counting for between 25 to 35 percent of users through the years. For example, among the 1,500 researchers who used an RDC in 2012-13, 600 were students. Even more strikingly, 224 doctoral dissertations and 301 MA or honours theses using microdata were completed in a little more than 10 years.

Beyond formal training, graduate students are also gaining valuable experience through employment as research assistants to academic researchers or as analysts or statistical assistants in the RDCs. They also develop key skills by participating in various conferences.

At the Network level, they can attend the RDC annual conference, where they meet other researchers. Because learning to communicate research findings prepares them for a successful career, they are encouraged to submit a proposal to actually present their research results, either as a poster or in regular sessions. In 2009, a prize for the best student posters was created to reward not only research quality but also the ability to communicate a research message. Annually, the QICSS also organizes a one-day conference specifically dedicated to these young researchers. And, during her mandate as knowledge transfer Coordinator, Heather Juby regularly organized communication workshops to help students develop their communication abilities.

Whether through working in the RDCs, conducting their own research projects, or participating in conferences, the level of student activity in the Network augurs well for the future of methodological and statistical skill development in Canada.

Making Research Count

The third issue identified in 1998 by the joint working group was the need to reinforce the "links between the work of social scientists and the potential users of the knowledge they generate."

Reflections and discussions about knowledge transfer (KT) and the impact of the social sciences on society are not new, but they have become much more common over the last 20 years due to a number of factors, including: a changing governance structure (whereby governments have come to increasingly rely on external expertise in addition to in-house research for obtaining the evidence to support policy-making); a growing focus on evidence-based policy and decision-making; and the requirements of granting agencies here and abroad. The changing nature of research discussed in the introduction is also part of the new research climate. As Huw Davies and colleagues write: "Knowledge transfer has infused the academic literature, infiltrated the policy discourse, raised the aspirations of funding bodies, and entered the lexicon of universities' strategic visions."[53]

Simply put, KT can be defined as a process that aims at facilitating the adoption of evidence-informed practices and public policies, and it does so by developing means and processes that facilitate the uptake of research results by decision makers and practitioners.[54]

In Canada, interest in KT began in the 1990s and has grown substantially from the early part of 2000 on, with the health care sector taking the leadership. For instance, the Canadian Health Services Research Foundation (CHSRF) was created in 1996 by the federal government with a mandate to focus "on filling the evidence vacuum" and "using research effectively." The CHSRF changed its name to the Canadian Foundation for Healthcare Improvement (CFHI) in 2012 and expanded its mission and mandate; but since its beginnings it has devoted considerable efforts to increasing knowledge dissemination, and continues to do so.[55] Similarly,

knowledge transfer was a key issue behind the foundation of the CIHR in 2000.

Initiatives such as the Canadian Employment Research Forum (CERF) in 1991 and the Metropolis networks in the mid-1990s were both, at least in part, aimed at improving collaboration and exchange between academics, decision makers, and the larger community, especially NGOs.[56] This demonstrates that KT issues were also a concern in the social sciences. The recommendation by the joint working group in 1998 to create "research forums" to help fill the gap between researchers and policy makers also attests to this fact. Interestingly enough, the proposed forums were modeled on the CERF experience.[57]

However, unlike its recommendations about access to data and about training, the recommendations regarding how to break the barriers between researchers and decision makers were not immediately implemented.[58] It was only a few years later that SSHRC started to give serious attention to this kind of issue.[59] The "knowledge clusters" developed in the mid-2000s (such as the Population Change and Lifecourse Strategic Knowledge Cluster) do bear some similarities to the research forums proposed by the joint working group. In fact, some of these clusters were headed by researchers involved in an RDC, including several Academic Directors.60 But no research forums, nor any knowledge clusters, have been created within the Network as such.

Due to the requirements of actually building the first RDCs, it took a few years before KT initiatives were undertaken in a more systematic fashion.

In that regard, the hiring of a KT Coordinator in October 2006 is a turning point. This decision shows the high priority placed on this portion of the Network's mandate, in spite of the fact that it took away funds that otherwise would have been distributed to the RDCs. Heather Juby very effectively held the position until her retirement in 2011, when Sarah Fortin was hired. In addition to identifying the role itself, Juby enhanced, coordinated, and initiated a number of

complementary projects, notably the development of the CRDCN website, which was launched in late 2009. Building on these breakthroughs, Fortin brought new breath to the Network's KT activities by submitting a five-year plan shortly after her appointment.[61]

Generally speaking, there are many difficulties associated with carrying out KT in any research field, due to the nature of policy-making and of research. On the one hand, policy making is not the mere application of research findings. No matter how indisputable it may be, evidence is not the sole consideration in shaping policies; values, ideology, and budget, for instance, also come into play. Moreover, research output and policy needs are rarely synchronized, making it difficult to provide the needed evidence in a timely fashion: "Policy-makers seldom signal a need for research findings in advance and it is too late to start research when the issue is on the table," as Caroline Pestieau points out.[62]

On the other hand, science rarely provides definitive answers, which can be a problem for policy-makers looking for clear and undisputable solutions. In the words of Sir Peter Gluckman: "Increasingly science is being applied to systems that are complex, non-linear, and dynamic. (…) This type of science almost never produces absolute answers, but serves to elucidate interactions and reduce uncertainties. Precision is not the outcome, rather an assessment of probabilities."[63]

Moreover, and though the situation is improving, the value of KT is still not yet fully appreciated among researchers, universities, and granting bodies. This is due to, among other factors, the culture of academia (where research may be seen as playing a challenging rather than instrumental role to policy-making) and to the reward system in universities. As stated by Ward et al.: "…traditional approaches to assessing research excellence have hinged on the quantity of rigorous, peer-reviewed research outputs. (…) knowledge translation will remain a marginalised activity for many researchers until it forms part

of the reward system," through tenure and promotion criteria for instance.[64]

In addition to these general obstacles, the CRDCN faced four other specific challenges:

- The CRDCN is not mandated to develop a research agenda. The research carried out through the Network is not limited to one issue and it involves a variety disciplines and research fields.
- The CRDCN is an infrastructure that is somewhat similar to a library. In this context, the Network is not intuitively thought of as an organisation that should facilitate knowledge transfer.
- The value-added dimension of social statistics compared to other knowledge-generating methods in social science is not easy for non-experts to understand. Social statistics is a complex science that requires sophisticated capacities to fully appreciate its contribution, and it is not in and of itself user-friendly.
- The decentralized nature of the Network makes it more difficult to develop mechanisms for reporting and monitoring outputs that would allow the initiation of KT activities on a timely basis.

In spite of these general and specific obstacles, the record of accomplishments in KT within the CRDCN is quite impressive. We review them below.

Annual Conference

Each year since 2003, the CRDCN's annual conference has brought together researchers from different disciplines to present and discuss with members of the policy community the implications of research findings. These conferences are held specifically to help overcome the "weak links between the work of social scientists and the potential users of the knowledge they generate." In other words, rather than simply a one-way transfer of knowledge, the annual

conference is meant to create interaction between social scientists, policy makers, and practitioners. The first conference organized by Michael Veall was held in September 2003 at McMaster University (the themes of the annual conferences are listed in Appendix 3).

The Network's desire to create the best possible dialogue is reflected in two principles underlying the conferences: first, a request that presenters design their presentation for those outside their discipline; and second, an attempt to balance the number of researchers presenting papers with an equal number of policy makers.

The policy community's desire to enter into this dialogue is reflected first in the financial support offered by relevant government departments. Citizenship and Immigration Canada (CIC), for example, contributed $25,000 to the 2008 conference on "Migration, Policy and Society", hosted by the COOL RDC in Ottawa, while the Ontario Ministry of Health and Long-term Care supported the 2009 conference on "Health over the Life Course," organized jointly by the UWO RDC and the Aging and Health Research Centre.

The chairs of the conferences have made a concerted effort to attract policy makers to the program as keynote speakers, session chairs, and discussants to relate the research presented to their own areas of responsibility. They are also encouraged to attend as participants.[65]

Recently, efforts have been put into developing more enduring output from these meetings. In 2011, for instance, a report summarizing the main knowledge and data gaps identified during the conference on the policy impact of an aging population was prepared and posted on the website.[66] In 2012 and 2013, the presentations were recorded and made available together with the PowerPoint presentations on the website and on YouTube.[67]

CRDCN Website

Together with the hiring of the first KT coordinator in late 2006, the development of the CRDCN website in 2008-2009 is

probably the single most important KT initiative in the history of the CRDCN. With the assistance of Penar Musaraj, web developer, and of Philippe Valois, webmaster, Heather Juby was instrumental in bringing this important project to fruition. After several months of preparation, the website was launched in late 2009.

In today's world of information and communication technologies, the development of the website was not only imperative but also decisive. It remains to this day the most important means to communicate research findings, as the increase in the number of visits attests. While still relatively modest compared to other websites, the number of visits has grown tremendously since 2010. With fewer than 500 visits per month when it was launched, the average was in the range of 3,000 visits a month in 2013. Table 3 summarizes the main results for the first four years of activity.

In addition to offering access to the online bibliography and to providing basic information about the Network, the site offers information on the latest data available in the RDCs, highlights recent publications, announces training opportunities, and provides links to all RDCs across the country and to Statistics Canada's RDC program.

Table 3: CRDCN website activity, 2010- 2013 (N)

Year	Visits	Pages Viewed	Downloads
2010	8,925	39,105	457
2011	20,457	66,166	1,300
2012	28,724	89,347	2,385
2013	40,226	104,427	1,735

Source: Google Analytics

The website is a work in progress, and is constantly being upgraded. For instance, new features such as forthcoming luncheons and

training sessions have been added on the home page, and new sections have been created. An "event" section has been available since 2011. The idea is to inform visitors of all activities taking place throughout the Network and to inform researchers of activities organized by others that could be of interest to them. It also serves to archive the annual conferences output (e.g., PowerPoint presentations). More recently, the "KT Corner" and the "CRDCN experts" sections have been added. The KT Corner is a particularly original addition that aims at increasing the dissemination of research findings, and at increasing awareness of KT issues among researchers.

Publications and Partnerships

The online bibliography is one of the key highlights of the website and one of the top destinations for those entering the site. It lists all RDC-related publications, including scientific articles in academic journals, policy reports (to royal commissions, government committees, and commissioned reports), as well as MA and Ph.D. theses.

The development of the bibliography has been gradual, with the real expansion occurring after 2008, when the Network and Statistics Canada entered into an agreement to share the cost of updating the database regularly. Dave Haans, IT consultant for the Network, was instrumental in this process, notably by developing the search engine that allows interested parties to search the publications with ease and efficiency, by topic, by researcher, by year, by survey, and by the Centre where the work was done.

Compiling this bibliography has not been as easy as it might seem. Traditionally, the reward system for academics has not encouraged them to pay attention to what happens to their papers once they are published in an academic journal. RDC Academic Directors had often commented on how hard it is to obtain this information from their researchers. Part of the reason, of course, is that the publication often appears more than a year after the academic has moved on to other projects. Yet, keeping track of the

impact is significant for the mission of the CRDCN. To help change the incentives, the Network decided to include research output as one of the criteria upon which funding is allocated to each RDC starting in 2010. The number of publications listed has increased consistently over time and now includes over 3,000 references.

As the Network increased the number of its publications, Raymond Currie and Heather Juby decided that knowledge syntheses on a given topic would be an opportune development. Preparing these syntheses requires significant investment in time and money, but there is a strong consensus that they constitute a good KT vehicle.

On the one hand, they are jargon-free documents, designed to make scientific research findings more accessible to policy-makers and other non-specialists. On the other hand, they also provide evidence based on a large number of studies on a topic, adding more confidence to the findings. We can recall the controversy that raged years ago, when an article came out praising the merits of butter over margarine; and soon after, another article suggested that margarine was healthier option than butter. Knowledge synthesis helps overcome those kinds of contradictory findings.

John Polyani, the Nobel Prize winner in chemistry from the University of Toronto, has some important insights into the topic:

> It is sometimes overlooked that the power of science comes from debate – that science is grounded in democracy. There is a caricature of science as being composed of a catalogue of facts. If this were the case, there would be no need for the scientific meeting, since we would not need to debate. Facts would be transmitted online to a central location, where they would trigger a round of applause.
>
> But that is not our experience of scientific meetings. Rather than using them to state facts, we advance propositions. As with evidence in court, these are tested in cross-examination before a jury of our peers. A paradox lies at the base of the gleaming edifice of science. Science's greatest gift to civilization

> is its acknowledgement of fallibility. Those of us who do science know full well that there are no final answers. There is only a creeping progress out of darkness into light. For the great enterprise of science, for all its amazing power, is profoundly human.[68]

The first CRDCN synthesis on clinical depression combined the research expertise of Scott Patten from the University of Calgary and the communication skills of Heather Juby.[69] It summarized the findings of thirty-five studies completed in the RDCs using mainly two data sets: the National Population Health Survey (NPHS) and the Canadian Community Health Survey (CCHS). Since its publication in 2008, it has been downloaded over 7,000 times, including a version in French translated by Statistics Canada.

Originally, the goal was to produce several syntheses per year. But this proved overly ambitious for reasons related to both finances and human resources. The model adopted for this first synthesis, where a writer would work collaboratively with an expert in the field, also proved unworkable. It was decided that it would be preferable and more effective to contract projects out to experts in the field; in this model, the KT coordinator would act as the editor.

To clarify the process, a background document was drafted in 2012 to explain the objectives of the knowledge synthesis and to specify the guidelines that authors had to follow. The overall goal is to assess the strength and value of research undertaken through RDCs and to analyze their implications relative to key policy issues. Their specific objectives are threefold: ensure that research results are absorbed by policy-makers and the public; contribute to the development and adoption of knowledge-informed policy; identify key evidence gaps in order to encourage further policy-relevant research. The syntheses are peer-reviewed and available in English and French.

In 2012, several syntheses were commissioned dealing with the gender wage gap, the impact of income on child development, obesity, caregiving, and integration of immigrants. The first two have been released in September 2013 and April 2014.[70] Saul Schwartz,

professor in the Department of Economics at Carleton University and Academic Director of the COOL RDC from 2005 to 2010, was instrumental in bringing the syntheses to fruition, as Chair of the KT committee.[71]

In addition to knowledge syntheses, the Network has also developed a "Research highlight" series, in which an article using data accessed in RDCs and published in a peer-reviewed scientific journal is summarized in two or three pages. This initiative was initially undertaken in collaboration with the UWO RDC.

The most recent innovation is the webinar series, which was launched in the fall 2012 in collaboration with "CHNET-works!" Five webinars were held in the following months. Further pursuit of the experience was supported by the interest raised by these webinars (as shown by the number of registrations and the number of participants), as well as the very positive feedback received afterwards.

Another shining example of a constructive partnership in KT was the December 2013 talk by Céline Le Bourdais on Parliament Hill in the "Big Thinking" series, organized by the Federation for the Humanities and Social Sciences. Le Bourdais, a founder of the CRDCN and current Academic Director of the McGill University branch, is an expert on family life and a member of the *Comité consultatif sur la droit de la famille* in Quebec. In the face of unparalleled growth of common law unions in Quebec, she addressed questions that arise over the financial arrangements, including pensions in cases where these unions dissolve. Interest in the topic was sparked by a case entitled *Eric vs. Lola*, which was decided by the Quebec courts and the Supreme Court of Canada in 2012.

It must be remembered that, in addition to the initiatives at the network level, several RDCs have also invested in KT by organizing conferences and seminars, developing their websites, and meeting with government officials, as have many individual researchers, by contracting research with various federal and provincial departments (including Health Canada, HRSDC, Citizenship and Immigration, Nova

Scotia Department of Education, Alberta Seniors and Community Support), non-profit organizations (including Canadian Homecare Association, Alzheimer Society, Association of Nurses of PEI, Canadian Partnership against Cancer, Literacy Coalition of New Brunswick, Millennium Scholarship Foundation), and think tanks. This communication of research results is often significantly supported by the media and communication resources in their respective universities and RDCs. The University of Toronto's media resources, for example, keep close tabs on the media impact of the university's researchers, and RDC media reports are included in the Toronto RDC annual reports. Many other RDCs do the same.

Internal Communication and New Social Media

In her assessment of the state of KT presented in her strategic plan, Sarah Fortin raised two issues related to the state of the CRDCN itself in 2011:

- Despite being more than 10 years old, its identity (or branding) is not yet well developed. It is not easy to explain to the public what it is and to distinguish it from Statistics Canada and from its constituent RDCs. The confusion is somewhat nourished by the presence of two logos and several websites, and by the absence of mutual linkages among them.
- The research output is not easily recognizable as a CRDCN output, though the specific RDC where the research was carried out is identified on a more frequent basis.

While this kind of "branding" question does not involve KT as such, Fortin argued that it was indirectly related. She suggested that reinforcing the CRDCN's identity in the research community and among RDCs users themselves would in turn facilitate KT undertakings in the long run.

She rapidly undertook to improve on this. The CRDCN internet domain was bought and CRDCN staff was provided with crdcn.org email addresses. Publications by the Network were clearly identified

as such in the name (e.g., *CRDCN Research Highlight*) and through the use of the Network's distinctive logo (as opposed to Statistics Canada's RDC program logo). RDCs were invited to use the Network's logo and to provide a link to the Network's website, while Academic Directors were invited to use it in their email signatures. To increase the Network's visibility among users and potential users, portable posters (for public events), flyers, and paper posters have been prepared and distributed.

While visibility is important, connection among users is even more so. A key step to building closer linkages among researchers and interested stakeholders was the creation of *The Networker*. The first official number was issued in January 2012. This newsletter is released on a quarterly basis and serves both internal communication and KT objectives. It informs subscribers not only of recent and upcoming CRDCN activities and publications (including new available data sets; calls for proposals; upcoming conferences; and training sessions, etc.) but also those of compatible organizations.

People can also follow the CRDCN on Twitter if they wish to be informed on a more regular basis and can view webinars many conference presentations on the CRDCN's own YouTube channel.

At the opening of the COOL RDC in December 2005, the comments by Ivan Fellegi spoke directly to this core KT mission of the CRDCN:

> While the number of published articles is impressive, the true measure of success is in the impact that these results have on creating a better understanding of our society and on shaping public policies. Clearly, the impact of social science research is incremental in nature. It is generally a collective body of research that serves to inform public policy and to create a better understanding of the major issues facing our society. We can certainly take pride in the quality and number of the articles published from the research conducted in the Centres; and it is clear that public policy is being served by this research. Yet, I am even more ambitious for all of us. I would like to reach

> a situation where the results of this research become part of the public discourse when important social issues are debated, where we are collectively making a major contribution to evidence-based decision making. I am confident that, with perhaps a little more time, the combination of extremely highly qualified researchers who are making use of the Centres, and the high quality data provided by Statistics Canada will yield results that will have a fundamental impact on our understanding of Canadian society.[72]

While the Network may not yet have reached the stage envisioned by Fellegi, significant headway has been made.

Creating an Environment Conducive to Success

The collaboration of well over 100 universities, government departments, and research agencies has created a remarkable research data community. Appendix 4 summarizes the partners, data providers, service providers, policy agents, professional associations, and other research networks that comprised it. While some of these relationships have emerged almost naturally, others have resulted from concerted efforts on the part of the Network to bring itself to the attention of government and other groups.[73]

The CRDCN has also played a significant role in the expansion of data centres and networks in countries around the world. In addition to Canada, there are now 10 countries with data centres,[74] and it is probably not an exaggeration to state that Canada has the most elaborate network. This effort on the national and international scene has created a social science quantitative research environment that was simply unimagined prior to the initiation of the CRDCN.[75]

A number of other factors within the CRDCN have contributed to creating the environment conducive to this successful research endeavour, including its governance and the adoption of innovative technological developments.

Governance

After several adaptations to growth over time, the organizational structure of the CRDCN evolved to what is shown in Appendix 5.

The CRDCN has an Executive Committee that meets twice yearly. Its recommendations are forwarded to the Academic Directors national meeting for final approval. The latter meets physically once a year, augmented by a telephone conference call offset by six months.

The Executive Committee has six voting members, all of whom are Academic Directors. It is chaired by the Principal Investigator (currently Byron Spencer) of the SSHRC and CIHR grants, who is also a voting member. The Executive Director actually chairs the meetings, except when the Network budget is up for approval.

The QICSS and the Toronto RDC are permanent members, which reflect the large level of research activity at these RDCs. The three other members serve on a rotational basis, one at-large, and the other two representing the small RDCs and their respective branches. Statistics Canada is represented by the Director of the Microdata Access Division (MAD) and the Director General of the Social and Demographic Statistics Branch. Staff members from Statistics Canada and the CRDCN fill out the attendance. Once a year, the voting members of the Executive Committee meet *in camera* to evaluate the performance of the CRDCN staff.

A quiet but significant feature of the Network's governance is the consensus decision-making model that has been a hallmark of its activities since its origins. In spite of dramatic differences in the size, activity level, and funding levels between RDCs, the will and maturity of the Directors to reach consensus has been remarkable. Part of the reason, perhaps, is that the Directors are academic leaders themselves and they understand the value of working together. The most dramatic example of this effort at consensus has been the adoption of the Allocation Formula, as discussed earlier.

Technological Developments

The development of an appropriate technological infrastructure for the CRDCN has been a story of continuous progress. While a number of people in the Network have contributed to this process, of particular note has been the forward thinking vision of Chuck Humphrey, Academic Director at the Alberta RDC. Gustave Goldmann and Heather Dryburgh, as well as Donna Dosman, all of Statistics Canada, have also played key roles in various aspects of these technological developments.

Establishment of a Wide Area Network

When the first RDCs opened in the early 2000s, each Centre was equipped with a "local area network", and data were transmitted on encrypted CDs and DVDs by courier. This continued until 2010, after a second CFI award of $3,600,000 was granted to the Network.[76] In addition to supporting the timely replacement of IT equipment in the RDCs and branches, this grant allowed the Network to develop of a "wide area network" (WAN), an end-to-end light-path-fibre-optic program linking all the Centres.

Pursuant to that end, the Network contacted the Canadian Advanced Research and Innovation Network (CANARIE), which provided the Network with a grant of $300,000 to help build the WAN. After the approval of the budget from the CFI, close to a year elapsed before Statistics Canada agreed that CANARIE had a viable, secure network that could serve the CRDCN's purpose. The CANARIE staff (led by Chief Technology Officer Eric Bernier, Senior Engineer Damir Pobric, and Service Coordinator Catherine Power) was an enormous resource in bringing the project to completion.

By October 31, 2010, all Centres were connected to the WAN. Led by Cameron Moffet of Statistics Canada, tests were conducted at Toronto, Halifax, and Winnipeg. Negotiations by Raymond Currie with the provincial Optical Regional Advanced Networks (ORANs) were long and complex, but necessary to establish the costs that the Network

and universities could afford to support the long-term operation of the WAN.

The time and investment were worth it, as the establishment of the WAN brought several benefits. It allowed the Network to transmit encrypted data from Statistics Canada to the RDCs far more securely than by using a courier, and to do so in a timely, almost immediate, fashion. The operating systems and antiviruses can also be kept up to date more easily. But it has done far more than that, since the WAN allows a more flexible use of resources. For example, each analyst in the RDCs (but not in the branches) has a focal point survey as his/her specialty. The WAN permits easy access to these experts all across the country, much more effectively and without each analyst having to be an expert in every survey. Furthermore, the WAN facilitates collaboration. Research projects already average 2.4 researchers, and many involve researchers working out of different Centres; this kind of collaboration is expected to increase as the WAN is used more effectively; for instance the sharing of files from a single project across different centres is now possible.

With the WAN in place, the CRDCN directors did consider the possibility of moving to a "thin client" environment. In that scenario, the data would be stored in a central repository and processing would take place at Statistics Canada, avoiding the need for expensive servers in each RDC where the data are currently stored after transmission. The establishment of a central data repository would also make it even more efficient for analysts and would ensure that data sets are well documented and archived. Individual computer workstations in the RDCs would be "thin client" terminals with no data stored on them. Logging on to the Network would tie the researcher directly into the central repository and processing server.

The discussion about the development of a thin client environment has been long and intense among the ADs, and is as yet inconclusive. But a number of steps have been taken to that end. The Network hired a consultant in October 2011 to develop an evaluation report of the best configuration to maximize the WAN in the short

term. The consultant recommended that steps be taken to ready the Network to move to a "thin client" environment in the future, notably by developing a central data repository and by moving to a centralized system of authentication.

Statistics Canada undertook to test the robustness of CANARIE in supporting such a thin client structure, and to assess the costs, including maintenance, so that the Network would be prepared for the next infrastructure proposal. From January 2012 to December 2013, Donna Dosman and Michel Levasseur coordinated the migration of all RDCs to a single domain, in order to move to a centralized system of authentication. This was done in consultation with the Joint Technology Committee and in collaboration with IT groups in Statistics Canada and Shared Services within the federal government. During the same period, the central data repository was also developed; Kelly Cranswick coordinated and completed the development of this repository which was fully functional by the fall 2014.

Data Documentation

The development of the WAN was the first objective pursued with the 2009 CFI grant; the second pertained to data documentation.

With data and analysis growing in complexity, researchers increasingly need detailed documentation, or metadata, about the data they analyse: the exact wording of survey questions, how a sample was selected or a concept measured, or how a computer code for processing data was generated. Although it has not been standard practice, researchers also need to record the decisions they make about the data at different points in their research, so that they – or others – can either revisit them later or recreate the same study design using data from a different source.

Creation of metadata in the social sciences is a relatively new practice, and the tools to bring this about are still in the making. As the volume of this information is expanding, the management of these metadata has become a serious challenge.

The Data Documentation Initiative (DDI) is a response to this challenge; it is an international effort to create an accepted standard for describing metadata in the social sciences.[77] The project was launched in 1995 and is spearheaded by the DDI Alliance, an international consortium with members from 32 institutions in 15 countries (including Health Canada and the National Science Foundation in the United States), with headquarters at the University of Michigan. After several earlier iterations, DDI 3.0 was formally adopted in May 2009 as an internationally recognized preservation standard for the social sciences.

As more social science microdata producers release their data documentation in DDI 3.0 format, the scope of possible discoveries and innovative uses of data will increase. It will also open entirely new avenues for international comparative research.

It is noteworthy that the CRDCN has played a significant role in promoting DDI 3.0 compliant metadata within Statistics Canada. Rosemary Bender, formerly the Director General of the Social and Demographic Statistics Branch and then Assistant Chief Statistician of the Health and Labour Division, before her retirement in the fall 2014, has acknowledged that the CRDCN has contributed significantly not only to the access of Statistics Canada information but also to its quality. “Thanks in part to the CRDCN, Statistics Canada has increased the amount, quality, and consistency of its metadata in support of the detailed microdata files.”[78]

The 2009 CFI award was instrumental in helping the Network move in that direction. The project to make Statistics Canada metadata compliant with DDI 3.0 involved an international competition. In June 2009, the Network awarded the contract to an international consortium headed by an Ottawa company, Breckenhill, to begin carrying out the project. When the project was completed on March 2013, 50 datasets had been coded.[79] In August 2013, Statistics Canada began a second phase, this time with its own funding, to continue the coding of the RDC collection, including the surveys that had been conducted since 2009.

The usability of the data by managers and researchers is greatly improved by the creation of data management tools, and the CRDCN team was well aware of this issue. Already in 2007, the Network had contributed $9,999 to the Foundation Tools Program created by the DDI Alliance to help establish core tools for the implementation of DDI 3.0. In 2008, a Memorandum of Understanding (MOU) signed by a number of international partners[80] and by Raymond Currie on behalf of the Network stated that, rather than cash, the CRDCN would contribute, in "open source," the tool under development within our CFI-funded project. Open source means that it will be made available free of cost to social scientists around the world.

Thanks to the vision of Heather Dryburgh and the work of Donna Dosman, a data management tool was in preparation during this period to facilitate the integration of the data repository with the active directory and data registry. Ultimately, the goal was to allow for the appropriate documentation of every phase of a survey's life cycle, from the development of a proposal to the development of the questionnaire, to the codebook, and even to previous analyses of the data.

The Dataset Builder, now available, does this to a large extent.[81] Developed in collaboration with Metadata Technology North America, the Dataset Builder allows researchers working in a RDC (or intending to work) the ability to browse, search for and select variables in the surveys currently housed in the RDCs. Utilizing DDI Lifecycle metadata, the Dataset Builder allows researchers to find and select variables, as well as produce SAS, SPSS or Stata syntax to help read in and format the variables, and to produce customized documentation (layout and dodebooks) for the dataset they create using the application.

Security Requirements

While the expansion of the Network to 27 facilities has necessitated IT developments, the initial security requirements have not changed much. The primary consideration has always been strict conformity to the physical and IT security requirements of the *Statistics Act*. Without complete confidence in the maintenance of confidentiality of respondents to surveys, the whole CRDCN would collapse in a moment.

In that spirit, Gustave Goldmann developed a security policy very early in the project and it became part of the Director's Handbook. In addition to the physical security requirements of the labs (regarding, for instance, the characteristics of the external perimeter, the door entrance, the entry control and monitoring, the alarm system, the layout of the workstations, or storage of the documents), strict rules also apply to the staff employed in the RDCs and to researchers entering the premises. The statistical analysts (in the RDCs) and the statistical assistants (in the branches) are Statistics Canada personnel, but paid for by the RDCs. The Academic Directors, who are university personnel, and any other staff hired in the RDCs as well as researchers, are "deemed employees" of Statistics Canada, thus subject to the same conditions of security and protection of privacy that apply to regular employees. All must affirm or swear the oath of secrecy, and thus are required to protect respondent confidentiality and abide by the policies of Statistics Canada.

Access to the RDCs is restricted by key code to those who have RCMP clearance and whose research project has been approved (i.e. the project cannot be carried out with PUMFs available through the DLI). Computers need to be adapted to exclude access to USB ports, and all paper taken in and out of the Centres is subject to disclosure avoidance procedures. The analysts are specifically responsible for active monitoring of security controls.

In addition, in 2011, Statistics Canada announced that the RDCs would be formally inspected by IT and security specialists once

every four years. The new inspection would include, for instance, an evaluation of the lab itself and of the processes in place to ensure there are no confidentiality breaches.

Social Science Data Archive

Efforts are also being made to address a serious gap in Canadian social science research, namely the absence of a comprehensive archive of Canadian social science research. Already, some of the past surveys conducted by Statistics Canada cannot be converted to metadata, because the surviving documentation is inadequate. Indeed, a major SSHRC grant was awarded to complete the appropriate documentation of the Canadian census data from the late 19th and early 20th centuries. It would be unfortunate if such a grant was necessary in the future, because Statistics Canada data had not been not properly documented and stored. Other surveys done by university researchers or agencies are also extremely likely to become inaccessible in the future without a comprehensive social science archive in Canada.

As early as 1994, Chuck Humphrey, who has been the Academic Director of the Alberta RDC since its origins, wrote about the need for such an archive:

> The Canadian Global Change Program, the Canadian Association of Research Libraries Data Consortium, and the Data Liberation Initiative have all, in some sense, contributed to making the case for a national data archive. A basic lesson from these experiences is that Canadian scholars require an institution which will locate, obtain a copy, and preserve significant Canadian data collections so that these data can be shared on an egalitarian basis with all Canadian researchers irrespective of their institutions' size, means, or location.[82]

Since then, the case for a national archive is even stronger, and the CRDCN could make a significant contribution in this area.

In January 2005, the National Consultation on Access to Scientific Research Data (NCASRD) task force released its final report calling for the establishment of a national steering body, "Data Canada", to help coordinate data management and preservation services. In 2008, the Research Data Strategy Working Group (RDSWG) began to explore ways of implementing some of the task force's recommendations in the absence of a national steering body. This was undertaken under the guidance of Pam Bjornson, Director General of the National Research Council Knowledge Management group. Chuck Humphrey has been a member of this working group since its origins; prior to his retirement, Raymond Currie met with Pam Bjornson in September of 2008 to discuss a possible role for the CRDCN in the development of a Canadian Digital Data library and in providing access to digital data through the DataCite project.[83]

In 2011, the gap analysis was brought up to date and incorporated into the backgrounder prepared in advance of the September 2011 National Data Summit organized by the RDSWG. Approximately 160 senior managers concerned about the management of research data in Canada attended this event. The summit's final report included a set of recommendations to develop stronger community involvement in research data management and preservation.[84] In the fall of 2012, the RDSWG reorganized itself into Research Data Canada and continues to develop its role as a national forum for data stewardship issues.

The Network could make a significant contribution in this area. Success in the establishment of a national archive would complete the circle in the CRDCN's ability to contribute to social science research in Canada. From access to data, to training future researchers, to making research count in the public domain, to being able to learn from our history, an effective archive would appear to be the next logical development of the Network.

Conclusion: Moving Forward

Thanks to the CRDCN, Canadians now know far more about their society than would have been possible otherwise, and government policies are better informed. Given its record of achievements as documented in this brief history, and as acknowledged by overwhelmingly positive international academic assessments of its organization and activities, the future of the CRDCN would seem to be secure. Yet, there are dark clouds on the horizon.

First, the financial situation is a matter of considerable concern. The Network as a whole has been rewarded with two five-year grants from the councils (2005-2009; 2010-2015). However, costs continue to increase on a yearly basis, while the grants remain at a fixed amount. Unless alternative sources of funding are found, this will lead to both a deficit situation and increased reliance on host universities. The Network is working on a long-term sustainability plan to augment its income, but it is clear that it will continue to need either increased support from the granting councils or other sources of funds.

Second, the decision of the federal government to cancel the long-form version of the 2011 census was devastating in its impact on social science research capabilities and, more importantly, on the ability of Canadian social statistics to continue to inform policy. The

problems with a voluntary survey being used as a replacement have been well documented in the media.[85]

This was followed by another potential blow shortly thereafter. While the existence of longitudinal household surveys was a motivating force behind the creation of the RDCs, Statistics Canada has announced that all of its longitudinal surveys will soon end. The only exception to this is the Longitudinal and International Study of Adults (LISA), the first wave of which was in 2011.

As it happens, the decision to cut back on longitudinal surveys was made at a time when a number of researchers, particularly in economics, would argue that such surveys are no longer at the leading edge of research, partly because they are costly and because sample attrition in successive waves reduces their value over time. However, and more importantly, recent technological advances have meant that additional and complementary sources of information in the form of administrative data files have become available.

As observed by Raj Chetty, Professor of Economics at Harvard and recent recipient of a MacArthur Genius Grant, "On a broad level ... there are now much better sources of data [than longitudinal survey files] in economics research. We used to rely on surveys, but now we have administrative data sources from health care, schools, grocery scanners, etc., so we don't have to rely just on what people tell us."[86] Indeed, in the last decade and more, research in Europe and the United States has come to rely increasingly on administrative data which, at least for some purposes, have become the new gold standard.

Based partly on recommendations from the Network, Statistics Canada will greatly prolong the useful life of various longitudinal surveys by adding information from such administrative sources as vital statistics and income tax returns. It will also create instant longitudinal files by adding administrative data to existing cross-sectional surveys. As one example, Statistics Canada is now preparing new files that will link each cycle of the Canadian Community Household Survey to hospital in-patient and out-patient

records (i.e., to the discharge abstract database (DAD) and the National Ambulatory Care Reporting System (NACRS)). They will be available in the RDCs for analysis.[87]

These initiatives are important. We do not want to return to the situation described in the ground-breaking report of the joint working group in 1998.[88] Canadian researchers would have to rely again upon foreign data to interpret social trends, when it is clear that the Canadian experience is unique in many of its aspects, especially in the fields of health, immigration, and numerous economic policies.

The future of quantitative social science research will depend to a great extent on the willingness of governments (federal and provincial) and the granting councils to make the vast amount of administrative data available for effective analysis, as well as to financially support the effort. In a paper outlining the future directions of the Network, Robert McNutt and Byron Spencer address the numerous tasks that will have to be undertaken to effectively mine these new administrative sources: data acquisition, data development, data management, facilitation of analysis, capacity building of researchers' skills, and the continuation of knowledge transfer.[89] While each of these tasks has their challenges, perhaps the data development will prove to be the most costly and time consuming. Because most of these administrative data were not gathered for research purposes, McNutt and Spencer observe that "[t]he challenge will be to create research-ready data files, most of which are poorly documented, and some of which have quality problems or [are] missing observations."

Looking ahead, the Network proposes to build on its current infrastructure, and to do so in ways that reflect both the needs of policymakers and the on-going revolution in how the information is made available in order to address important policy questions.

Notes

1. The name of the Network has changed over time. Originally it was the Research Data Centre National Steering Committee, and within the first year it became the RDC National Coordinating Committee. RDC was commonly used, but when our international contacts increased and it was obvious that other countries had similar networks, the acronym CRDCN, Canadian Research Data Centre Network, became the standard.

2. Currie, Raymond F. and Byron G. Spencer. 2005. "Research Data Centres: A Quantum Leap Forward in Social Science Research Capabilities." *Horizons*. Volume 8 (1) October: 38-41.

3. *Advancement of Research Using Social Statistics*. 1998. Final Report of the Joint Working Group of the Social Sciences and Humanities Research Council of Canada and Statistics Canada.

4. See Appendix 6 for this international evaluation.

5. Carroll, William K., Linda Christiansen-Ruffman, Raymond F. Currie and Deborah Harrison, ed. 1992. *Fragile Truths: Twenty Five Years of Sociology and Anthropology in Canada*. Ottawa: Carleton University Press.

6. McFarlane, Bruce A. 1992. "Anthropologists and Sociologists and Their Contributions to Policy in Canada." In *Fragile Truths: Twenty Five Years of Sociology and Anthropology in Canada* edited by William K. Carroll, Linda Christiansen-Ruffman, Raymond F. Currie, and Deborah Harrison. Ottawa: Carleton University Press, 281. See also Gagnon, Alain-G. and Stephen Brook. 1998. *Social Scientists and Politics in Canada: Between Clerisy and Vanguard*. Ottawa: Carleton University Press for an analysis of the involvement of social scientists in royal commissions.

7. Boyer, Ernest L. 1990. *Scholarship Reconsidered: Priorities of the Professoriate*. San Francisco: Jossey-Bass Publishers.

8. Gibbons, M., C. Limoges, H. Nowotny, S. Schwartzman, Scott, P. and Trow, M. 1994. *The New Production of Knowledge: the Dynamics of Science and Research in Contemporary Societies*, London: Sage. See also Gibbons, M. 1998. "Higher Education Relevance in the 21st Century," UNESCO Conference on Higher Education, Paris.

9. Rice, Eugene R. 1996, "Making a Place for the New American Scholar." Paper presented at the American Association of higher Education Conference on Faculty Roles and Rewards, Atlanta, Ga.

10. Rice, Eugene R., Mary Deane Sorcinelli and Ann E. Austin. 2000. *Heeding new Voices: Academic Careers for a new Generation*. Stylus Publishing.

11. “Scholarship Unbound: Reframing faculty evaluation and rewards.” Oregon State University, Oregon, October 1-3 1998.

12. Announced in 1998, CURA were first awarded in 2001 and the last competition was held in 2010 for grants beginning in 2011.

13. See Bernard, P., Beach, C., Curtis, J., Davies, J., Fox, B., Lapierre-Adameyk, E., et al. 1988. “A proposal for a national panel study of the social and economic dynamics of making a living.” Report submitted to the Social Science and Humanities Research Council (SSHRC) of Canada; and Bernard, P., Beach, C., Curtis, J., Davies, J., Fox, B., Lapierre-Adameyk, E., et al. 1992. “The Canadian Household Panel Study: Work, Income and Family Life. A Proposal for a Joint Initiative with Statistics Canada.”

14. Le Bourdais, Céline. 2014. “Paul Bernard.” In *Encyclopedia of Quality of Life and Well-Being Research*. Vol.1. edited by A.C. Michalos. Dordrecht, Netherlands: Springer.

15. Boyko, Ernie and Wendy Watkins. 2011. “The Canadian Data Liberation Initiative: An Idea Worth Considering?” *IHSN Working Paper*, No. 006, International Household Survey Network.

16. Wendy Watkins once wore a shirt with the inscription “Data Liberation Army” on the front. When she crossed the Canada/United States border to attend a meeting at the University of Michigan, she found herself having to do a lot of explaining to the border patrol, who did not find the moniker amusing.

17. See DLI website for a list of participating universities: http://www.statcan.gc.ca/dli-idd/dli-idd-eng.htm

18. As explained by Statistics Camada, “A Public Use Microdata File (PUMF) is manipulated by aggregating, capping, or completely deleting variables that are considered ‘identifiers’. As a result, an individual survey respondent cannot be identified. For example, age and income are grouped, body height is capped and grouped, and most of the geographic variables are removed with the exception, in most cases, of the province and health region where the respondent resides.” In comparison, “the RDC confidential microdata files contain most of the original information collected during the survey interview with the subject as well as derived variables added to the dataset afterwards. They also contain the Bootstrap weights used to calculate the exact variance.” To know more, visit: http://www.statcan.gc.ca/eng/rdc/index (accessed in March 2015).

19. The journal *Canadian Public Policy* was established in 1974, but most of the early articles published in it were limited to economic policy.

20. In addition to the Chair, membership in the Working Group included: Peter Kuhn, Department of Economics, McMaster University; Douglas A. Norris, Housing, Family and Social Statistics Division, Statistics Canada;

Garnett Picot, Director, Business and Labour Market Analysis, Statistics Canada; Martin Wilk, former Chief Statistician, Statistics Canada; Betty Havens, Community Health Sciences, University of Manitoba; Céline Le Bourdais, INRS-Urbanisation; Michael Ornstein, Institute for Social Research, York University; and J. Douglas Willms, Atlantic Centre for Policy Research in Education, University of New Brunswick.

21. *Advancement of Research Using Social Statistics*. 1998. Final Report of the Joint Working Group of the Social Sciences and Humanities Research Council of Canada (SSHRC) and Statistics Canada. The report was accepted "in principle" at a SSHRC board meeting on January 29-30, 1999.

22. Specifically, as "deemed employees" researchers would not have to go to Ottawa in order to have access to confidential data, as long as they adhered to strict provisions of confidentiality and fulfilled the requirements of the *Statistics Act*, including RCMP background checks.

23. Personal correspondence to Raymond Currie dated March 9, 2006.

24. Statistics Canada Policy Manual, Section 4.9.

25. Goldmann, Gustave. 2009-2010. "From a Seed to a Forest: Microdata Access at Statistics Canada." *Statistical Journal of the IAOS*, 26 (3), 87.

26. The proposal was prepared by Paul Bernard (U. of Montreal), Céline Le Bourdais (INRS), Thomas Lemieux (U. of British Columbia), Keith Archer, (U. of Calgary), Blair Wheaton (U. of Toronto), John Goyder (Waterloo U.), Mike Pennock (Dalhousie U.), Garnet Picot (Statistics Canada) and Joseph Hubert, with the support of Yves Murray (U. of Montreal).

27. CRDCN. 2000. *Developing Social Statistics for Evidence-Based Public Debate: Towards a National Network of Research Data Centres*. 2000. Grant application to the CFI.

28. Ibid. p. 3A

29. In the original CFI application, the term "national system of RDCs" was used. To simplify, we will use the current name (Canadian Research Data Centre Network) and abbreviations (CRDCN, RDC Network or Network).

30. Wendy Watkins was appointed as representative of the DLI in 2004, but the DLI has always had representation because Chuck Humphrey, the Director of the Alberta RDC since the beginning, has always attended the meetings.

31. Raymond Currie brought a good deal of administrative experience to the position. In addition to a five-year term as head of the department of sociology at the University of Manitoba (1979-84) and eight years as Dean of the Faculty of Arts (1991-99), he was the founding director of the Winnipeg Area Study, an annual survey of 750 households in the city of

Winnipeg that carried on for 25 years. He also served on a number of national committees in the social sciences and conducted academic evaluations of departments and faculties at more than a dozen universities in Canada and abroad.

32. He was later to hear that the directors had been prompt in their approval out of fear that he might not take the job if they delayed.

33. Krahn, Harvey and Chuck Humphrey. 2003. "A Recommendation to Clarify the Exemption from Research Ethics Review of Secondary Analysis of Statistics Canada Data Sets in the University of Alberta Research Data Centre."

34. "The Operation costs will be covered by three different sources. First, Statistics Canada will cover all the operating costs at the head office in order to maintain the database and offer the professional and technical day-to-day services (see enclosed letter); these costs have not been included in the above figure. Secondly, the RDCs will submit a proposal to SSHRC's Canadian Initiative on Social Statistics (which should be in operation within the coming months). A close collaboration between RDCs, Statistics Canada, and SSHRC has been already established to ensure the success of this project. The funding from the SSHRC would cover the main part of the operating costs of the RDCs. Thirdly, the participating universities in each RDC have agreed to guarantee at least the minimal operation costs for the first three years. The operation costs will then be covered, even if the SSHRC cannot fund the RDCs during the first years. The model chosen to cover these operation costs varies from one RDC to another, as the prorata between the universities (which takes into account the number of probable users – researchers, students and research programs – coming from each university)." In CRDCN. 2000. *Developing Social Statistics for Evidence-Based Public Debate: Towards a National Network of Research Data Centres*. Grant application to the CFI.

35. Correspondence between Raymond F. Currie and Bruce Hutchinson, Associate Vice Principal (Research), Queen's University, May 14, 2003.

36. Letter from Mark Bisby to Michael Wolfson, dated May 9th, 2003.

37. The rationale the Network gave for not wanting user fees is explained in Appendix 7.

38. Personal correspondence from Pat Dagenais to Raymond Currie, November 2003.

39. Correspondence from Mark Bisby to Raymond Currie, February 2004.

40. In June 2007, at the request of the two councils, the Network submitted a further report in more detail on the proportion of research in the RDCs and which contained a "significant health component." "The incidence of health and social science related research in the RDCs."

Report to SSHRC and CIHR, June 2007, prepared by Raymond F. Currie, Executive Director, CRDCN.

41. Letter to Raymond Currie, May, 2005.

42. The Network also applied and received a second Canadian Foundation for Innovation grant in 2009. We will examine this portion of the Network's activities, in the section on "technological developments."

43. Travel distance to a Centre was a matter of great importance in the expansion discussions. The problem was not only distances between cities (e.g., researchers in Saskatchewan having to go to either Calgary or Winnipeg for access), but also travel time within cities (in Vancouver from Simon Fraser University to UBC). Even within cities such as Montreal, Toronto, and Vancouver, travel was often so long that the absence of a facility on the campus meant the researchers simply could not afford the time to go to the facility situated on another campus.

44. However, the equipment and infrastructure are owned by the university.

45. See CRDCN website (www.rdc-cdr.ca/data) for a list of surveys and administrative data sets available in the CRDCN.

46. See "Role of Analysts," in the RDC Director's Handbook.

47. These disciplines include: nutrition, dentistry, public health, health policy, medicine, epidemiology, biostatistics, health services, nursing, community health, psychiatry, pediatrics, kinesiology, business, demographics, education, industrial relations, information systems, public policy, psychology, recreational and leisure, statistical and actuarial science, social work, and urbanization.

48. Darren Lauzon has also provided information on government use of the data, primarily in the Federal RDC. Unlike academic and student usage, government employees do not show a consistent pattern of increased usage. The mean number of government projects is 10.66 per year. However, with the dramatic shifts from year to year in government usage, from a high of 32 percent in the first year to a low of 3 in 2006, the median of 12 may be a more useful statistic.

49. We are indebted to Dave Haans, the Network Research and Computing Consultant at the University of Toronto, who is responsible for compiling these data. It is also worth noting that the Academic Directors have had to use a carrot and stick approach to convince researchers that it is important to report these activities. Until the "output measures" became a significant source of funding for Centres, 25 percent of the funding was withheld until the annual report had been submitted. That procedure is no longer necessary.

50. The Universities of Calgary and Alberta collaborated in offering the Western Statistics Seminars from 2004 to 2006.

51. Permission from Statistics Canada was required because the course model was a modification of the normal procedure for academic access to the Centres. To facilitate access for students, who have tight timelines in their studies, the vetting procedures for student projects are fast-tracked through Statistics Canada, and SSHRC peer reviews the projects.

52. Boyle, Michael. 2007. "Advanced Analysis of Survey Data." Course outline, fall semester, McMaster University.

53. Davies, Huw; Sandra Nutley; and Isabel Walter. 2008. "Why 'Knowledge Transfer' is Misconceived for Applied Social Research." *Journal of Health Services Research and Policy* 13 (3), 188.

54. In addition to knowledge transfer, expressions such as knowledge translation, knowledge mobilization, research utilization, evidence-based practice, knowledge implementation, moving knowledge to practice, and knowledge to action are commonly used. See Graham, Ian D. et al. 2006. "Lost in Knowledge Translation: Time for a Map?" *The Journal of Continuing Education in the Health Professions* 26 (1), 13–24. See also Tetroe, Jacqueline. 2007. "Knowledge Translation at the Canadian Institutes of Health Research: A Primer." *Focus*, Technical brief no. 18, and Faye, Cheikh, Monique Lortie and Lise Desmarais. 2007. *Guide sur le transfert des connaissances*. Réseau de recherche en santé et en sécurité du travail du Québec.

55. The CFHI website explains: "When the organization was established in 1996, our priorities were to bring researchers and decision-makers together to identify gaps in applied health services research, fund the researchers who could investigate those gaps, and promote best practices of health services delivery and their outcomes. We've expanded our efforts, and our priorities now include finding the best approaches for maximizing value for money in healthcare spending, providing a more coordinated approach to complex healthcare needs, and improving patient- and family-centred experience and outcomes." www.cfhi-fcass.ca/AboutUs/FAQs.aspx (accessed in October 2014).

56. The federal government (CIC and HRDC departments in particular) seems to have been instrumental in these developments. The creation of the Policy Research Initiative in 1996 suggests that a closer connection with the research community was a priority for Ottawa.

57. Another model considered by the working group was the one developed by the Ministry of Social Affairs in France (MIRE). Thanks to Céline Le Bourdais, who has kindly allowed us to access her personal

archives relative to the background documentation prepared for the Joint Working Group.

58. The Joint Working Group proposed "the creation of Research Forums, as well as the organization of a Social Statistics Communications Program at SSHRC". The Communication Program would "implement a communications strategy to inform and build the public constituency for quantitative social science research", while the Research Forums "would support research networks, provide an arena for the presentation of research findings, and enhance communication among researchers, the policy community, and the media."

59. Social Sciences and Humanities Research Council of Canada. *SSHRC's Knowledge Mobilization Strategy, 2009-11*, Appendix 1: "History of Knowledge Mobilization at SSHRC." www.sshrc-crsh.gc.ca/about-au_sujet/publications/KMbPI_FinalE.pdf (accessed in October 2014).

60. These include Rod Beaujot (Western University), Craig Riddell, (University of British Columbia), Céline Le Bourdais (McGill University) and Byron Spencer (McMaster University).

61. Sarah Fortin, "Knowledge Transfer Plan, 2011-2016," CRDCN, November 9, 2011.

62. Caroline Pestieau. 2003. "Evaluating Policy Research." *Research paper* W/22, Canadian Policy Research Network, 1. http://cprn.org/documents/24336_en.pdf (accessed in October 2014).

63. Gluckman, Sir Peter. 2011. "Towards Better Use of Evidence in Policy Formation: A Discussion Paper." Office of the Prime Minister's science advisory committee, New Zealand, 6-7. www.pmcsa.org.nz/wp-content/uploads/Towards-better-use-of-evidence-in-policy-formation.pdf (accessed in October 2014).

64. Ward, Vicky; Simon Smith; Robbie Foy; Allan House; and Susan Hamer. 2010. "Planning for Knowledge Translation: A Researcher's Guide." *Evidence and Policy* 6 (4): 537.

65. For example, in 2009, the conference attracted 66 public servants and NGO staff (including 16 from CIC and 13 from HRSDC) in addition to 56 faculty and students from 17 Canadian universities. Similarly, in 2012, 67 out of the 154 registrants were members of the Government of New Brunswick, covering a wide spectrum of departments and agencies. In addition, 27 attendees were from other levels of government and non-governmental organizations.

66. Fortin, Sarah, ed. 2012. *Canadian Research on Population Aging: Knowledge and Data Gaps in Social Statistic*. www.rdc-cdr.ca/sites/default/files/crdcn_2011_annual_conference_report.pdf (accessed in October 2014)

67. See: www.youtube.com/user/TheCRDCN/featured (accessed in October 2014).

68. Polyani, John. 2009. *The Globe and Mail*, May 2, A15.

69. Heather Juby and Scott Patten. 2008. *A Profile of Clinical Depression in Canada*.http://dspace.ucalgary.ca/bitstream/1880/46327/6/Patten_RSS1.pdf (accessed in October 2014).

70. Vincent, Carole. 2013. "Why Do Women Earn Less Than Men? A Synthesis of Findings from Canadian Microdata." *CRDCN Synthesis Series*. McEwen, Annie and Jennifer Stewart. 2014. "The Relationship Between Income and Children's Outcomes: A Synthesis of Canadian Evidence." *CRDCN Synthesis Series*. They were also published in *Canadian Public Policy*, after the journal's normal peer review process.

71. We wouls also like to acknowledge the contribution of Amélie Quesnel-Vallée and Jane Friesen who were sitting on the committee at the time.

72. Fellegi, Ivan P. 2005. "Présentation à l'occasion de l'ouverture du Centre de données de recherche COOL (Carleton, Ottawa, Outaouais Local RDC). " University of Ottawa, Ottawa, September 20, 2005.

73. For instance, Ted McDonald, Academic Director of the NB RDC organized a meeting on the value of the CRDCN with over 20 Deputy Ministers and other officials in the Province in November, 2009. Both Raymond Currie and Byron Spencer made presentations on behalf of the Network. McDonald's follow-up with government officials has led to the establishment of a provincial RDC.

74. Belgium, France, Germany, Holland, Japan, Norway, Sweden, Switzerland, the United Kingdom, and the United States. Directors from these networks meet on an almost annual basis. Chuck Humphrey, Gustave Goldmann, and Raymond Currie have presented papers at these conferences in Canada, England, Wales, Germany, France, Japan, and the US.

75. The CRDCN participated in two initiatives to facilitate international access to microdata. The first was the international data enclaves group, which met three times and included academic members from the CRDCN, as well as Statistics Canada. That group has not continued meeting since the OECD established an Expert Group on Microdata Access. The Statistics Canada's Director who is responsible for the RDC program is a member of

the OECD Expert Group and has participated in three of the four meetings.

76. The proposal was written by Raymond Currie and Chuck Humphrey in December 2005 and approved in 2008, with the money allocated in May 2009.

77. Extensible Markup Language (XML) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.

78. CRDCN. 2009. "The Canadian Research Data Centre Network, Application for Funding Renewal." Submitted to SSHRC and CIHR, p. 41.

79. The Network is particularly indebted to William (Bill) Wilson, CEO and Managing Partner of Breckenhill, as well as Pascal Heus and Arofan Gregory from the Open Data Foundation, who spearheaded the work of the Consortium.

80. These Alliance members include the CRDCN, the Danish Data Archive, the DDI Alliance, GESISZUMA, ICPSR, the Institute for the Study of Labour (IZA), the Institute for Employment Research (IAB), the National Opinion Research Center (NORC), the Open Data Foundation, Stanford University, and the United Kingdom Data Archive.

81. "Dataset Builder Tool: Canadian Research Data Centre Network (CRDCN)" Presentation to the North American DDI (NADDI) Conference 2014. April 1-2, 2014. http://summit.sfu.ca/item/13929 (accessed in May 2015).

82. Humphrey, Charles. 1994. "The Case for a Canadian National Social Sciences Data Archive." *Government Information in Canada* 1 (2), 7.

83. Consistent with that, Bjornson provided a letter in support of the Network's grant submission to CIHR/SSHRC.

84. The Research Data Strategy Working Group. 2011. *Mapping the Data Landscape: Report of the 2011 Canadian Research Data Summit*. http://rds-sdr.cisti-icist.nrc-cnrc.gc.ca/obj/doc/2011_data_summit-sommet_donnees/Data_Summit_Report.pdf (accessed in October 2014).

85. See Appendix 8 for a copy of the letter to Minister Clement from the CRDCN regarding this decision. It is simply one of many unsuccessful efforts to encourage the federal government to rethink its decision to cancel the long form census. Even more powerful interventions (including efforts by the Statistical Council of Canada), which addressed potential solutions to the concerns of the federal government, were dismissed. The political will to rectify the situation will need to be mobilized.

86. Murphy, Kate. "Raj Chetty." *The New York Times*, October 6, 2012. www.nytimes.com/2012/10/07/opinion/sunday/catching-up-with-raj-

chetty.html?_r=0&adxnnl=1&adxnnlx=1367262592-u7Ax3KNuVQYwjGMU7JW3yA (accessed in October 2012).

87. The importance of longitudinal data was addressed very effectively by Michael Baker, Academic Director of the Toronto RDC, in its keynote speech at the CRDCN National Conference at the University of Waterloo in October 2013: "How RDCs Changed Public Policy Research in Canada (and Will Again in the Future)." This talk is available at: http://www.youtube.com/watch?v=gwRjqm9_OXs&list=PLjXFrf6hU8QYHmA7sgN6b_WZmJa9VTcK6&index=30 (accessed in October 2014).

88. *Advancement of Research Using Social Statistics*. 1998. Final Report of the Joint Working Group of the Social Sciences and Humanities Research Council of Canada and Statistics Canada.

89. McNutt, Robert and Byron G. Spencer. "Thinking Big About Big Data: Future Directions for the Canadian Research Data Centre Network." April 2014.

Appendices

Appendix 1: List of Centres, Branches, Partners and Academic Directors

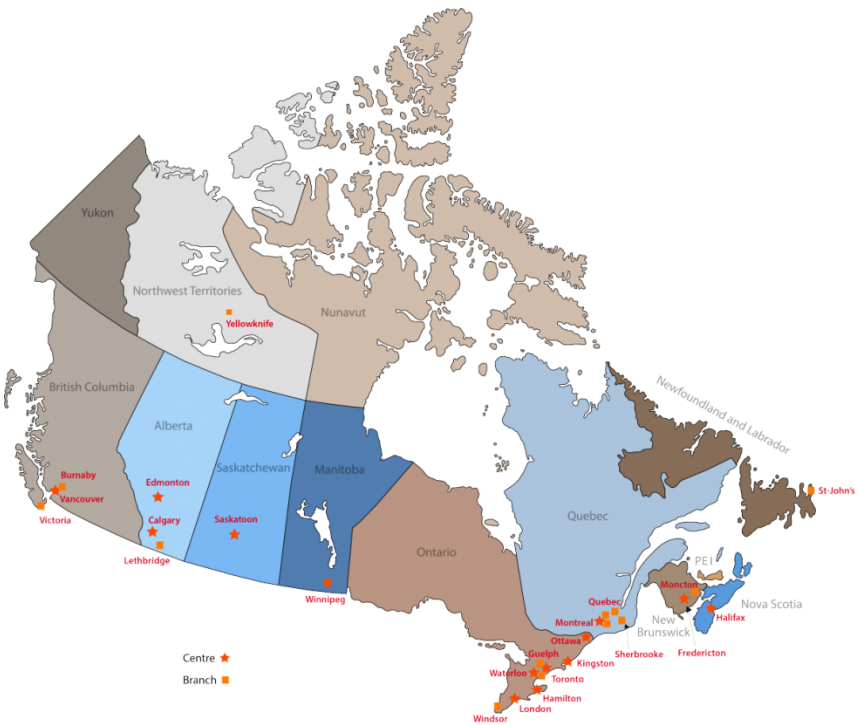
Institution	Academic Director
Alberta RDC ➢ University of Alberta (2001)	Chuck Humphrey, 2001-
Atlantic RDC ➢ Dalhousie University (2001)	Shelley Phipps, 2001-2003 Lars Osberg, 2003-2004 Victor Thiessen, 2004-2013 Yoko Yoshida, 2014-
BCI RDC ➢ University of British Columbia (2001)	Craig Riddell, 2001-2006 Nicole Fortin, 2006-2007 Kevin Milligan, 2007-
▪ University of Victoria (2006)	Douglas Baer, 2006-
▪ Simon Fraser University (2008)	Michael Hayes, 2008 Jane Friesen, 2008-
○ University of Northern BC	n.a.
○ Vancouver Island University	n.a.
COOL RDC ➢ University of Ottawa (2005)	Jennifer Stewart, 2004-2005 Saul Schwartz, 2005-2010 Catherine Deri Armstrong, 2010-2015 Jennifer Stewart, 2015-
- Carleton University	n.a.
- Université du Québec en Outaouais	n.a.
Manitoba RDC ➢ University of Manitoba (2005)	Evelyn L. Forget, 2005-
▪ Institute for Circumpolar Health Research (2013)	Susan Chatwood, 2012-
McMaster RDC ➢ McMaster University (2000)	Byron Spencer, 2000-

Institutions	Academic Directors
NB RDC ➢ University of New Brunswick (2001)	Doug Willms, 2001-2008 Ted McDonald, 2008-
▪ Université de Moncton (2005-08, 2010-)	Rodrigue Landry 2005-2008 François Vigneau 2010
▪ Memorial University (2013)	Abdie Kazemipur, 2012-2013 Lisa Kaida, 2014-
○ NB Social Policy Research Network	n.a.
Prairie Regional RDC ➢ University of Calgary (2001)	Augustine Brannigan, 2001-2005 Richard Wanner, 2005-
▪ University of Lethbridge (2009)	Abdie Kazemipur, 2009-2012 Tom Perks, 2012-
QICSS ➢ Université de Montréal (2001)	Céline Le Bourdais, 2000-2010 Danielle Gauvreau, 2010-2015 Benoît Dostie, 2015-
▪ Université de Sherbrooke (2004)	Michel Préville 2004-2005 Sylvain Bourdon, 2005-2008 Alexandre Morin, 2008-2010 Alain Vanasse, 2010-
▪ Université Laval (2005)	Bernard Fortin, 2005-2009 Richard Marcoux, 2009-2011 Louis-Paul Rivest, 2011-2013 Guy Lacroix, 2013-
▪ Université du Québec à Montréal (2005)	Pierre Lefebvre, 2005-2010 Philippe Merrigan, 2010-
▪ McGill University (2006)	Céline Le Bourdais, 2006-09, 2011- Michael Smith, 2010-2011
○ Concordia University	n.a.
○ Université du Québec (network)	n.a.
○ INRS	n.a.

Institutions	Academic Directors
Queen's RDC ➢ Queen's University (2005)	Chris Ferrall, 2005-2012 Jeffrey Moon, 2012-
SKY RDC ➢ University of Saskatchewan (2008)	Carl D'Arcy, 2008-
SWO RDC ➢ University of Waterloo (2001)	K. Warriner & J. Goyder, 2001-04 J. Goyder & B. Cozzarin 2004-05 B. Cozzarin & K. Warriner 2006-07 B. Cozzarin 2007-2008 Mary Thompson, 2008-2009 Lori Curtis, 2009-
▪ Guelph University (2011)	Michele Edwards, 2011-2014 Carol Perry, 2015-
○ Wilfrid Laurier University	n.a.
Toronto Regional RDC ➢ University of Toronto (2001)	Blair Wheaton, 2001-2003 John Hagan, 2004 Michael Baker, 2004-
▪ York University (2009)	Michael Ornstein & Glenn Stalker, 2009-2011 Glenn Stalker, 2011-2012 Michael Ornstein, 2012-2013 Les Jacobs, 2013-
○ Ryerson University	n.a.
UWO RDC ➢ University of Western Ontario (2005)	Roderic Beaujot, 2004-2014 Piotr Wilk and Paul Paré, 2014-
▪ University of Windsor (2010)	Daniel Edelstein, 2010-

- ➢ RDC
- ▪ Branch
- ○ partner

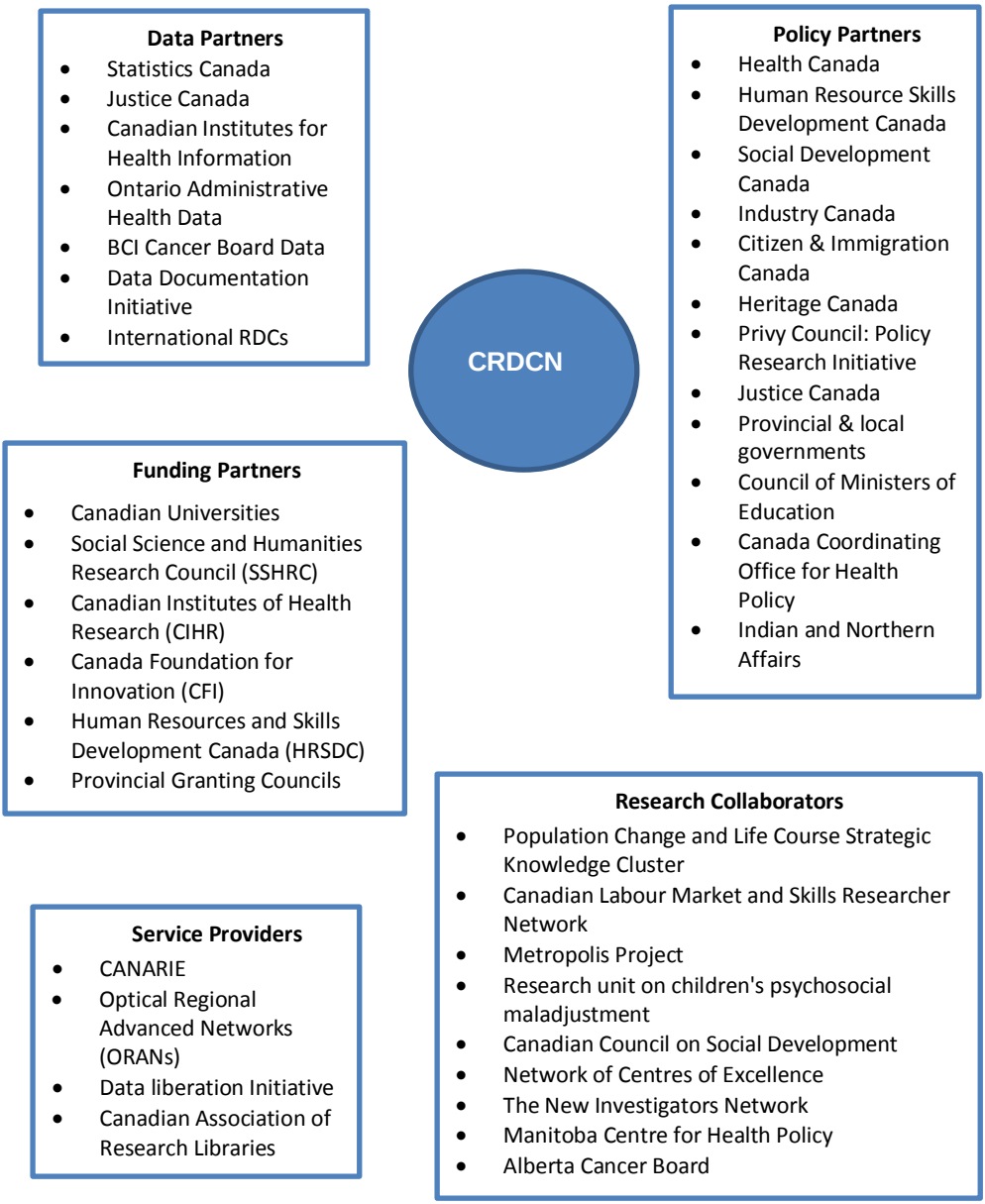
Appendix 2: Map of the CRDCN as of December 2013



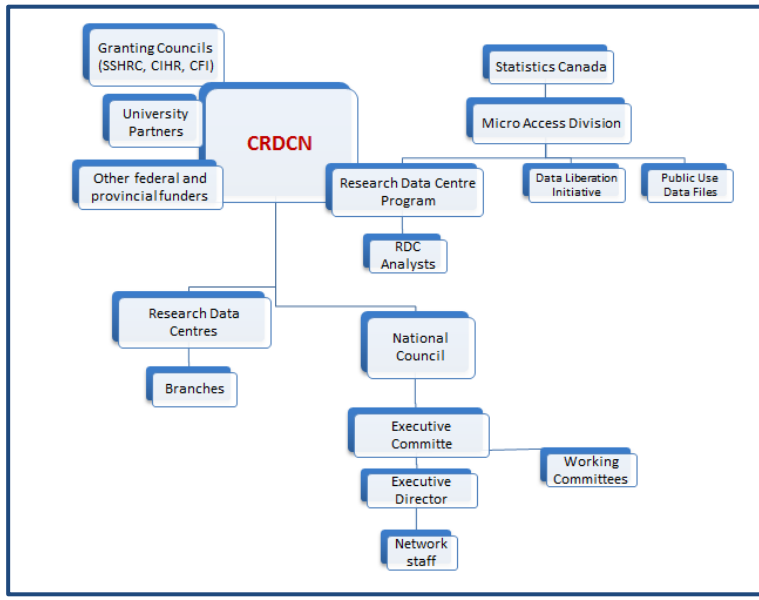
Appendix 3: Themes of the CRDCN Annual Conference, 2003-2013

Year	Theme	Organizer
2003	Transitions in Employment, Income, and Wellbeing	McMaster RDC (Hamilton)
2004	From Human Development and Health Research to Public Policy : The Challenge of Knowledge Transfer	Prairie RDC (Calgary)
2005	Canadian Families Under Pressure	QICSS (Montreal)
2006	Conference on Education, Training, and the Evolving Workplace	BCI RDC (Vancouver)
2007	Life Course Transitions of Children and Youth	Atlantic RDC (Halifax)
2008	Comings and Goings: Migration, Policy, and Youth	COOL RDC (Ottawa)
2009	Health Over the Life Course	UWO RDC (London)
2010	Economic Relations Between Children and Parents	Queen's RDC (Kingston)
2011	Canada Coming of Age: The Policy Impact of an Aging Population	Alberta RDC (Edmonton)
2012	Evidence-Based Policy, Formation and Evaluation	NB RDC (Fredericton)
2013	Canadian Data: Looking Back, Moving Forward	SWO RDC (Waterloo)
2014	Investing in Our Futures	Manitoba RDC (Winnipeg)

Appendix 4: CRDCN Community



Appendix 5: CRDCN Organizational Chart, 2013



Appendix 6: International Peer Review Evaluation, 2005

Research Data Centres Funding Application, 2005

Peer Review Committee

Chair

Angela Dale Quantitative Social Research, ESRC, University of Manchester School of social sciences	Microdata issues around data release

Members

Barbara Torrey Visiting Scholar, Population Reference Bureau, USA	population research; demography; income security; health; statistical analysis
Andreas Laupacis President, Institute for Clinical Evaluative Studies Health Services Research, Sunnybrook and Women's College Health Services Centre Institute for Clinical Evaluative Studies Health Services Research	health economics; economic evaluations
J. Bradford Jensen Deputy Director, Institute for International Economics	international trade, methodology, statistical analysis; competitiveness and productivity growth; former executive director of Carnegie Mellon Census Research Data Centre

Committee comments/Commentaires du comité:

The RDC Adjudication Committee found the application to be meritorious and recommended funding as requested.

The adjudication unanimously agreed that the RDC application for renewal was of the strongest possible quality and perhaps one of the best applications that the members have had the pleasure of adjudicating. It found that the past accomplishments of the RDCs and the RDC Network were stellar and that the proposal for renewal will enhance significantly its impacts on research and Canadian society. In fact, several international committee members expressed great admiration for the RDCs and one member argued strongly that the governance structure of the RDCs is precisely that which he had wanted to be applied in the US. Very positive comparisons were drawn between the role and function of RDCs in Canada and in the US.

In making this recommendation for continued support, the committee was clear that the partners (Statistics Canada, the CIHR and SSHRC) are receiving great value for the funds and that the proposed new network activities are most innovative and must be allowed to proceed.

Moreover, the committee judged that the capacity development and student training components of the RDCs have been and will continue to be very successful. It agreed with the applicants in their decision to not apply user fees; cautioned against requiring the network to solely support policy research, stating that new knowledge must be generated before policy relevance can be determined. The committee also recommended that more efforts be made to ensure international comparisons insofar as it will inform Canadian policy; and, that the levels of host university support (cash and in-kind) should never be less than the contribution from CIHR and SSHRC.

Further recommendations include that the RDC network develop a mean of ensuring that the participating-host institutions are able to report in a standardized fashion with respect to the cash and in-kind support they provide to their centre. Moreover, the committee was particularly favorable with respect to the proposed policy theme researchers, judging that the value-added was very high and that activity should be enacted regardless of the funds that the CIHR and SSHRC are able to provide.

Chair of the Research Data Centres National Coordination Committee: Dr. Raymond Currie (currierf@mts.net)

Appendix 7: Rationale for Refusing User fees (2006)

♦ In the mid-1980s, much of the quantitative research community was diverted from using Statistics Canada microdata files because of a substantial increase in the costs of the Public User Microdata Files. We developed a policy to eliminate user fees in most instances to enlarge the community of researchers committed to the use of Canadian survey data.

♦ There are inevitable obstacles to conducting research in a RDC (investment in quantitative analysis; logistical constraints associated with having to use a secured environment; access procedures...). The academic directors and SSHRC felt that adopting a user fee structure would add to these obstacles, discouraging potential users further. These reasons are still valid today (culture of "quantitative analysis" still not deeply rooted in Canada).

♦ A significant component of our operating funds come from SSHRC and CIHR. We do not believe it would be appropriate to have one agency (SSHRC) fund the Network with a block grant and another agency funded by user fees.

♦ Universities are paying in excess of 50 percent of the costs, funds that would not otherwise be available under a funding model that depends on individual grants.

♦ The RDC program is still relatively young, with a number of sites only a few years old. Many sites remain far from their full research capacity. There is a need to encourage new users for the reasons given above.

♦ A user-fee model would provide monies from CIHR for researchers but a large number of researchers would be left out. Unless special provisions were made, students working on their theses and dissertations, those involved in graduate courses offered through the Centres, as well as all researchers conducting non-medical research would be disadvantaged.

♦ Most RDC Analysts are skilled researchers themselves and provide others working in their RDC with important advice about the data and statistical methods to analyze them. Also, once we get the metadata up and running, researchers will be able to benefit from others' experience with the data. Advantages of this kind are not available to individuals working on their own.

♦ We are operating as a network with each Centre contributing to the whole, which is greater than the parts. The differential funding formula would weaken the Network when we engage in activities beyond actual contracts that researchers undertake. The network dimension, particularly the website and dissemination and social policy activities of the Network, as well as administrative dimensions would be particularly weakened.

♦ Some Centres conduct far more health research than others. User fees would increase the disparities for funding opportunities between Centres and could even affect which Centre was selected to undertake the research. It would weaken the Network.

♦ Contracts are approved for the RDC program, not just for a given Centre. With user fees, a researcher may begin his or her contract in a Centre that does not charge user fees and then continue the contract in a Centre that does (e.g. while on sabbatical). In the past, this has happened. We don't find this helpful.

♦ Contracts also draw researchers from multiple institutions, some that would charge user fees and others that would not. Some of these lead researchers may come from a medical field while others may not. What is best for the research contract rather than a fee structure should determine where the contract is centred and who leads it.

Appendix 8: CRDCN letter to Minister Clement - Census long-form questionnaire

Industry Canada
Office of the Honourable Tony Clement
Minister of Industry
C.D. Howe Building
235 Queen Street
Ottawa, ON K1A 0H5
9th July 2010

Dear Minister Clement

We write on behalf of the Canadian Research Data Centre Network to express our concern about the recent decision to cancel the mandatory long-form questionnaire as part of the 2011 Census of Population. Our Network gives researchers access to detailed national and provincial data – including census data – in secure laboratories on 24 university campuses across Canada. We were surprised, therefore, by media reports that this decision was made without consulting Census data users – not only the university researchers we represent, but also municipalities, provincial and territorial governments, NGOs, social and cultural associations, as well as private sector marketing and business firms and organizations. We urge you to seek such consultation and reconsider this decision.

Data from the Census long form are uniquely important. They function as the basic source of information about the population of Canada and the benchmark against which all other data are measured and evaluated. The long-form questionnaire is a primary source of knowledge about such matters as language, education, income, housing, geographic mobility, and ethnicity. It is widely used by researchers to enhance our understanding of Canadian society; by city planners to make policy decisions on a neighbourhood-by-neighbourhood basis; by private industry to decide about business location and marketing, and by federal and provincial government departments to assess which policies to pursue and how to allocate budgets.

Not only is the combination of questions on the long form Census unique, it is the only large-scale survey to gather detailed information on all household members. The questions asked in other Statistics Canada surveys overlap parts of the Census content, but the sample sizes in these surveys are not nearly large

enough to provide the level of detailed information that census users require about the characteristics of people living in each province and in municipalities both large and small within those provinces.

As reported in the Canadian Press of July 1st, the (only) justification for doing away with the long-form census questionnaire is that "many Canadians had complained of [its] coercive and intrusive nature." It is true that some people have made such complaints. It is also true that, as with tax forms which are also mandatory, the Census asks something of Canadians in order to achieve a public good. The vast majority of Canadians accept this and readily comply. Fortunately so, as the usefulness of the long-form Census depends critically on the exceptionally high response rate – over 95 percent, the highest of any G20 country – that is only possible with a mandatory questionnaire.

Replacing it with the voluntary National Household Survey, as has been proposed, is not an acceptable alternative. The average response rate to voluntary Statistics Canada surveys is of the order of 70 percent. The problem is that the 30 percent who do not respond are likely to be drawn disproportionately from the most vulnerable groups in society, including aboriginal peoples, persons with weaker language skills, newly arrived immigrants and the low income elderly. Young people, especially in the critical years of post-secondary education and entry into the labour force, are also under-represented. Our understanding of these groups would be diminished, and policy measures would be based on much weaker evidence.

Data confidentiality is taken extremely seriously by Statistics Canada. Over 3000 researchers have worked with confidential master files from previous censuses, household surveys and other sources in our Research Data Centres across Canada. To access data in these secure laboratories, researchers must submit to a personal security check by the RCMP, and sign a confidentiality agreement that could result in criminal prosecution if information is divulged.

As a Network, therefore, we are well-placed to assess both the confidentiality of Statistics Canada census and survey data and the "public good" they offer. Without a single breach of confidentiality in the Network's ten years of operation, research carried out in our centres has offered invaluable insights into countless issues at the heart of Canadian society and provided planners and decision makers with the information they need to help ensure that tax dollars are used for the public good.

The importance of this unique and internationally recognized cornerstone of knowledge about our society and the basis it provides for evidence-based policy

cannot be stated strongly enough. A publicity campaign to raise awareness of the benefits to Canadians of this information would be a far more effective way of dealing with complaints than abolishing the Census long-form questionnaire, and we would be more than happy to participate in such an undertaking.

Yours sincerely,

Raymond F Currie, Executive Director Emeritus
Robert H McNutt, Executive Director
Byron G Spencer, Chair, Executive Committee