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IMPROVING ACCESS TO ABORIGINAL LANGUAGE MATERIALS IN THE UNICODE AGE: A NUNAVUT CASE STUDY IN DEVELOPING MULTILINGUAL AND MULTISCRIPIT DESCRIPTIVE CATALOGUING STANDARDS FOR AN INTEGRATED LIBRARY SYSTEM

BY

CAROL RIGBY

A dissertation submitted in partial fulfilment of the requirements of the Master of Science Degree in Information and Library Studies

The Robert Gordon University
Aberdeen Business School
Department of Information Management

2008
Note on Inuktitut Syllabic Text

*Please note:* the installation of Pigiarniq or another Unicode Inuktitut font is needed to view some instances of Inuktitut text in electronic versions of this dissertation correctly. The researcher can supply a copy of this font if required.

Acknowledgments

I would like to thank Alan MacLennan for his guidance and patience in the development and writing of this dissertation, and Dr. Peter Reid for his encouragement of my participation in this course of study.

I would also like to acknowledge the support and active participation of all the Nunavut Libraries Online partners in the writing of this dissertation, through the generous access they have given me to their library system databases, their participation in interviews and discussion, and enthusiastic interest in the final results of this research.

On a personal level, I wish to thank my husband, Bruce Rigby, for his active and steady support of my professional development and for enabling this pursuit of a subject of deep interest.
Abstract:

The incorporation of multiple languages in multiple scripts into automated library catalogues was investigated, using a case study of the descriptive cataloguing practices in Nunavut, Canada, to illuminate various issues. The literature review examines those areas of international cataloguing standards that govern or may be applied to multilingual catalogues, and how various systems worldwide are dealing with these issues. Through a qualitative case study incorporating a variety of research techniques, it is determined if and how these international standards are being applied in Nunavut, where public services are legally required to be offered in English, French, and Inuit languages. Finally, Nunavut practice is evaluated in the light of new standards such as the IFLA Statement of Cataloguing Principles (2007) and the evolution of AACR2 into RDA, which will affect multilingual descriptive cataloguing procedures in the future.

The case study involves four small territory-wide library systems in the newly established territory of Nunavut, where Inuit form 85% of the general population and four official languages, including two forms of Inuit language, are used in government and daily discourse. The public, court of justice, legislative and college library systems share a common catalogue system and joint web-based online public access catalogue, with separate databases to meet their different client needs. Over the past three years, new developments in technology and translation have made it possible to start incorporating the syllabic orthography that is most commonly used for written Inuktitut into the system. By examining each system in depth with identical methods, such as management and staff interviews, analysis of representative catalogue records, review of documented policies and procedures, and examination of user interaction with the OPAC, the study illuminates those descriptive cataloguing practices that are most helpful, those which may require changes, and the resources that may be required in order to have an effective catalogue that will meet user needs in many languages, including endangered aboriginal languages.
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1. INTRODUCTION

1.1 Research Context and Rationale

Demand is increasing worldwide for universal access to information, databases, and catalogues. As the proportion of English speakers on the Internet decreases overall in relation to users of other languages and scripts, expectations rise that material and services should be available in many languages (Pavani 2001; Phillips 2005; Kessler 2007). As well, many “minority” language groups feel that the Internet and related tools such as databases and library catalogues can be used to preserve and revive their languages (Lockwood 2005).

Libraries now predominantly use electronic catalogues, and with developments in technology and cataloguing techniques, it is becoming increasingly possible to incorporate languages other than English into catalogues that can be made accessible through online public access catalogues (OPACs) and over the Internet for general public searching. This expectation of being able to use other languages is both fed and satisfied by the increasing ability of computer systems to accommodate languages other than English in an online environment, and has accelerated notably since the introduction of Unicode 4.0 in 2003 (Davis 2003) and Unicode 5.0 in 2007 (Unicode Inc. 2007). Unicode fonts are gaining increasing acceptance and make it possible for users of individual and networked systems, as well as Internet web sites, to view and input character sets other than standard roman orthography. Thus the need to transliterate non-roman publication information into roman orthography, as has been the practice of the Library of Congress (LC) for years, is being overtaken by the need to be able to present materials in their original scripts. This presents a different set of cataloguing challenges for libraries serving a multilingual population.

Many library jurisdictions have to work in more than one language, whether required by law, as official government policy, or simply to provide better service for a multilingual patron set. Some of these languages also are not represented by roman script (e.g. Inuktitut, Hebrew, Chinese, Arabic, Hindi), and may have directional issues as well (e.g. reading right-to-left). However, as the technological developments permitting the use of these scripts in catalogues are relatively recent, these jurisdictions have little practical guidance in how to implement existing library codes and standards and integrate them
into their provision of catalogue services to their patrons in languages other than English. They may also be lacking the political will or encouragement to move into multilingual data access (MacDougall 1997). Those working in the field of multilingual catalogue record creation can feel isolated or that they are grappling with these issues in a procedural vacuum.

Multilingual service can also be expensive. Although there are large consortia available from which users of English can download high-quality catalogue records, effecting savings in cataloguing costs, this option is not readily available for many other languages, particularly if that language is one of the world’s threatened aboriginal languages. It is not hard to imagine that, once computing hurdles of representing script are overcome consistently, there should be cataloguing consortia for languages spoken by millions of people, such as Chinese, Japanese, Korean, Arabic or Hindi. OCLC’s WorldCat, for example, anticipates adding some 1.5 million records from the National Library of China to its database in 2008, which will be displayed in Chinese characters (OCLC 2008a).

But what can be done for languages such as Inuktitut, the language of the Canadian Inuit, which is spoken by only around 50,000 people in the world? Does access to a multilingual catalogue help the preservation of that language and world view? How does one go about creating descriptive cataloguing standards and practices for languages that have little written history or publishing and bibliographic tradition? And can such a multilingual and multiscript catalogue be created without incurring exorbitant costs?

1.2 Aims and objectives

The aim of this research is to contribute to the development of a practical framework of best practices for multilingual cataloguing that both respects existing library cataloguing standards and takes advantage of the possibilities of new developments in cataloguing standards and technology. The ultimate goal is to make information in any library system as accessible as possible to all of its clients in the language of their preference, and also to make such information more widely available in an Internet-linked world.
The objective of this dissertation is therefore, by means of an in-depth case study of the
development of multilingual cataloguing in Nunavut, Canada, involving English, Inuktitut,
Inuinnaqtun and French, to determine whether libraries in Nunavut follow accepted
international standards and practices in their treatment of aboriginal languages as they
try to incorporate them into a multilingual and multiscript online-accessible catalogue,
and if so, whether these standards are adequate and whether their practice will merge
gracefully with new developments in cataloguing standards. The literature review lays
the foundation for understanding current international practice in descriptive cataloguing
in multilingual contexts, and the case study examines Nunavut libraries’ practice in detail.
The final result, it is hoped, will be to illustrate these issues in action and thus contribute
to the literature on evidence-based library practice in this area.

1.3 Research Approach and Dissertation Structure

In the last two decades, library catalogues in Nunavut have moved from physical cards
through CD-ROMs to full automated Integrated Library Systems (ILS). Approaches to
handling different languages in these catalogues have changed as well. For many years,
the standard was to translate or transliterate languages such as Inuktitut into English
catalogue records for use by a largely English-speaking clientele. Now, with the
establishment of Nunavut as a territory in its own right in 1999, and with 85% of the
population being Inuit, the aboriginal languages of Inuktitut and Inuinnaqtun have taken
on new significance, and efforts are being made across the territory to incorporate these
languages into daily operations. A study of this process in a library context cannot, by its
very nature, be a purely quantitative or technical study; there are too many issues of
politics and society involved, beyond the simple application of some cataloguing rules.

Therefore, this research will take a pragmatic approach, as described by Creswell (2003).
Pragmatists are chiefly concerned with examining problems and finding solutions, using
a variety of research approaches to achieve these goals. Both qualitative and
quantitative methods thus can prove useful in examining different facets of a question,
providing a well-rounded dataset that is capable of examining both tangible and
intangible elements of a problem.
A literature review is an important part of such problem-solving, as it can delineate the current practices of other systems or jurisdictions in terms of implementing existing library standards. Cataloguing practices tend to become implemented as they prove themselves to be useful, and those wishing to move towards a multilingual model of service will want to know what others have done, and how and why they have done it.

Qualitative methods are also often more successful for obtaining answers to the “why” of research questions, helping to determine what factors may have caused the outcomes that can be measured more concretely—the “what” or “how many” of the question (Given 2007). It has also been argued that narrative approaches add substance and depth to qualitative research, providing context and interpretation for the facts that are collected (Brophy 2007). Since any multilingual society is by nature complex, an element of narrative formed an essential part of this research project, and will be represented by interviews with those involved in the creation and maintenance of a multilingual catalogue. At the same time, relatively “hard” data for this research has been gathered in the form of, for example, sample records from catalogues, which can be analysed and compared both to each other and to the international standards governing cataloguing.

Above all else, this research is intended to represent evidence-based librarianship: that is, an approach that gathers the best available evidence derived from user reports, librarians’ observations and research-derived evidence, to improve the quality of professional judgments and develop best practices (Brophy 2007).

This dissertation will, as a result, be structured in three main parts:

- A literature review of existing international library standards and their application to a multilingual descriptive cataloguing context, including documentation of current practice in this area in a number of countries
- An explanation of the unique political and linguistic context of this study and of the case study methodology, followed by a detailed analysis of current practice among the members of the Nunavut Libraries Online catalogue consortium and their efforts to incorporate Inuit languages into their library records
- An evaluation of this practice in the context of new international developments in cataloguing standards, chiefly the IFLA Statement of Cataloguing Principles and the upcoming transformation of the Anglo-American Cataloguing Rules (AACR)
into Resource Description and Access (RDA), and suggestions regarding what future work is still required to implement a fully multilingual system.

2. LITERATURE REVIEW: CURRENT PRACTICE IN MULTILINGUAL CATALOGUING AROUND THE WORLD

A literature review was conducted to provide a sound foundation for the examination and evaluation of Nunavut’s multilingual cataloguing policies and practices. A review of new standards of bibliographic description that are still under development such as the draft IFLA Statement of Cataloguing Principles (2007) and the transformation of AACR into RDA, and their relevance to international/multilingual issues, is also included in the section of this dissertation analysing the effectiveness of Nunavut cataloguing practices in the light of these forthcoming standards. They will therefore be discussed only briefly here to provide context for a later discussion.

2.1 Issues of general interest in multilingual cataloguing: enabling through technology

A combination of international migration and improved Internet access in many languages has meant that many jurisdictions have had to give increased thought to providing service of some sort in many languages in order to reach their population. Immigration, multiculturalism, and the consequences of adopting multicultural policies for library services are discussed extensively in the Canadian context by the Working Group on Collection policies of Library and Archives Canada (Gamache, Martin and Nowosieleski 2001); they include the importance of reaching out to the aboriginal Canadian population. Vancouver Public Library, one of Canada’s largest public library systems, provides one model of multilingual service with its website: in English, with a catalogue chiefly in English, it also provides web pages with descriptions of library services not only in English and French, but also Chinese, Hindi, Japanese, Korean, Punjabi, Spanish and Vietnamese, reflecting the city’s polyglot population (Vancouver Public Library 2008). Many Canadian library systems are, however, more concerned with delivering services in multiple languages and providing “multilingual materials,” defined by Dilevko and Dali as “foreign languages other than English and French” (2002
p.116), than they are with how to represent these items and make them accessible through cataloguing (Chilana 2001; Dilevko and Dali 2002).

Library systems in Australia were among the first to discuss some of the issues in providing services to patrons in many languages, given the large Asian population there (MacDougall 1997; Acevedo and Bresnahan 2005; Jilovsky and Cunningham 2005). Although the United States is not federally bilingual or multilingual, American libraries increasingly recognise the need to expand services to include patrons of other languages, including immigrants and international students (Association for Library Collections and Technical Services, ALA 2007; McClure and Krishamurthy 2007). The International Children’s Library, a freely available online library of children’s literature, faces challenges typical of digital multilingual virtual libraries: “selecting and processing books from different countries, handling and presenting multiple languages simultaneously, and addressing cultural differences” (Hutchinson et al 2005 p. 4).

Before one can begin to discuss issues of actual bibliographic description in multiple languages and scripts, one has to acknowledge the difference technology has made in making this kind of description possible at all. Unless one has a cataloguing system that can accommodate the necessary scripts, it is impossible to proceed with bibliographic description in certain languages. Much of the earliest literature on multilingual and multiscrit cataloguing focuses on the technical challenges of trying to incorporate other scripts into a standard, roman-orthography-based or non-Unicode cataloguing system (Cain and Moore 1996; MacDougall 1997) or in setting up multilingual catalogues (Fluhr et al 1999; Gangopadhyay and Huang 2000). Now, the explosion in international Internet use since the turn of this century thanks to Unicode, combined with the increased sophistication of ILSs that permit Internet access and linkages has led to the creation or great expansion of international multilingual consortia such as the European Library (European Library 2007a) and OCLC’s WorldCat (OCLC 2008b).

Multilingual capacity in integrated library systems now appears to be based primarily on perceived marketability: where there is a market, the ILS vendors will go. The Asian world, the Middle East, and India are huge potential markets, thus there has been an increase in development of systems that will accommodate alternate languages and scripts to English and roman orthography. In 2000, when the first Nunavut Legislative
Librarian was tasked with finding a true-MARC ILS that would accommodate Inuktitut in syllabics, VTLS’s Virtua™ system was the only true Unicode-supporting system available (Rigby and Patterson 2007). Now this functionality is available in most of the large commercial systems such as Virtua™ (VTLS, Inc. 2002; 2007), Ex Libris™ Group, which manages Voyager® and Aleph® (Ex Libris Group 2008), and SirsiDynix, which offers Symphony®, Unicorn® and Horizon® (SirsiDynix 2008). An international commercial cataloguing consortium like OCLC offers its services and catalogue records in English, French, Spanish, Portuguese, Chinese, Japanese, Dutch and German. (OCLC 2008b)

Unicode use is a key factor in multilingual capacity. The problem still remains of native/embedded fonts in computer systems, as well as the use of “heritage” fonts and character sets in older webpages, ILSs and workstation installations. Unicode makes non-roman character sets widely usable and available now, but often libraries face difficulties in getting alternate fonts installed and universally accessible both through client and web OPACs (EARLE, Y., personal communication. 28 October 2005). If one browses through the world’s online multiscrit catalogues, some use glyphs for certain parts of their display; others have content that cannot be viewed unless one already has the necessary script downloaded. Of these, some like the National Library of India provide scripts to be downloaded as part of their welcome page (National Library of India 2008); others, such as Nunavut Libraries Online, look like gibberish unless one knows to download the necessary script or can find a link to the proper font to download (Nunavut Libraries Online 2008). Yet others are viewable because they use a script that is both Unicode and used by sufficient numbers of people to be loaded as part of most current computer systems’ basic language capabilities (National Library of China 2008; Russian State Library 2008).

Just because a Unicode set has been defined for a script, such as Canadian Aboriginal Syllabic (CAS) (Unicode Inc. 2006), does not mean that every computer will automatically be able to decipher it. The National Research Council Canada (2008), for example, has created a webpage collecting samples of and specifications for every CAS font currently available, the kind of tool needed to update and maintain systems that might have older, pre-Unicode fonts in them. They are also wrestling with the issue of
constructing search engines that will be able to recognise and use texts posted to the Internet in “heritage” pre-Unicode syllabic fonts (Farley and Stojanovic 2007).

Another problem is that of large or national systems with older ILSs that are not fully Unicode compatible. What happens when the “national” system lags behind local, newer ones? Canada’s AMICUS catalogue is a case in point (Library and Archives Canada 2008); some Nunavut libraries have been unable to submit their records to the national catalogue because it will not accommodate their syllabic content (Legislative Librarian interview). Cazabon discusses the impact of Unicode implementation on libraries with languages in many records, using the large French university consortium BULAC as an example (Cazabon 2002). LC faces some unique problems in its adoption of Unicode, as it has been incorporating a limited number of non-roman scripts for years (the “JACKPHY” set: Japanese, Arabic, Chinese, Korean, Persian, Hebrew and Yiddish), and supplies records containing these languages to catalogues all over the world, not all of which have necessarily migrated to full Unicode compliance. Its own migration in late 2005 to the “Voyager with Unicode” release brought out a number of the technical issues in updating records and data sharing between systems with different coding, for example UTF-8 vs MARC-8 (Library of Congress 2006).

The economics of language also affects cataloguing policy: Unicode-compatible technology and translation cost money. Service may be trumped by money issues, when a library’s budget is unable to cope with staffing, technology or translation requirements. ALCTS notes, “Supporting access to non-English materials in the context of an English-language catalog requires significant additional resources” (ALCTS, ALA 2007 p.3). Is translating (not just representing) record content needed or appropriate? Cataloguing consortia like OCLC have issues with taking in records from other countries in other languages, trying to decide how authoritative these are, whether of sufficiently high quality in terms of adherence to AACR2 standards, and, if they are for items in other languages such as Spanish, whether the records should then be translated for an English audience or kept in the original language (Mueller and Steinhagen 2003).

A final key issue in implementing multilingual policies is the national and political context of such decisions, which in many cases must serve as a precursor to such implementation (Cunningham 2004 p.113). Internet and electronic access is seen as a
tool of preserving language and culture; it permits both both increases in electronic publication in endangered languages, and use of these languages in electronic fora. In some cases, multilingual catalogues can be seen as tools of language preservation and cultural empowerment (Accart 2005; Kessler 2007; Tesnière and Lesquins 2006; Lockwood 2005; Gamache, Martin and Nowosielski 2001; Shadbolt 2005). Legislation within a political jurisdiction may also encourage or require the use of multiple languages, regardless of cost. Appendix A contains a statement from the Languages Commissioner of Nunavut regarding the importance of multilingual catalogues there (Kusugak 2007); the impact of language legislation on the cataloguing language policies developed by Nunavut libraries will be discussed in detail in the case study.

2.2 Library cataloguing standards and their application in a multilingual environment

Along with technology and an associated multiplication of media and formats for bibliographic entities, catalogue standards are continuing to evolve. Notably, a major revision of AACR is currently underway, which will result in a complete reorganisation of the presentation of cataloguing rules in a way that will make them more flexible for use in new and emerging formats. Other approaches to cataloguing are also being developed and implemented, notably Functional Requirements for Bibliographic Records (FRBR) and its close relation, Functional Requirements for Authority Data (FRAD), which present an entity-relationship model of cataloguing. MARC 21 coding, used for the exchange of bibliographic records, also continues to evolve; metadata structures for web pages offer yet another cataloguing approach. Some may have more multilingual functionality than others. The question is, then, are the cataloguing standards and tools commonly in use now adequate to represent more than just English-language items?

The library world has benefited for many years by having a number of widely promulgated and accepted standards for cataloguing, from the Paris Principles enunciated by IFLA in 1961 (Chaplin and Anderson 1961) through the ISO standards established for catalogue records such as the ISBD and the development of MARC coding through the last quarter of the 20th century for the electronic exchange of bibliographic records (Network Development and MARC Standards Office, Library of
Congress and Standards and Support, National Library of Canada 1999). More particularly, the English-speaking library world has developed the *Anglo-American Cataloguing Rules*, now issued in its second major revision as AACR2R (Joint Steering Committee for Revision of AACR 2005), as the primary descriptive cataloguing standard. This standard has been accepted, supported and developed by the national libraries of Great Britain, the United States, Canada and Australia, and been adopted as a framework by many others such as the Swiss National Library (2006). Thus it has formed the foundation of much of the world’s cataloguing for the last 30 years and enabled the current environment of shared and copy cataloguing.

One cannot deny, however, the English bias of the current AACR2R rules that are relevant to incorporating languages other than English into a catalogue record. Its instructions for bibliographic description are useful in almost any language, and are structured in such a formal way that it is possible simply to translate or transcribe for another language the information that is required for each cataloguing area, such as title and statement of responsibility, physical description, publication information, even standard notes such as frequency of issue, presence of indices and bibliographies, etc. However, in many instances, the instructions for creating points of entry such as author identification are clearly intended for an English-speaking audience, for example the extensive sections on proper formats for names deriving from other languages such as 22.3 governing choice among forms of the same name, which gives rules for choice of language in 22.3B and for romanisation in 22.3C; there are also special rules for names in certain languages, for example, Arabic at 22.21 (Joint Steering Committee for Revision of AACR 2005). Institutions using other languages must make adjustments for local practice (Swiss National Library 2006).

Although AACR2R provides an adequate framework for cataloguing in most languages, the new RDA structure, which is geared to electronic data storage and presentation rather than card or paper, is intended to remove some of the English bias and make the cataloguing rules more internationally usable. This is especially notable insofar as it is founded on FRBR and its focus on relationships between expressions of an item, which is good for cross-referencing translations and alternate language editions. RDA will also have a stronger focus on representation of the item as is rather than representation in
the preferred language of the catalogue (Joint Steering Committee for Development of RDA 2007).

MARC 21 coding appears on the whole still to be adequate as a widely accepted medium of exchange between automated library systems. There is ongoing debate as to whether some other metadata markup format, such as Dublin core (Hillman 2005) or various web applications, would be more or less useful (Milstead and Feldman 1999; Eden 2004; Miksa 2007), but most ILSs currently are true-MARC compliant and provide a reliable framework for identifying types of catalogue record data regardless of language. It can be argued that for some time, AACR2 and MARC 21 have worked in concert as a cataloguing metadata scheme (Smiraglia 2005 pp. 13-14). In addition, modifications to the MARC coding system are being developed simultaneously with RDA to ensure that library systems moving to RDA as their cataloguing framework will be able to implement appropriate MARC coding to identify new types of catalogue fields (Joint Steering Committee for Development of RDA 2008).

The biggest handicap in records exchange between systems is that some MARC 21 environments may be confined to MARC-8 datasets and thus not accommodate full Unicode data (Library of Congress 2006). The MARC standards do provide code tables for “scripts for which valid MARC 21 character repertoires have been defined in UCS/Unicode” (Library of Congress 2004), which means full functionality for such scripts as Unified Canadian Aboriginal Syllabic (CAS) in a Unicode-compliant ILS such as the Virtua™ system used by the Nunavut Libraries. Character mapping from Unicode to MARC-8 is not possible for CAS, however, because it was not defined for the MARC-8 environment (Library of Congress 2004), which is what gives rise to such problems as the inability of Nunavut libraries to report holdings to AMICUS.

Many of the key problems associated with post-Unicode cataloguing using MARC have been discussed by Freyre and Bourdon (1999), such as how UNIMARC can deal with records ranging from one language in different scripts, different languages in the same single script, and different languages in different scripts. Another choice is whether to use parallel fields or parallel records to cope with multilingual records. It takes time for the international library community to reach consensus and publish revised standards for such major developments in a coding system, but general practice seems to be
changing in this area of MARC coding as libraries move from romanisation towards transcription using actual multiple scripts. This is the option provided in the 2001 update of Appendix D of the MARC 21 manual for Multiscript Records. The manual offers two models:

Model A: Vernacular and Transliteration - The regular fields may contain data in different scripts and in the vernacular or transliteration of the data. Fields 880 are used when data needs to be duplicated to express it in both the original vernacular script and transliterated into one or more scripts. There may be unlinked 880 fields.

Model B: Simple Multiscript Records - All data is contained in regular fields and script varies depending on the requirements of the data. Repeatability specifications of all fields should be followed. Although the Model B record may contain transliterated data, Model A is preferred if the same data is recorded in both the original vernacular script and transliteration. Field 880 is not used. (Network Development and MARC Standards Office, Library of Congress and Standards and Support, National Library of Canada 1999 Appendix D, p.1, October 2001 update)

Model A is the one that has been most commonly used in the past, notably by the Library of Congress for an essentially English-language catalogue. Increasingly, however, many library systems using Unicode-compliant ILSs that serve populations actively using other scripts are moving towards Model B, which is in fact the model adopted by several of the Nunavut libraries, incorporating multiple languages into one record rather than creating additional vernacular and transliteration fields or separate equivalent language records in different languages. This can be seen if one browses through the multiplicity of languages and scripts within records from online catalogues such as those of the National Library of China (2008), the national library of the Czech Republic (2008), or the Russian State Library (2008), using various Ex Libris™ products, or the Swiss National Library’s Helveticat (2008a), using Virtua’s Chameleon iPortal™.

2.3 Examples of multilingual cataloguing practice throughout the world

2.3.1 Online Catalogues and Multilingual Cataloguing Policies
One way to determine the extent of multilingual library systems in the world is simply to examine those that are now available over the Internet. National libraries are more likely than most to employ multiple languages, particularly in jurisdictions where two or more languages are in common use throughout the country. By cross-referencing the IFLA official list of national libraries of the world (IFLA 2008) with a list of national library
websites provided by the University of Queensland (2008), it is possible to examine a representative sample. About half prove to be multilingual, and many, depending on the languages involved, multiscript. For example, of the first 43 nations on the list (in alphabetical order from Albania to France), 21 have at least two languages, frequently the country’s main language and English, presumably as the Internet *lingua franca*. Several of these have more than two: for example, Andorra, with Catalan, Spanish, English and French; or Belarus, with Russian (in Cyrillic), Belarus, Ukrainian and English. The Russian State Library points out, in the most recent European Library newsletter:

> The bibliographic records [of the OPAC] give access to roughly 3 million titles in more than 200 languages—Russian, of course, but also 80 languages within the Russian Federation and 50 foreign languages. (Kasparova 2008 p. 3)

A question that arises when looking through the multilingual libraries accessible online is that of framework vs content: can one go without the other? Some systems focus on getting a web welcome page or a catalogue interface in multilingual format; others on ensuring the content of records is multilingual or represents the language of an item. WorldCat is an example of the former approach, as it collects records from a variety of cataloguing sources and so may have more than one record of a particular bibliographic entity in various languages (Mueller and Steinhagen 2003; OCLC 2008b). Thus, although they have eight different language page types to choose from, the language of the bibliographic records found will depend on the language of the cataloguing agency that submitted the record; this means one can find records for Inuktitut items that are catalogued in English or French. The National Library of China (2008) provides an English search engine, but it will return non-Chinese items catalogued in Chinese characters.

LLN and NAC are examples of the latter: currently the Nunavut Libraries Online webpages and search screens are available only in English, but the content of LLN and NAC records will accurately reflect the language content of the item being catalogued. Similarly, the Australian national library provides its web pages in English, but records containing many other languages (National Library of Australia 2008); the Danish national library has English and Danish pages, but records in many other languages including Greenlandic (Det Kongelige Bibliotek 2008). Kessler discusses the importance of language accessibility in the welcome pages of library catalogues as a manifestation of increasing multilinguality on the Internet, where minority languages make use of the
web to exist: an increasing number of welcome pages are no longer just bilingual, but multilingual (Kessler 2007 p. 13). He also stresses the importance of language access on more than a welcome page, feeling it is equally essential to translate the introductory page of any OPAC, which he finds rarely happens (Kessler 2007 p. 14).

Most of the multilingual websites post some kind of indication of their cataloguing and language policies, for example BULAC (2008), The European Library (2007b), the Swiss National Library (2006) and LAC (2007). These policies normally indicate as well their policies for non-roman language scripts, whether transcription or transliteration, and if the latter, the transliteration standards used (Bibliothèque universitaire de langues et civilisations 2005; Library and Archives Canada 2006; Bibliothèque Nationale de France 2008).

Perhaps the most carefully thought-through multilingual catalogues to date are those of Switzerland (Swiss National Library 2008a) and the European Library (European Library 2007b), both of which supply interface pages and search options in several languages, and not only have records in multiple languages but are actively working on the most difficult issue of all for multilingual catalogues, the development of cross-lingual search engines and thesauri (Clavel-Merrin 2004; European Library 2008a).

2.3.2 Professional literature discussing specific aspects of practice

Relatively few studies have been published discussing the practicalities of trying to implement a multilingual and/or multiscript catalogue. Some cover issues such as importing records, developing cataloguing teams, and determining what to include in records (Diaz et al 1997; Ugalde and Etcheverria 1998; Terekhova 2000; Jilovsky and Cunningham 2005). Banach and Carlson, for example, describe how adding one cataloguer competent in East Asian languages permitted the creation of records for a university library that could be shared with others in a consortium, a solution they found preferable to outsourcing (2000 pp. 230-231). Language representation options also come up frequently, and will be discussed in detail in the case study section.

The chief area of publication, which is beyond the scope of this thesis, is that of subject access through multilingual thesauri or cross-language search engines (Oddy 1999;
These are recognized as essential tools, especially for Internet searching, but cross-language search engines and multilingual thesauri are enormously complex culturally and linguistically, regardless of the technical difficulties involved, which are considerable (Bjørner 2006). Even IFLA (2007 p. [2]) says it will deal with subject access in a separate statement from its descriptive cataloguing principles, although it has issued guidelines for the construction of multilingual thesauri (Working Group on Guidelines for Multilingual Thesauri, Classification and Indexing Section, IFLA 2005). The most recently published British standard for structured vocabularies for information retrieval, BS8723-1 & 2: 2005, still only covers monolingual thesauri; instructions for multilingual thesauri are to be issued as “part 4” of this standard, still under development (McIlwaine 2006).

A very important decision is who holds the “authoritative” file on a controlled language, for cross-references to other languages, and who would maintain either the main language file or files or the cross-referencing tool (Clavel-Merrin 2004). For example, catalogues intended for French speakers can choose between Le répertoire des vedettes-matières (RVM) (Canada) or Rameau (France) as their French-language thesaurus, and there are strong arguments for maintaining such separate thesauri for the same language to reflect national differences in language use (Belair, Bourdon and Mingam 2006). There is considerable debate also as to whether this can be done with automated translation software. Michos, Stamatakos and Fakotakis, for example, discuss the development of software for handling multiple thesauri (1999). Miller (2006) considers the pitfalls of translation software generally in web content management systems. López (2000 pp. 86-87) discusses the difficulties inherent in basing Spanish-language subject access on a widely-used but thoroughly English thesaurus, the Library of Congress Subject Headings (LCSH). The European Library is making extensive efforts to develop a capacity for multilingual searches and results (European Library 2008a); given the resources devoted to and the variety of participants in their efforts, there seems to be some prospect of success there eventually.

Closely related is the issue of making library contents more visible to Internet search engines. There is a significant difference between searching for digital content available online, and searching a catalogue for pointers to a non-digital resource. Much energy is being expended on methods of increasing content exposure to search engines, for
example in the European Library’s current initiative to create truly multilingual collection descriptions for all the European Library member libraries, in 27 languages by July 2008 and in 35 languages by the end of 2008 (European Library 2008b). Search engines need also to be able to deal with character-set issues, as described by Farley and Stojanovic (2007), in order to find materials posted in pre-Unicode fonts—certainly a problem for Inuktitut on the web, and likely for other non-roman scripted languages.

In the area of multilingual authority records for persons and other entities, given the IFLA preference for establishing authority forms in the language or script of the entity, there is increasing need for cross-references between languages; name authorities face similar issues to sharing subject access, particularly between systems for copy cataloguing. LC is just now coming to grips with incorporating authority files with cross-references in other scripts into their system, as in Lerner’s discussion of the case of Hebrew, for example (2006). These can be dealt with within a multilingual system to some extent using available tools, as Nunavut case study will show, but without question there is need for international standards in authority control (Sardo 2004; Aliprand 2005). As opportunities to link into data from around the world increase, IFLA’s promotion of the concept of Universal Bibliographic Control (UBC) and the associated role of national libraries as the repositories and distributors of authoritative headings for their own personal and corporate authors makes increasing sense; but as Delsey explains,

First, there must exist a mutually accepted canon of principles, standards and practices governing the formulation and structure of the cataloguing data. Second, each national bibliographic agency must execute its responsibilities in a manner that is both comprehensive and consistent with the agreed standards. Third, there must exist an infrastructure that supports the efficient exchange of data between and among national bibliographic agencies. In practice, of course, it is unrealistic to expect that all these conditions will be met universally, but the degree to which they are or are not met will either extend or limit the effectiveness of any attempt to implement bibliographic or authority control on an international scale. (Delsey 1989 p.14).

With the development of FRAD and the increasing ability of systems to share multilingual and multiscript data, this goal appears to be much closer to achievement.
3. NUNAVUT LIBRARIES ONLINE: CASE STUDY CONTEXT AND METHODOLOGY

3.1 Nunavut: a Unique Environment with Special Challenges for Library Systems

3.1.1 Nunavut Land Claim, Government and Economy

The map of Canada changed in 1999 with the establishment of Nunavut as a separate territory, in fulfilment of conditions outlined in the settlement of the Nunavut land claim between the Canadian government and the Tungavik Federation of Nunavut.¹ Its division from the former boundaries of the Northwest Territories (NWT) created a unique jurisdiction, where the aboriginal Inuit population is in the majority and thus has, de facto, control of a public government. Unlike the First Nations (Indians) of Canada, Inuit had never entered into treaties with the government that confined them to areas such as reserves. Instead, the Inuit negotiated a claim settlement that carved out the area above the treeline in Canada, approximately 3 million square kilometres of tundra, ocean and ice, identified as the traditional homeland of the Inuit and thus called nunavut, the Inuktitut word for “our land” (Canada, 1993a).

See Figure 1 (following page) for a map of Nunavut.

This territory has been set up to operate on essentially the same terms as the NWT and the Yukon; they are still in some respects under the control of the federal Canadian government and do not have all the powers of a Canadian province, but operate as public governments, with representative elections to a Legislative Assembly and a full public service operating government programmes. However, Nunavut is distinct from the other two territories in that, as part of the claim settlement, roles were also negotiated for organisations representing Inuit to play a part in public administration through “institutions of public government” such as wildlife management boards, land use boards, etc., which were seen to protect the traditional interests of Inuit in the territory (Canada, 1993b).

¹ The Nunavut Act and the Nunavut Land Claims Agreement Act were both given royal assent in June, 1993, fulfilling the terms of the Nunavut Land Claim Agreement between the Government of Canada and the Tungavik Federation of Nunavut. The Nunavut Land Claims Agreement Act establishes the legal basis of the agreement; the Nunavut Act establishes the political entity of Nunavut in accordance with the terms of the agreement. (Canada, 1993c; 1993d)
Figure 1: Map of the Territory of Nunavut, Canada, Established in 1999
(Natural Resources Canada 2008)
In addition, pledges were made by the federal government to implement staffing quotas for Inuit within the Nunavut government in order to reflect the Inuit representation in the population (Canada, 1993b). The Government of Nunavut (GN) has expressed its own goals for preserving Inuit heritage and culture within the government in such documents as *Pinasuagtitavut: that which we’ve set out to do: our hopes and plans for Nunavut* (Nunavut 1999) also known as the Bathurst Mandate.

These lofty goals, however, are accompanied by a number of significant challenges. At their heart is simple economics: Nunavut’s whole population numbers around 30,000, scattered through 25 tiny communities (Statistics Canada 2008). There is no road network: remoteness and permafrost make road construction extremely costly, so these communities are linked primarily by air travel, also very costly, while a few weeks of open water in the summer permit only a limited resupply by ocean-going ships and barges. Every aspect of life is thus expensive, from the cost of food to the crippling cost of housing, which leads to shortages creating illness and social stress. The Inuit are a proud and resourceful people, but have only moved from a semi-nomadic, hunter-gatherer lifestyle into living in fixed communities in the 20th century, and must cope with what is essentially a shift from the stone age to the computer age in the space of a few decades (Dewar 2004). It is only in the last 20 years that secondary education has been available in all communities, and the impact on the Inuit social fabric of having a generation of children taken from their homes and sent away to school is still being severely felt (Department of Education 2003).

In releasing data from the 2006 census, Statistics Canada points out that large percentages of Inuit are in the youngest age groups of society: 23% are age 9 or under, and 56% under the age of 24 (Statistics Canada 2008). This places an enormous strain on the educational system, when coupled with a cultural environment that is still in many ways suspicious of and inexperienced with formal schooling, as evidenced by a recent report issued by Nunavut Tunngavik (2008). It is a struggle to increase literacy skills both within the formal primary and secondary schools system and for adult learners who may never have had the opportunity to complete formal schooling (Department of Education 2006).
The resulting environment makes it difficult to provide high-quality public services, particularly literacy-focused ones like library services. The formal education level of the population is generally low, resulting both in high unemployment among the local populace and the filling of well-paid government jobs by more qualified “outsiders.” Although there are programs in place for training and mentoring Inuit in professional and managerial positions, it is often difficult as well to persuade professionals such as accountants, doctors, nurses, lawyers, and librarians to move to Nunavut communities in order to provide the necessary mentoring. Inuit who do reach a professional level of training, such as teachers, are often “headhunted” away from these professions by lucrative offers of management positions within Inuit organisations or non-government groups (Department of Education 2006).

3.1.2 Nunavut’s Languages

Further complicating the provision of effective public services is the issue of language. Federally, Canada is a bilingual country with English and French as equal official languages. However, each province or territory sets its own laws for local languages of service. Nunavut inherited all of the Northwest Territory’s legislation upon division, until such time as separate laws are passed uniquely for Nunavut (Canada 1993c), thus also the Official Languages Act, which mandated English, French and several aboriginal languages as official languages in the NWT (R.S.N.W.T. 1988,c.O-1, s.4). In practical implementation, after division this meant English, French, and two Inuit languages, Inuktitut and Inuinnaqtun, the dialect of Inuktitut spoken in western Nunavut. The GN set a goal in the Bathurst Mandate to use Inuktitut as a working language in its administration by the year 2020 (Nunavut 1999).

Towards this end, the government is currently revising its Official Languages Act (Nunavut) to strengthen the support given Inuit languages, and has also introduced the Inuit Language Protection Act (Nunavut) to reinforce and protect further the language and its associated culture (Nunavut 2008a; 2008b). See Appendix B for the preambles of this legislation outlining the cultural significance accorded to language. This legislation will mandate the delivery of services and information in English, French, and the regional “Inuit language,” both within and outside government, as defined in the Inuit Language Protection Act:
Inuit Language

1. (2) Except as directed by the Inuit Uqausinginnik Taiguusiliuqtiiit under paragraph 16(5)(b), "Inuit Language" means,
   (a) in or near Kugluktuk, Cambridge Bay, Bathurst Inlet and Umingmaktuuq, Inuinnaqtun;
   (b) in or near other municipalities, Inuktitut; and
   (c) both Inuinnaqtun and Inuktitut as the Commissioner in Executive Council may, by regulation, require or authorize.

(Nunavut 2008b)

This will put additional pressure on all government and public service organisations to make service available in Inuit languages, which for organisations covering the whole territory would mean both Inuktitut and Inuinnaqtun as well as English and French.

More to the point, however, 70 percent of Nunavut’s population speaks Inuktitut or Inuinnaqtun as a first language (Statistics Canada 2008). A study done by the Nunavut Language Commissioner’s Office in 2005, *Preserving Inuit Dialects in Nunavut* (Tulloch 2005), includes figures from the 2001 Canada census indicating that the percentage of those who “speak the Inuit language very well or relatively well” ranges from 90-100% in the Inuktitut speaking communities to 60-80% for the Inuinnaqtun communities in the west. According to the 2006 Census,

the Inuktitut language was strongest in the region of Nunavik and Nunavut where more than 9 out of 10 Inuit could speak the language well enough to carry on a conversation. In contrast, the figures were 27% in Nunatsiavut and 20% in the Inuvialuit region. (Statistics Canada 2008)

Since 49% of the Inuit population of Canada lives in Nunavut (Statistics Canada 2008), residence here does appear to support and strengthen the use of their language.

The politics of language use and service, however, are fierce. English is the primary language of schooling past the early elementary grades and in most workplaces throughout Nunavut, and the mother tongue of 26% of the population. There is also a thriving French-speaking community in Nunavut’s capital, Iqaluit, but only 1% of Nunavut’s population identify their mother tongue as French (Statistics Canada 2008). The majority of *Nunavummiut* (residents of Nunavut) can, in fact, operate in more than one language, in varying combinations. The choice of which language to use in everyday discourse is often a struggle between the practicalities of dealing with the outside business world and the Iqaluit bureaucracy, which operate chiefly in English, and the desire to promote, support and develop the Inuit language (Dorais 2006). Many concepts
of 21st century Western society and technology simply do not exist in traditional oral
Inuktitut; then the debate becomes, do Inuit adopt anglicized terms, try to develop
conceptual equivalents in Inuktitut, or simply give up the battle and use English in areas
such as mathematics and computer science? In his 2006 study, Dorais documents the
phenomenon of many bilingual Inuit using Inuktitut for social and traditional discourse,
for example in areas such as family relationships, environment, and traditional activities,
but using English for professional and technical purposes in the work environment (p.
57-58).

A complicating factor is that the Inuit traditionally had an oral culture:

No attempts were made to develop writing systems for Inuit until after contact
with whites. When that contact occurred, it was white missionaries who made the
first attempts to reduce the Inuktitut language to written form. (Harper 1983 p.4)

This started with romanisation of Greenlandic Inuktitut in the 18th century by Lutheran
missionaries, and of Labrador Inuktitut by Moravian missionaries in the 19th. However,
these two forms of roman orthography took different paths; Greenlandic was
standardised early in the 19th century and now boasts a fairly rich written literature going
back 200 years.

In Nunavut, however, most Inuktitut is written in syllabics, a non-roman orthography,
developed originally for the Cree Indians by missionaries in the 19th century, and
adapted for Inuktitut.

The following figure illustrates the Inuktitut syllabary. The extra characters with the dots
represent long vowels; in the roman transliteration, the vowel is doubled. Thus the word
for mother in Inuktitut syllabics, ᣱامة, would transliterate in roman orthography as
“Anaana.”
This system was felt to represent the unique sounds and structure of the language better than the roman alphabet used for English. It was extensively used by the Anglican and Catholic churches, and was enthusiastically adopted by Eastern and Central Arctic Inuit, who taught their children with the aid of translated Bibles and prayer books. Printing, however, was difficult; much syllabic material was hand-lettered for reproduction until the development of Inuktitut keyboards for typewriters and computers in the late 1970s and early 1980s (Harper 1983). There has therefore been relatively little printed material prepared in syllabic Inuktitut until recent decades.

Furthermore, Inuktitut writing systems were developed initially as aides-mémoire for non-Inuit learning the language or administering government programs. Thus for years there has also been an ongoing debate on the merit of syllabics versus roman orthography for teaching Inuktitut in school and promoting its use worldwide. Many linguists felt the language would be better served if all Inuit used one form of orthography, leading to the development of a parallel system of Canadian Inuktitut roman orthography from the
1950s to the 1970s, which was promoted by the Canadian government and is still occasionally in use. As a result some published Inuktitut is in syllabics, some in roman orthography; Inuinnaqtun, the western dialect of Inuktitut, has always used roman orthography.

However, as noted by Harper (1983 p. 48), by the 1970s syllabics had taken on a cultural significance that has made them difficult to replace, and the respect in which Inuit hold their elders makes them reluctant to change from a system with which the elders are very comfortable. On the other hand, the younger generation is not as conversant with syllabics, because they are not used much beyond the early primary grades in school; many speak Inuktitut quite fluently but do their reading and writing in English (Dorais 2006 p.7-8). Nor is there a vibrant publishing history and culture in Inuktitut syllabics as there is in Greenlandic.

As a final challenge, Inuktitut is not a “standardized” language (Harper 1986 p.73); there are many dialects and variants, particularly between north and south Qikiqtaaluq (Baffin) and between the Qikiqtaaluq and the Kivalliq (Keewatin) regions. Although the Nunavut Department of Culture, Language, Elders and Youth (CLEY) does work in developing standard vocabularies and glossaries for various areas of government work, e.g. finance, statistics (Department of CLEY 2004a; 2004b), and the interpreter/translator program at Nunavut Arctic College has done the same in certain professional areas, e.g. school science (Allen 1997) (other glossaries include dentistry, social work, law), none of these are comprehensive dictionaries and there is not as yet one central language authority. The Asuilaak Inuktitut Living Dictionary project supported by CLEY (2008) is one example of ongoing documentation of dialectal and orthographic variants that only reinforces how unstandardised the language is as a whole.

Providing library service to Inuit in their own language is therefore fraught with difficulties. There is a lack of published materials; materials published in Inuit languages vary in format and script; younger generations, schooled primarily in English, may speak Inuktitut fluently but be used to reading, writing, and conducting research in English. There is no long-standing library culture in the Inuit community, as Inuktitut has only been written down for little more than a century, and those who have become used to
3.1.3 Nunavut’s Library Consortium

Libraries arrived in Nunavut with government services and schools midway through the 20th century. The first library in Iqaluit (then Frobisher Bay) was established for the American air base located there during the second World War; some items from that library are still held in the Iqaluit public library’s historical collection. Most Inuit encountered library services either within a local school library, or through the territorial public library service provided by the NWT government. By the 1980s, eleven communities in the area that would become Nunavut had public libraries, and that number has remained consistent (Nunavut Public Library Services 2006). In the early 1990s, community public libraries had access to an electronic union catalogue in CD-ROM format. However, the technology of that day could not accommodate syllabic script, so the public library catalogue was in English and French only. School libraries came and went with each school’s administration of the day, depending on whether its principal chose to fund the staffing of a library; little has changed in that regard. Although a few communities have joint school-public library operations, these are in the minority, so there is no collective school library catalogue or system currently in place.

The Legislative Library of Nunavut was established in 1998, in preparation for the division of the Territories in 1999. The first Legislative Librarian was charged from the outset with finding an automated library system that would accommodate Inuktitut syllabics, and thereby support the government’s objective to provide services in all official languages. It took three years and considerable research to select a Unicode-compliant true MARC system, at a time when advances were just starting to be made in incorporating Unicode into computer operating systems within the government and in the library cataloguing world generally.

By the time this search was complete, several other major library groups in Nunavut decided to buy into the same system, for economies of scale, and the potential for shared cataloguing and a single web search interface. The GN contracted with VTLS for the Virtua Integrated Library System in 2001, and by 2002 the consortium’s partners
were established: the Legislative Library of Nunavut (LLN), Nunavut Arctic College library services (NAC), the Nunavut Court of Justice Law Library (NCJLL), and Nunavut Public Library Services (NPLS). Each maintains its own database within the same platform, and shares a web-based public access catalogue. Together, these library systems form a loose consortium now identified as “Nunavut Libraries Online,” with a single OPAC access page on the web that allows mutual searching of the separate databases (Nunavut Libraries Online 2008).

Each partner had its own challenges in establishing its new catalogue: the Court and Legislative libraries were starting with no electronic records; NAC had to migrate from a non-MARC system dating from the ‘90s; and NPLS had a large true-MARC database with extensive Inuktitut holdings, but retrievable only as English records. Another problem was the lack of trained library staff with any knowledge of Inuktitut and ability to input records in syllabics. Little copy cataloguing is available in this language, other than a few romanised records from AMICUS. Therefore, for several years, cataloguing continued chiefly in English, with some French where applicable.

It is easier now, thanks to Unicode, to input material in syllabics (Shadbolt 2005); the GN has worked on developing and providing Unicode Inuktitut fonts for computer systems, and these can now be accommodated in MS Windows™ and the catalogue environment, which was not true even five years ago. Consequently, in the fall of 2006, staff at NAC and LLN worked out the technicalities of inputting syllabics in the Virtua system, and actual syllabic cataloguing was begun (PATTERSON, R.L., personal communication. 18 October 2005). In theory, therefore, the joint catalogue can now be searched in Inuktitut syllabics from client terminals equipped with the appropriate fonts or on the online OPAC, using either keyword search or the browse searches for authors and titles.

Policy decisions therefore had to be made in implementing this new addition to the catalogue: where and how to incorporate Inuktitut syllabics and other forms of the Inuit languages into library catalogue records. These concerns will form the bulk of this case study.
3.2 Case Study Data Collection: Successes and Challenges

The case study therefore examined the use in Nunavut of an ILS marketed internationally as capable of handling multilingual and multiscript cataloguing requirements and evaluated the successes and needs for improvement in the implementation of such a system.

The Nunavut Libraries Online consortium, using the Virtua™ ILS, comprises four separate databases for four library entities: LLN, NAC, NCJLL, and NPLS. As they serve a territorial population of just under 30,000, these systems are small, in global terms, and thus relatively easily examined. Database sizes range from ca 46,000 bibliographic records for NPLS, the oldest and largest database, to a few hundred for NCJLL, which has just started populating its catalogue.

The case study used a variety of data collection techniques to provide as rounded and concrete a picture of cataloguing policies and procedures as possible. As outlined in detail in Appendix C, data were collected on language policy in each system, implementation of descriptive cataloguing in various languages by each system, and user accessibility for various languages.

3.2.1 Analysis of documentation

Documentation pertaining to the library systems involved was reviewed and analysed, including ILS specifications and any written cataloguing policies and procedures available. Written cataloguing policies for multiple languages were made available from LLN and NAC (Legislative Library of Nunavut 2008; Nunavut Arctic College Library 2007). NCJLL indicated that they had borrowed and were using the standards of the LLN as their current cataloguing policies. No written documentation could be obtained from NPLS, as their headquarters staff have been unable to find any such.

3.2.2 Interviews with Library Management and Cataloguing Staff

Library staff were generous with their time and interest in participating in interviews for this research project. These took the form of semi-structured interviews, with questions
asked by the interviewer but the interviewees also encouraged to expand on any points of interest. Most interviews took about an hour to complete. Interview content included both policy and procedural issues (see Appendix D for a list of interview questions). The staff of those libraries actively involved in syllabic cataloguing (LLN, NAC) tended to focus on some of the practical difficulties of incorporating syllabics into the standard catalogue formats; the staff of the libraries who have not yet moved in that direction (NCJLL, NPLS) were more inclined to focus on theoretical issues of the difficulties of the script and the lack of materials in Inuit languages.

Because the number of interviewees was small (four management staff, two cataloguing technicians, and one acting manager also doing cataloguing), their responses have been interpreted in a narrative context, rather than through statistical analysis. The number of professionally trained librarians and library technicians in Nunavut can literally be counted on two hands; anybody else involved in library service is usually a local person with interest in libraries and literacy issues, and much of the training is provided on the job, so it is impossible to generate numbers with any kind of statistical significance. For simplicity, if a particular interviewee made a specific unique point in the course of the interviews that is mentioned in the study, this has been referenced in the format of library role, interview, e.g. “Legislative Librarian interview.”

It should also be noted that one of the “interviewees” was the researcher herself, as the principal cataloguer for the LLN, going through the interview questions and recording personal responses to compare to those of the other consortium members, before the other interviews were undertaken.

3.2.3 Record Analysis

Open access was provided to the contents of all four library databases. Day-to-day cataloguing work for the LLN facilitated identification of many specific records illustrating various descriptive cataloguing points and permitted running system reports identifying such data as database size, percentages of records in various languages, etc. Independent cataloguing access was also granted by NPLS, permitting examination of records from within their system client as well. NAC staff supplied a copy of a spreadsheet they keep listing their catalogue records containing Inuktitut syllabics, and
copies of printouts of these records. Records from NAC and NCJLL were examined through the client guest login for these databases and the Nunavut Libraries Online OPAC.

Again, the numbers of records involved are relatively small, in the hundreds rather than thousands. Materials published in Inuktitut are limited, all syllabic work has to be original cataloguing as consortium members have not found anyone else working in syllabics, and this work has been carried on only for a couple of years. On the other hand, the dataset can be regarded as reasonably exhaustive for its type. Space does not permit detailed explication of every type of record encountered, but sample analyses of the various language combinations in records are provided in Appendix E.

3.2.4 OPAC use analysis

Some typical search scenarios from each member database were conducted and examined, illustrating a wide variety of language situations, to determine how effective the cataloguing practices adopted are for patrons seeking particular types of information (e.g. author, title, keyword and subject searches). Illustrations of these searches are included where appropriate to show the results of certain cataloguing policy choices.

A questionnaire was developed on OPAC use for library patrons. Its administration, however, cannot be regarded as highly successful, as a very limited response rate was returned. The small population of Nunavut as a whole (ca 30,000) makes statistical sampling dubious at the best of times, and despite publicity through the Nunavut Library Association's newsletter, personal contact, and in particular cooperation from and promotion by the LLN and NAC staff, only a dozen responses were returned. As the statistical validity of this material is questionable, Appendix F includes the questionnaire as administered and a summary of results discussing some interesting trends demonstrated in those responses received, for whatever light they might shed on the problems of successful multilingual OPAC service.
3.2.5 Personal narrative

A final element of the data collection for this project is the personal experience of the researcher over the past two decades in a wide variety of Nunavut library environments. This started in 1987, with work behind the public service desk of Iqaluit Centennial Library; two years as part-time school librarian in Pangnirtung; five years as the Baffin Region Library Technician under NWT Library Services, before division of the territories, and five years in various headquarters technical services and management roles for NPLS. Since 2004, the researcher has been working actively on developing syllabic cataloguing as a contract cataloguer for the Legislative Library, as well as providing organisational advice, cataloguing services and library training for various government departments, libraries and library and archives societies.

It should be noted, then, that wherever an assertion is made in the case study analysis regarding library service conditions in Nunavut without a supporting specific reference, the researcher is referencing either the collective views of the various interviewees (rather than one in particular) or her own personal experience in this environment. Little documentation of library service practice exists for Nunavut, and it is hoped that this research will contribute in some measure to recording and preserving the experience of those who have actively worked to provide better library service to Nunavummiut.

4. DEVELOPING A MULTILINGUAL, MULTISCRIPET CATALOGUE: CHANGING DESCRIPTIVE CATALOGUING IN NUNAVUT

4.1 Recent Cataloguing Policy Development in Nunavut

Policies for cataloguing Inuktitut and multilingual items in the Nunavut consortium have been spearheaded by LLN. They were the first to develop written cataloguing policies for the standards to be applied within their database, both for standard English and multilingual records, which were initially drafted in 2002 but have been regularly amended and updated as changes have been implemented (Legislative Library of Nunavut 2008). Earliest versions of these policies indicate, for example, that Inuktitut items will be catalogued in English, with translated titles, in such a way as to facilitate
later input of Inuktitut syllabics; the current policy and procedures explain how to input syllabics and represent multiple languages within item bibliographic records.

These same policies have been borrowed and adapted by NAC, with amendments made to reflect the different patron clientele of the college (Nunavut Arctic College Library 2007 p.1). Likewise, the NCJLL has just started populating its catalogue database, and although the Acting Law Librarian doing the cataloguing work does not work in Inuktitut, she has also borrowed and is following the LLN policies and procedures insofar as English and French are concerned, and copy catalogues from both the LLN and the NAC databases wherever possible for items in syllabics. All three of these library systems have staff who have been working on these issues for several years, both at the librarian and library technician level.

The only library system of the consortium that does not have parallel policies is NPLS. They joined the consortium starting with a fully populated true-MARC database of approximately 40,000 records, with fully romanised or translated records for all their Inuktitut items (less than 1% of the collection). Since 2004, they have had no trained cataloguing or technical services staff as part of their headquarters operation, and most of their catalogue records are purchased through a jobber that provides excellent quality records in English and in French but has no capacity whatsoever to catalogue in Inuktitut (Library Services Centre 2008).

NPLS as a whole has been in a fragile state since its establishment in 1999, with constant turnover and long vacancies in its professional positions (currently a Manager, an Electronic Services Librarian, and a Community Services Librarian); thus everyone working at their headquarters office who has formal library training has been in his or her respective position for less than a year, and the whole system is in many respects rebuilding itself from the ground up. They manage eleven small community public libraries, scattered across all corners of the huge territory (Nunavut Public Library Services 2006), and their priority is to keep these libraries staffed, open and functional; thus the state of their catalogue is currently low on their priority list (NPLS Manager interview). They are working with pre-Unicode catalogue content for the most part, and thus face a fairly large retrospective cataloguing project if they were to convert their romanised and translated records into Inuktitut syllabics. There is of course also the
problem of new material being added currently: they are starting to consider whether and how to incorporate syllabics into new records for currently published items. The Community Services Librarian may start addressing this issue in the near future after completing a round of community library visits (MACISAAC, S., personal communication. 10 March 2008), and will probably be consulting other members of the consortium in developing any relevant policies.

In the following discussion of cataloguing policy issues, therefore, the primary source of information is LLN's multilingual cataloguing policy (LLN 2008), and it can be assumed that a described policy applies to at least LLN, NAC, and NCJLL with any substantive variations by the other consortium partners duly noted. NPLS headquarters cannot find any written cataloguing policy in their office documentation (NPLS Manager interview), so they are most frequently the exception to the policies outlined below. The various points of policy and their implementation in practice will be illustrated by screen shots of individual records examined in the course of data collection.

An important factor in the development of cataloguing policies in this consortium is the close working relationship amongst all the various librarians and library technicians. If one discovers a technique or a technical cataloguing detail missed by another, this is passed on and usually accepted and incorporated into new practice. For example, NAC determined how to input the syllabic character set into Virtua (a combination of font installation, keyboard configuration, etc.); this was immediately adopted by the LLN (PATTERSON, R.-L., personal communication. 18 October 2005) When LLN revised its existing cataloguing policy to reflect the input of syllabics, this revision was given to NAC, used by them ad hoc, and then formally adopted and revised to suit the NAC cataloguing environment. In reading this revised policy, the LLN technician realised that NAC staff had found a "multiple language" designator to use in the MARC 008 field of records, which solved the issue of what language to put in this field for multilingual items, a problem that had surfaced when trying to run language-specific reports from the database that used the 008 field as the determinant for any language sort. Thus the process of incorporating multiple languages, especially the Inuit languages, into these libraries' catalogues is, despite the very different natures of their collections and clienteles, an ongoing collaborative and consensual cycle, as various partners uncover and solve different problems and issues.
It should also be stressed that the following discussion focuses on the multilingual aspects of cataloguing policy. All of these library systems work with the same nationally and internationally accepted cataloguing standards:

- MARC 21 coding,
- AACR2R cataloguing rules,
- DDC or LC classifications (with a special modification of LC for the Law Library), and
- LCSH, Canadia or RVM subject headings.

Thus the multilingual policies developed are an interpretation of how to apply these standards in a multilingual environment, especially for the Inuit languages, which have no accepted standards to date. Essentially, this consortium is in the process of establishing the first formal standards for Inuktitut syllabic cataloguing.

4.2 Language Representation Within Catalogue Records

When dealing with multiple languages in a library’s collection, the fundamental decision affecting all other cataloguing policies is how to represent various languages in the library’s catalogue records. Choices in this area have evolved as technology has made it easier to accommodate non-roman language scripts. However, the choices made can be affected by such factors as the following:

- whether multiple language access is a new initiative with a new system or there is an existing catalogue with extensive holdings in other languages following an older policy,
- whether the cataloguing agency has staff competent in various possible languages of access, and
- whether the agency has the resources to implement new technology.

This section therefore examines a number of language representation options that have been chosen historically by library systems, as evidenced in the literature, and how they have been adopted by the various libraries in the Nunavut library consortium.
4.2.1 Translation of records

The first, and oldest, option, is to use roman alphabet only. Items or information in other languages are translated into the agency’s preferred language. The preferred cataloguing language is also used for subject identification and access. The chief requirement of this option is the ability to translate the other language items into the preferred cataloguing language, either by staff or through a translation agency.

The advantages to this option are that it does not require any special scripts or fonts for the cataloguing system, and can make use of older or generic systems with ASCII or UTF-8 capacity only. Anyone using the catalogue in the preferred language will be able to read and understand the record.

The disadvantages are that translation service has to be available both in terms of service and budget, \textit{i.e.} hiring staff with language capacity, or budget to contract translation services and available translation contractors with time to do the work. This is not always the case, especially as library budgets become increasingly constrained. Any unilingual speaker of the language of the item will not be able to find or understand the record for that item, which can be a problem in a locality where a plurality of languages is spoken. Likewise, a user of a different language script will not be able to find the item. Additionally, the item may be difficult to find or identify on the shelves unless the translated title is printed somewhere on the item (e.g. on a book pocket or label), as the information on the item itself and the information in the record will not be identical. Lastly, and perhaps most importantly, the record itself does not in fact reflect the content of the actual resource.

This option has been the principal practice of NPLS to date, as a policy inherited from NWT Library Services (NWTLs) upon division of the territories. All of the cataloguing is done in English. The title of the item is translated, the authors’ names are transliterated into roman orthography, and the description and subject headings are in English. The only indication that the following example is for a text in syllabics is the note:
This policy was developed during a period when NPLS’s ILS would not accommodate syllabic characters, and the NWT parent system did have access to Inuktitut translators. It has led to backlogs in Inuktitut cataloguing in both systems, when no one has been available to translate Inuktitut information into English for NWTLS or NPLS cataloguers.

4.2.2 Transliteration
A second option is to use roman alphabet only, but to transcribe other language data from the item, and to transliterate other languages into roman orthography as required, for titles, statements of responsibility etc. The agency describes the item and provides subject analysis and access in its preferred cataloguing language.

This has been a common worldwide practice, with large catalogues established on this basis before the advent of Unicode, most notably at LC. It facilitates exchange of records with other agencies that transliterate the same language. In Canada, LAC transliterates its Inuktitut records, and these can be copied at no charge by Canadian libraries.
NWTLs still does this for its aboriginal language records as well (DAWSON, B., personal communication. 28 January 2008). There are well-established rules for principles of romanisation to be used in an English-language catalogue, for example AACR2R 22.3C for romanisation of names. LAC’s Intellectual Management Office has an Inventory of Romanization Tools posted on its website to ensure consistent standards within their AMICUS catalogue (LAC 2006). An advantage is that items do not require actual translation, as long as cataloguers can identify the necessary parts of the item information to transliterate into the record.

There are a number of difficulties with this option, however. A consistent standard of transliteration has to be determined and adopted, particularly if creating an electronic catalogue from various sources, as for example that of the Paris BULAC consortium, where any item originating with a description in a non-roman script always has a romanised description. They use international romanisation standards for these, and provide a list of them (Bibliothèque universitaire de langues et civilisations 2005), but warn that it is possible older records may exist in the system using rules that are now considered outdated (Bibliothèque universitaire de langues et civilisations 2008).

This is a significant problem for Inuktitut, where romanisation standards are still under debate and not consistently applied. More importantly, the resulting record is difficult to understand for both users of the preferred cataloguing language, who may not understand the meaning of the transliteration, and for users of the actual language, who are used to reading in a different script. In addition, the language used for description is usually the preferred language of the agency, which gives that language primacy over the language of the actual item. This can be significant where politics enter into the provision of public service.

This option has also been used by NPLS, again as an inherited policy with its attendant records from the NWT. NWTLs revised its policy for Inuktitut from transliteration to translation when it found transliterated records hard to understand and work with, but now that there is little syllabic Inuktitut in their collection since division of the territories, NWTLs have returned to romanisation with accepted diacritics for other aboriginal languages that essentially use roman script with some special characters, such as Chipewyan or Dogrib (DAWSON, B., personal communication. 28 January 2008).
In the following record, the title of the item and the authors’ and illustrators’ names have been transliterated; the remainder of the cataloguing is in English, and there is no indication that this item is published in syllabics:

![Figure 4: NPLS Record with Transliterated Title](image)

4.2.3 *Mixed entry with a preferred language for description*

A third option is to transcribe information from the item in its own language and script for titles and statements of responsibility, and for selected other entries (e.g. author). The agency would use its preferred cataloguing language for description and subject analysis and access. The advantage to this approach is that it will at least provide representative author and title information for languages in other scripts. It requires only an ability to transcribe script correctly from the item, not necessarily to understand the language or script, thus can be somewhat easier for cataloguers who might not be fluent in the language. It does not require extensive knowledge of other languages to describe the item, simply an ability to keyboard.
However, this does mean that anyone using the data must be able to accommodate the script in their catalogue system or on their workstation. Additionally, anyone searching in the item’s language will not have subject access or access to notes or other supplementary information. Finally, anyone searching with the catalogue’s main language will not have access in that language unless the cataloguing agency also provides a translated title.

This approach is starting to be implemented by libraries around the world that have multilingual collections, but often those where the items may be in many languages because of the nature of the collection but the catalogue has essentially only one user language. This is evidenced in a number of online catalogues, e.g. that of the Österreichische Nationalbibliothek, which contains records of books in many languages such as English but with bibliographic description and subject headings in German (Österreichische Nationalbibliothek 2008). Likewise the Czech national library provides an English interface for searching its catalogue, but the records are in the language of the item with physical descriptions in Czech (National Library of the Czech Republic 2008).

Many records in the Nunavut catalogues for NAC and LLN appear this way as the first steps were being taken to incorporate Inuktitut, before an Inuktitut bibliographic descriptive vocabulary was developed. In the eyes of the College and Legislative librarians, these records will require retrospective correction to incorporate full Inuktitut description.

One early record including syllabics among other languages appears as follows:
Figure 5: Early LLN Record in Inuktitut Syllabics, Romanised Inuktitut, and English

The following example, last updated by LLN in April 2006, for an item entirely in Inuktitut, has the author, title, and publication information in syllabics, as well as some locally established Inuktitut subject headings (for “Inuit—Nunavut” and “Inuit qaujimajatunqangit” or traditional knowledge), but is lacking a physical description in syllabics and a translation for the note.
4.2.4 Representation in language and script of item

A fourth option is to represent and describe each language entirely in its own language and script, as contained in the item. This approach carries a number of advantages. A person who uses the language of the item will have full search capacity of all fields within the catalogue for whatever items are catalogued in that language. Such a person will also have full understanding of the record content. The record will be a true representation of the item in hand. If someone does not use the language, they will know this item is not of use to them. Users can see if there is more than one language in an item, for bilingual or multilingual publications.

This approach does require a developed bibliographic descriptive language for the language in question, which could be considered positive (as in extension of internationally accepted bibliographic terminology to new languages) or negative (as in requiring extra effort and expense). Likewise, it requires a catalogue system that can accommodate the script, which may or may not entail the purchase of a new system,
which brings the advantages of new technology and functionality but also the costs of migration, implementation and occasionally retrospective cataloguing.

On the negative side, persons who do not use the language of the item will be unable to read or understand the record. This disadvantage could be considered to be outweighed by the ability of a language user to find, access and actually use the item. Additionally, the cataloguing agency may require additional staff with language capacity to catalogue in that language, incurring extra costs, time etc. Bilingual or multilingual records also can be bulky with all of the information replicated in all the languages involved in the item. Lastly, this approach may hinder sharing of records with other systems that do not accommodate non-roman scripts, which is currently the case of NAC and LLN in trying to report their holding to AMICUS, Canada’s national catalogue.

LLN and NAC are attempting to move to this model. They are able to transcribe titles and statements of responsibility in syllabics, and describe items in Inuktitut with the aid of an Inuktitut bibliographic terminology list. They can also incorporate some notes (e.g. relating to frequency of publication, language, source of information, alternate formats: summaries or contents notes) in Inuktitut. Currently only names and geographic place names are used for subject entries, as a controlled thesaurus in either Inuit language is unavailable. Unusual notes may remain untranslated as neither library has a fluent Inuktitut speaker on its cataloguing staff. Inuktitut speakers can search the catalogue fully by author, title, and keyword, and subject to a very limited extent. Multilingual items are represented as is in a single record.

For example, in the following record from Nunavut Arctic College for an Inuktitut item (created originally in 2005 and updated as recently as March 2008), the bibliographic description is fully in Inuktitut:
Figure 7: NAC Inuktitut Record

Similarly, the following record from LLN is entirely in Inuktitut except for the uniform title (indicating it is a translation) and one subject heading; the note that the title is available in English is also given in Inuktitut, with the English title:
Figure 8: LLN Inuktitut Record with Uniform Title Tracing in English

The parallel record from the Legislative Library for the English edition of this title cross-references the Inuktitut translation and appears as follows:
Figure 9: LLN English Record with Inuktitut Cross-reference

The following bilingual English-French record from the NCJLL database has parallel titles, with the French title traced, publication information in English and French, and subject headings in both languages:
A bilingual English-Inuktitut record as currently catalogued by the college would appear as follows:

**Figure 10: NCJLL Bilingual English-French Record**

**Figure 11: NAC Bilingual English-Inuktitut record**
The following record describes an item in all four of Nunavut’s official languages, including physical description in all four and providing all four language versions of the name of the government department that produced the described report. Notes in Inuinnaqtun have not yet been translated:

4.2.5 Separate records for separate languages of multilingual items

The description of items that are multilingual in themselves, containing two or more languages, presents some special challenges. One option is to create separate records
in each language for the item, however one chooses to represent each language, through transcription or transliteration/translation. This has the advantage that users interested in only one of the languages contained in the item do not have to pay attention to any other language content. Also, neither language is given preference or primacy as the record excludes the other language, which may be a bonus in political terms where both language carry the same official status.

However, such records are not a true representation of the content of the item with one of the languages missing. Additionally, agencies wishing to copy catalogue records may have to download two or more and combine them, if their policies are to have records representing items as is.

This approach is currently the policy of LAC in its national bibliography, applied to English and French records. It reflects the fact that Canada is officially a bilingual country, and there is great sensitivity to giving preference to one or the other language in any public service. This means, however, for a bilingual English-French item, that two records need to be downloaded to obtain full bibliographic information, subject headings, etc. for copy cataloguing. It simplifies access for people who are monolingual but complicates it for those who are bilingual or multilingual. None of the Nunavut libraries currently follows this practice.

4.2.6 Translation of all records into all user languages

A last possible option is to represent and describe each language entirely in its own language and script, and also translate this information into the other languages used in the library catalogue. Then, anyone using the catalogue in any of its languages should be able to find all items of interest, regardless of language. However, this would entail very high cost in terms of cataloguing time and effort and requires translation service to be available both in terms of service and budget. Automatic translation software has not yet reached the level of sophistication required to cope with entire library records without significant human intervention (Miller 2006). Certainly nobody in Nunavut to date has had the resources to attempt this level of service.
Another version of this option might be to provide at least interfaces and subject access in all the languages of the catalogue; the latter would entail the implementation of a multilingual thesaurus within the catalogue. Some experimentation is going on with regard to automatic multilingual assignment of thesaurus terms based on item classification (Frâncu 2003), but such tools are not yet widely available. LAC applies such a policy inconsistently with regard to English and French subject headings—some records contain both languages and some do not—but they do have established cross-references between their LC/Canadiana subject headings and those of RVM. The European Library is probably the world leader in research into multilingual subject access platforms; it is now conducting experimental work in this area that is setting a useful example for consortia or national libraries that need multilingual access for users (European Library 2008a).

4.3 Initiatives in Bibliographic Language Development for Inuit Languages

Since some Nunavut consortium members decided to incorporate Inuit languages into records, a number of cataloguing problems have arisen in creating syllabic records and are essentially being resolved as members of the consortium develop more proficiency in this area. All decisions have been made with a view to promoting usability of records in each relevant language. Policies are continually being revised and adapted as various problems are solved or new solutions suggested. Initial syllabification efforts simply transcribed titles and statements of responsibility from items, as being within the language transcription ability of the available cataloguers. However, it soon became clear that a fuller language representation in the records would be more appropriate, and indeed necessary if unilingual Inuktut speakers were ever to be able to use the catalogue.

After resolving the technical issues surrounding the input of syllabic characters, the second greatest obstacle to cataloguing Inuit language items was the lack of a bibliographic descriptive language. At present, there is no trained librarian or library technician in Nunavut whose first language is Inuktut or Inuinnnaqtun. One of the unexpected benefits of this fact, however, is that it meant there were almost no
precedents for cataloguing or describing items in either language in any particular dialect, so the group was starting with a clean slate to determine terminology.

The Legislative Librarian therefore took the lead in contacting the translation section of CLEY and setting up a workshop to develop some appropriate terminology (Legislative Librarian interview). There are a number of precedents in this area in Nunavut. Inuktitut has had to adapt to new concepts and technical terminology that formed no part of the traditional oral language, so many groups have worked out official terminology lists for the use of translators and writers, as noted earlier. There is ongoing debate amongst Inuktitut speakers whether loan words should be adapted from English and other languages for technical terminology, but on the whole, the Inuit preference seems to be to create a descriptive Inuktitut equivalent to keep as much of the traditional language and its structures alive as possible. Thus:

Unlike languages where foreign words are just borrowed (as they are, for example, by the hundreds and thousands in Japanese), Inuktitut prefers to create words that describe the item in question. So the Inuktitut word for <em>helicopter</em>, for example — which in English is borrowed from Greek — is a word that literally means <i>that which goes upward in the air above itself</i>. (Pullen, Cain and Howse 2007 p.49)

The library terminology workshop hosted by CLEY therefore involved representatives from all four consortium members, providing the library and bibliographic terminology expertise; from the CLEY translation group, providing translation and language expertise; and from a group of Inuit elders that the CLEY translators call on to provide a sense of history, precedence, and <i>Inuit qaujimajatunqangit</i> (traditional knowledge). Before the workshop took place, consortium members developed a list of bibliographic terms most commonly used in describing material, from “page” and “illustrated” to “electronic resource” and “Includes bibliographic references and Internet addresses.” This list was prepared for presentation by the translators, and then discussed and translated by the collected participants at the workshop, held 24 April 2006.

It became evident in this workshop that some terms were already fairly familiar, and could be resolved after minor dialectal haggling and discussion, for example, terms for “pages,” “index,” “maps” or “bibliography.” Others elicited considerable debate, for example, in the different concepts behind material designations (sound recording, videorecording, electronic resource) versus format description (audiocassette, DVD, CD-
ROM, videocassette, etc.). However, by the end of the workshop day, the group had hammered out Inuktitut translations for all, and Inuinnaqtun terms for some, of the terminology on the list. This list was then edited and distributed by CLEY to all the consortium members; it can be found in full in Appendix G (Department of CLEY 2006).

This list, in turn, has become the key tool for the cataloguers to create bibliographic descriptions in Inuktitut, and because the list was developed before any Inuktitut bibliographic description was attempted, all of the subsequently created records use a consistent, even formulaic approach to such description. The list makes it possible for a cataloguer with only minimal Inuktitut language skills to create a high-quality record formulated using AACR2R rules, plugging Inuktitut vocabulary into the various fields required, as in the following example:

![Figure 13: Inuktitut Descriptive Vocabulary Used for a Videorecording](image)

This record describes a VHS video and contains a GMD, a physical description of format, an alternate edition note, and a creation/production note, all in Inuktitut.
Of course, as cataloguing has progressed, more terms have turned up that will require translation, so library staff are collecting such words against the day when a supplementary workshop can be held to expand the wordlist.

### 4.4 Policies for record content

With the production of the vocabulary list, LLN and NAC revised their policies to the standard now maintained by LLN, NAC and NCJLL.

LLN was the first to define several fundamental multilingual cataloguing policies, which were, first, that an item should be catalogued in the language in which it appears. Second, for items containing more than one language, one record using parallel titles and containing all the bibliographic information for each language would be created rather than separate records for each language. Finally, recognising the lack of established Inuit language thesauri, special procedures would be instituted for tracking Inuktitut records for later updating (LLN 2008 p.1). Excerpts from the LLN cataloguing policy, which has also served NAC and NCJLL, can be found in Appendix H.

NAC sets their language parameters in the introduction to their multilingual cataloguing policy:

> The guidelines outlined below primarily apply to materials in English, Inuktitut, Inuinnaqtun and combinations thereof. The Nunavut Arctic College (NAC) Library does not actively collect materials in French; however, because relevant materials occasionally appear partially or entirely in French, the following procedures may extend to cataloguing such materials as well. (Nunavut Arctic College 2007 p.1)

This statement is followed by essentially the same principles as those of LLN, adding notably:

> For materials issued simultaneously and separately in multiple languages, a record will be created for each version of the item held by the library, and cross-referenced (Nunavut Arctic College 2007 p.1).

These principles inform all the choices made in terms of MARC fields and coding for LLN and NAC records, and the same are applied by NCJLL in the creation of English and French records.
The ideal, therefore, is to have each bibliographic record appear in the language or languages of the item, reflecting as closely as possible the content of the item itself. This ideal cannot always be achieved. There are times, for example, when a library descriptor or term, or perhaps a descriptive note, has not been translated into the Inuit languages yet; in such instances English is used as the default language of description as being the most active language of use in all of the library systems. The Inuinnaqtun terminology lags well behind the Inuktitut in terms of translation as well, particularly for bibliographic description and notes. Of greatest impact so far, however, is the lack of Inuit language subject thesauri.

The chief advantage to this approach is that it creates a system of one bibliographic record for each item, which should in theory be equally accessible to a user of any language contained in the item without having to refer to other records. The chief disadvantage is that those records which represent a truly multilingual item in three or four languages can become long and unwieldy, with duplicated fields for subject headings and notes, extra tracings for parallel titles, etc. However, as these items are in the minority, the overall usefulness and accurate representation of this approach would appear to outweigh the occasional unwieldiness of a particularly long-titled government document in all four official languages. Also, some of this unwieldiness is not actually visible to the catalogue user, as added title tracings and variants do not appear in the main catalogue record view, only in the MARC coding.

Some examples contrasting the patron’s OPAC view with the MARC coding for very complex records can be found in Appendix E.

The written policies and procedures of both LLN and NAC detail precisely those fields and associated MARC tags that are most likely to be required in a multilingual record. These have been organized for procedural purposes in MARC tag order, and can include any of the following:

- 008 Control Fields, positions 35-37, Language
- 041 Language Code
- 090 Call number (language cutters)
- 130/240 Uniform title (for translations)
- 245 Title and statement of responsibility (use of parallel titles)
- 246 Tracing of parallel titles, variant titles
- 500 Notes (regarding other language editions)
546 Language of item notes
6XX Fields—Subject headings

These tags would be found in records for any language, and wherever possible, appropriate thesauri are used to create subject headings, such as RVM for French records (LLN 2008; NAC 2007). This list does not, of course, preclude the use of any other record field that might be appropriate, simply indicates those which should definitely be considered in creating a record in other languages than English.

However, due to the lack of Inuit language subject thesauri, completely Inuktitut records are not yet possible. The standards currently being applied in creating a syllabic record are as follows:

From the item in hand, input all possible fields where syllabics are required. Normally, at least, this would include:

- 100, 110, 111 author (if Inuktitut-only record)
- 245 title, 246 parallel title or alternate title tracings
- 260 publication information (place, publisher)
- 300 physical description (use terminology list)
- 500 Where terminology is established, notes or descriptions can also be added (use terminology list)
- 700, 710, 711 any added author/s (including organizations and government departments; or Inuktitut versions of names, in multilingual records)

(LLN 2008 p. 5)

It should be noted that both library systems have found it extremely important to trace variants in titles due to dialectal differences in translation, especially in serial titles. “Annual report” in English could have half-a-dozen versions in Inuktitut or Inuinnnaqtun, depending on the translator. LLN traces all the variants through a 246 tag with 3 and 3 as indicators (i.e. no visible note in the catalogue, “other title”); they do not show up in the OPAC main record visible to users, but are searchable and will bring up the record if entered by a patron in a title search. See Appendix E for an example of the MARC coding of a serial title with variant tracings.

With regard to subject headings, both LLN and NAC do create some headings in Inuktitut for certain kinds of headings, chiefly those relating to names and places, which can be established in Inuktitut with some degree of confidence. Thus MARC 600, 610, 611 and 651 subject headings are used in Inuktitut, and for these cross-references to the
English and French subject headings have been made where appropriate, e.g. for the names of persons, organisations, conferences or of Nunavut communities (which often have different Inuktitut and English names). In a very limited number of cases, local subject headings (MARC 690) have also been created for Inuktitut terms that have become common usage or government buzzwords. For example, *Inuit qaujimajatunqangit* is the Inuktitut term for local traditional knowledge; it is used in its romanised form as an English, French or Inuinnaqtun heading, and in syllabic form, ᐸᓄᐃᑦᖃᐅᔨᒪᔭᑐᖃᖏᑦ, as an Inuktitut subject heading.

Although NPLS does in fact observe many of these policies in principle, particularly where French records are concerned, its records cannot be considered to be truly representative of the Inuit language materials held in their system. Their Inuktitut titles are recorded in a mixture of translation and transliteration, with simply a note added saying “Text in Inuktitut syllabics”—one can gain no idea of what those syllabics actually are. Only French items have bibliographic description and subject headings in their own language; all other bibliographic description, notes, and subject headings are in English. Likewise bilingual items with material in English and Inuktitut are simply described in English.

### 4.5 Use of authority files for cross-language referencing

A recurring problem in multilingual and multiscript cataloguing is determining the authoritative forms of names that may appear both in roman and non-roman scripts. Long-standing examples might be the treatment of Russian, Chinese, or Arabic names by such cataloguing authorities as LC. Formerly, authority files for these names were established in a transliterated form to get around the issue of script, but there are also linguistic issues in the presentation of names, in the uses of prefixes, name order, etc. Many authors also write in one language or script but are then translated into others; so what form should their names take when cataloguing translations?

The recommendation of the new IFLA cataloguing principles is that authoritative forms of names should be established in the language and script in which they appear:

> When names have been expressed in several languages, preference should be given to a heading based on information found on manifestations of the
expression in the original language and script; but if the original language and script is one not normally used in the catalogue, the heading may be based on forms found on manifestations or in reference sources in one of the languages and scripts best suited to the users of the catalogue.

Access should be provided in the original language and script whenever possible, through either the authorized heading or a cross-reference. (IFLA 2007 p.[8])

This can be tricky in countries or jurisdictions where more than one language is in common usage: Switzerland and Canada are examples of officially bilingual or multilingual countries, and Nunavut, the Northwest Territories, and New Brunswick are examples of officially bilingual or multilingual provinces and territories within Canada. Then there is the European Union with 23 official languages—which in theory all share the same status within that organisation (EUROPA 2008). In such jurisdictions, authors or organisations may indeed have more than one official name, as linguistic equivalents are established for various groups of users. For example, the Government of Canada has one English and one French official name, which are regarded as being absolutely equal, for every government department. Likewise, the Government of Nunavut has established official forms in English, Inuktitut, French and Inuinnaqtun for all of its departments (Nunavut 2005).

It is no coincidence that Canada is regarded as a world leader in the development of multilingual authority files (Aliprand 2003). LAC has clearly stated policies on how and when equivalent language forms of names are to be established, chiefly based on whether the organisation itself has established forms of names in different languages (Library and Archives Canada 2007). Where this is the case, for example in an organisation with English and French names, two equal authority files are created, one for each language, with a cross-reference to the form of the name in the other language. For organisations, this helps to cover the translation of the words in the name; for persons, it may accommodate, for example, variations in spelling with or without diacritics, or variations in expression. For example, AMICUS has the following cross-referenced authorities: Francis, of Assisi, Saint, 1182-1226 (406 records) vs François, d'Assise, saint, 1182-1226 (184 records), representing the saint in each language and attached to records containing that language. This is also a fairly simple and workable approach to creating authority files that obviates complicated cross-language and cross-script references within individual authority files that might not be handled by all library
ILSs (Aliprand 2003). Where variations of spelling or expression within a particular language occur for a name, those references can be listed as “see from” or “use” references within that language’s authority file, maintaining the one authoritative form.

This can prove to be particularly helpful for cross-script authority records. Transliteration has many pitfalls—systems of transliterating Chinese being one long-standing example. A name expressed in a certain set of characters can be transliterated quite differently depending on the system being used. Thus those used to references to “Mao Tse Tung” must recognize that “Mao Zedong” is the same person; LC wrestled with this issue in its switch from the Wade Giles romanisation standard to the one now prevailing for Chinese, Pinyin (Wiggins 2000 pp. 9-10). This is a major issue in cataloguing in Nunavut: works either translated into Inuktitut from English, with non-Inuit names transliterated from roman orthography into syllabics, or translating Inuktitut into English, requiring the transliteration of Inuit names into roman, can create a large number of variants of names, depending on the customary pronunciation of the translator and a number of other factors.

For example the English name “Rigby” can be variously transliterated as ᓄᓇᕗᑦ (Ri-ga-vi) or ᓴᓇᕗᑦ (Ri-g-pi), since there is no Inuktitut sound for “b”. The closest one can get to a common English name such as “Stephen” is ᓴᑦᑦᓃᑦ (Si-ti-va-n). Biblical names are common for Inuit, but all have taken an Inuit twist in pronunciation—thus Elisapee or Elisapi (Elizabeth), Thomasie or Toomasi (Thomas), Lasalusi or Lasaloosie (Lazarus), Sakiasie (Zaccheus), Ooleepeeka or Ripika (Rebecca), depending on the transliterator’s conventions.

LLN has therefore established the practice of creating parallel language name authority files with cross-references to other language versions, as has to some extent NAC. This solution was reached independently of any other system’s policy outside of Nunavut, but when LLN staff discovered the LAC name authority policy mentioned above, the two were seen to be fairly congruent in principle. The chief differences are that the Nunavut authority files may involve the syllabic script, and that they may have to cross-reference up to four language versions of the same name, not just two. Once established, however, these authority files considerably speed up the cataloguing process for any future works.
involving the same authors or corporate identities. Rather than risking the possibility of mis-typing the Inuktitut syllabic version of a name, the cataloguer can simply import the name from the name authority file in the catalogue into any new record being created.

In addition, whatever the number of variants the cataloguer may encounter of the spelling or even translation of a particular name, one form can be used for all author tracing fields (MARC 100s, 600, 700), and the variant form can be added to the authority file for that language as a “see from” or “use” reference. The title and statement of responsibility field (MARC 245) will transcribe and thus record whatever is actually printed on the item, but the authority file will gather the variants all together so that all works pertaining to the same entity can be found in one location, and with one set of consistent cross-references.

Given the strongly dialectal and unstandardised nature of Inuktitut, this capacity can be critical to permit the tracing and collocation of the various works of authors and organisations, particularly the latter. The Government of Nunavut, for example, did not firmly establish official versions of its department names until 2004, which are the names now posted on the Internet (Nunavut 2005). The result is a nightmare for the cataloguer of government publications, as various Inuktitut translators might translate the same English department name differently in documents created between 1999 and 2003. This problem still exists for Government of Canada documents that have been translated into Inuit languages, since these are convenience translations for the purposes of bureaucratic administration, and federal government departments are still at the mercy of the quality of their translators for the translations of their names and programs (HEALEY, G., personal communication. 12 June 2006).

What, then, does one choose as the basis of the authority file? As the process of adding Inuktitut syllabic text to catalogue records was started in 2005, after the establishment of the “official” department names, it was decided by the Legislative Librarian to use these forms as the basis of the authority file, and then to trace any variants through “see from” references. Thus, when doing retrospective cataloguing of items published before that date, any early versions of department names encountered were transcribed as found in the title and statement of responsibility (MARC 245), but were traced (MARC110/710) using the current official GN department name. The department authority record would
then be amended with yet another “see from” reference (MARC authority 410) to reflect the variant recorded in the MARC 245 field of the bibliographic record.

Authority files become quadruply complicated when the government reorganises its departments and shuffles responsibilities, creating new entities. In these cases, “see also” (MARC authority 510) references are added to the authority files, with explanatory public notes where appropriate. However, in each case, the “see from” and “see also” references are confined to the cross references for that particular language; each separate language authority file is updated as material is added to the collection pertaining to that language.

Depending on the languages into which various documents have been translated due to the time and cost of obtaining translations of documents in all official languages, cross-referenced authority files can vary from two to four languages. A new language name authority file is only established and cross-referenced when there is actually a document pertaining to the name in that language added to the collection. Some examples of such cross-referenced corporate name authority files are provided in Appendix E.

Personal names are somewhat less complicated in that, for the most part, the same form of the name can be used for English, French, and Inuinnaqtun, as these are all expressed in roman orthography and is it common usage in Canada to maintain the use of diacritics for a French name attached to an English work. However, cross-references still need to be made between the roman form and the syllabic form.

More important for personal names is the recording of variant language forms within a particular authority file, and deciding which will be the official form. As a general rule, a personal name transliterated from syllabic to roman will likely have a number of roman variants in the roman authority file, and one transliterated from roman to syllabic will have a number of syllabic variants in the syllabic authority file, if the person is connected to more than one publication. Preference is given to the expression of the name in the person’s mother tongue, where known, and in documents that provide some kind of authoritative source. For example, the Nunavut Hansard is used to establish the authoritative form of names in both Inuktitut and English for Members of the Legislative
Assembly. As Nunavut is, population-wise, a small place, it is often possible to contact people to determine what they prefer as the translation or transliteration of their names.

The cross-referencing of scripts and their variants as they appear on various publications is very helpful to catalogue users. The Virtua™ system used by the Nunavut consortium indicates names with cross-references by a + sign in the screen margin, and unused variants with a – sign. Users can select a name, and be shown both the cross-referenced forms and how many records are attached to each form. For example, if Elisapie Ootova’s name is selected, the user will see that there are three books attached to the syllabic version of her name, and two to the English version. This will also be a quick clue as to how many items exist in each language for that author. And if one searches for “Ootoowak, Elisapee”, one will be directed to the correct transliteration of her name—at which point one can then also check for cross-references to publications in Inuktitut.

To illustrate the full possibilities of the cross-referenced search cycle, one begins with the creation of different language, cross-referenced authority files, including variants, as follows:

Inuktitut authority record:

![Figure 14: LLN Personal Name Authority Record In Inuktitut Syllabics](image)

English authority record:
When catalogue users then want to search for this author in English, they could type in any of the following variants, bringing up this search screen:

**Figure 15: LLN Personal Name Authority Record in English**

<table>
<thead>
<tr>
<th>Authority data</th>
<th>(x) Author/name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARC 21 Authority: Authority</td>
<td>OPAC</td>
</tr>
</tbody>
</table>

**Figure 16: Search Screen for English Name (LLN)**
If one of the “see from” references, with the minus sign beside them, is chosen, one would get the following message:

![Image of the cross-references screen]

**Figure 17: Virtua “See” Cross-Reference Screen for English Name Not Used (LLN)**

Viewing the correct form of the name (with the plus sign, which indicates a cross-reference), one would find:
Clicking on the “view” button by either version of the name would then bring up a list of the titles associated with that version of the name, for example:
The parallel name search screen in the syllabic index would appear as follows:

![Screenshot of the Legislative Library of Nunavut browse screen.

**Figure 20: Browse Screen for Inuktitut Name (LLN)**

Note that, because the spelling of her name in Inuktitut syllabics has always been consistent, there is no need for any “see from” references in the Inuktitut listing, which reflects the fact that there are no 400 entries in the Inuktitut name authority record.

Within the Nunavut cataloguing consortium, these principles are followed chiefly by LLN and NAC, as both are working in syllabics. LLN’s authority files tend to be both more numerous and more extensive, due to the large proportion of government documents in its collection, since the Nunavut government is an important producer of documents and publications in Inuktitut and Inuinnaqtun. LLN is also an official depository for Government of Canada documents, which are normally published in English and French. NAC does extensive cross-referencing of syllabic and roman versions of names, but has very little French material in its collection. It can also be seen that in early days of syllabic cataloguing, the NAC catalogue cross-references between names in English and
Inuktitut, but has not necessarily chosen a preferred name where there are variants, as in the case, for example, of Alexina Kublu:

![Cross References - Nunavut Arctic College](image)

Figure 21: Cross-References to Inuktitut Name (NAC)

This cross-reference screen would indicate that for each of the syllabic versions of her name, an English cross-reference has been established, but a preferred name has not been established in Inuktitut so patrons will have to check each one of these separate author listings to determine which of her books is available.

NCJLL follows these same principles and has copied some Inuit language authority files to go with copied syllabic records. NPLS currently does not have authority files in any form, and did not migrate authorities that might have existed in its previous ILS.

Since there is very little occasion for cataloguing to be done in Inuktitut elsewhere in the world, it would appear likely that the authority files established by the LLN and NAC library will prove to be the source authority files for future groups that might wish to add syllabic materials to their catalogue in that script. At present, however, each establishes its own authority files and there is not yet one central "Nunavut" authority file source.
4.6 Retrospective cataloguing policies

All of the library systems in the consortium except the NCJLL had catalogues with varying amounts of Inuktitut material in them predating the commencement of syllabic cataloguing in 2005. Worst off were the NPLS and NAC catalogues, both of which had, for example, extensive holdings of Inuktitut story books published by the Department of Education for use as primary classroom materials—the college for its teacher education programme, the public library system for the use of its young patrons. Both of these systems also had existing catalogues to migrate to the new Virtua system. LLN had been populating its catalogue only since its installation, and had a small proportion of documents in Inuktitut, chiefly those relating to the Nunavut land claims agreement and related government bodies and Inuit organisations, as well as some Nunavut government documents. Between 2002 and 2005, any Inuktitut documents were catalogued in English, with translated titles, and “In Inuktitut” as a note. The NCJLL catalogue at this point was unpopulated.

Since 2005, NAC and LLN have been inputting records for all new items containing Inuktitut syllabics in syllabics. For materials with records already in the catalogue, staff have been reviewing and updating records in a reasonably systematic fashion. LLN focussed first on getting the records revised for all GN documents containing syllabics. Since then, there has been a change in focus to cataloguing the government’s tabled documents. The “recon” of earlier catalogue records has thus slowed down somewhat, although if an item record comes to the attention of the Legislative Librarian or the cataloguer as missing syllabic content it is often put forward for correction and updating. Only about 10% of the LLN’s Inuktitut material records still needs to be converted to syllabics.

The NAC library is dealing also with issues of quality in its migrated records, as they came from a system that was not true MARC. Thus, according to the Manager, the process of incorporating syllabic content into older records is part of an ongoing continual revision of records in order to bring them up to MARC 21 standards (NAC Library Services Manager interview).
Both of these libraries still face the issue of retrospective subject heading conversion, since there are no Inuit language thesauri yet. As a result, each library keeps a file of printouts of all of its syllabic records, which is maintained in the expectation that someday such thesauri will be implemented, at which point a subject cataloguer can go through these files and make the appropriate substitutions of Inuktitut headings. In addition, the NAC library keeps a spreadsheet tracking its Inuktitut records.

The NCJLL at present has relatively little multilingual material in its catalogue, and this is mostly English and French as there is almost no legal material written in Inuktitut and most of the Court’s lawyers work in English (Law Librarian and Acting Law Librarian interviews). The cataloguer anticipates being able to copy records from NAC and LLN for most of its needs, particularly for Nunavut government documents, and is incorporating syllabics in the catalogue in that way even though at the moment they are lacking staff able to input syllabics. Currently the NCJLL catalogue holds 11 syllabic titles.

NPLS has yet to make any firm decisions as to how they are going to handle either input of new Inuktitut items or conversion of existing records. The Manager sees this as being an enormous project for which they currently have no trained staff. It should be noted, however, that the longer they wait to do conversion, the more likely one of the other libraries will have created an appropriate record that could be copied, since the number of titles printed in Inuktut is relatively small and held in common across all types of libraries in Nunavut. Thus it may be possible for them to convert their romanised records without undue difficulty, as long as they can find the staff time or contract funding to engage in this project. This is, of course, assuming that they decide to accept the multilingual cataloguing standards being espoused by the other three libraries in the consortium.

4.7 Staffing and Funding Support for Multilingual Implementation

All of the library systems in Nunavut have tiny staff numbers. LLN has the Legislative Librarian, a Library Technician/Clerk, and a cataloguer on contract. The contract is issued on the understanding that the cataloguing of the LLN collection is a relatively finite project, and will likely be terminated once the cataloguing of the Nunavut tabled documents is completed. At that point, it is hoped the technician will have obtained
sufficient training from the cataloguer to continue basic catalogue maintenance. Meanwhile, the contract cataloguer is responsible for conversion of old non-syllabic records, creation of records for all new materials, and record creation for government tabled documents in all four official languages, in consultation with the Legislative Librarian.

NAC has a Manager of Library Services, a full-time Library Technician, and staff in satellite branches at other campus locations of the college (Rankin Inlet, Cambridge Bay). The branch staff have been given some instruction in simple copy cataloguing in English from AMICUS, but do not create original records. Thus most of the Inuktitut cataloguing is the responsibility of the technician, who consults with the Manager in terms of setting any cataloguing precedents.

NCJLL has only the Law Librarian on staff; the current Acting Law Librarian is also working on populating the catalogue through copy and original cataloguing. However, she is not able to work in Inuktitut and has no Inuktitut-speaking staff to assist, so records for Inuktitut material in this catalogue will for the near future be dependent on being able to copy records from NAC and LLN.

NPLS has three professional staff, none of whom is dedicated to technical services or has extensive experience in descriptive cataloguing. The Electronic Services Librarian is responsible, however, for the maintenance of the Virtua system for NPLS and has also managed the Chameleon iPortal for the consortium’s overall web presence. This is a significant interface for the system, and the consortium felt the loss in 2006 of an NPLS staff who was actively working on the multiple language interfaces of the catalogue, if not on actual record content; the translations of these interfaces have to date not been posted. The position has been re-staffed after remaining empty for over a year, and the new Electronic Services Librarian has been undergoing training for system maintenance from the system vendor, with the support of other members of the consortium. It is hoped that this will lead to progress on the development of the web portal and its interfaces. The syllabic content of NPLS records, however, remains a lower priority for them at present.
In the interviews, most of the managers said their budgets were adequate for ongoing catalogue work and maintenance. The Inuktitut cataloguing has been worked into the daily routine for the LLN and NAC cataloguers, and although it might be a little slower than English cataloguing, can be handled within the current budgets available. Almost everyone, however, had on their "wish list" the desire for a staff person who was both a fully trained cataloguer (whether librarian or technician) and fluent in Inuktitut. At the moment no such person appears to exist. Efforts are being made to encourage Inuit with an interest in library work to pursue this as a career, but these have yet to bear fruit. The biggest gap at present, it would appear, is the lack of staff time or project funding for conversion of NPLS’s romanised and translated records.

The other multilingual cataloguing aspect that would require a significant dedication of staff time and financial resources would be the development of Inuit language thesauri. Inuktitut would take precedence over Inuinnaqtun, as there are far more active users of that language (Statistics Canada 2008). However, to produce an Inuktitut thesaurus alone would require a combined effort by all consortium partners, providing library and thesaurus construction expertise, and the involvement of various Inuit language authorities and watchdogs, such as CLEY, the Nunavut Languages Commissioner, and the cultural departments of organisations such as Nunavut Tunngavik Inc. (the Inuit land claim administration body for Nunavut) and Inuit Tapiriit Kanatami (the national Inuit advocacy body). Given the furious debate that raged over the adoption of the now-standard Inuktitut syllabary, and the emotional attachment that Inuit have to their local dialects as an expression of identity (Harper 1983), not to mention the lexical complexity of sorting in a language that is agglutinative (Farley and Stojanovic 2007), this would be a project fraught with technical, linguistic and political difficulties beyond the norm in thesaurus construction. All of the consortium members see such a project and its product as highly desirable and necessary for complete cataloguing in Inuktitut, but likewise do not seem to have the staff time, energy and funding to undertake it as yet.

4.8 User Access to Multilingual Records

The largest obstacle to user access to multilingual records in Nunavut Libraries Online does not appear to be the catalogue content, other than a full facility to search the catalogue by subject. Careful thought has gone into cross-referencing translations,
tracing parallel and alternate titles, establishing authority files, etc. within those records that incorporate multiple languages or represent non-English materials.

Rather, barriers lie with the lack of a translated interface for Inuit language catalogue users, and also a lack of familiarity with the concept of searching in these. The NAC Library Services Manager noted that most of the catalogue searching at the College is mediated; that is, students ask the staff for assistance and the staff do the searching, as most students have little familiarity with libraries. Many of those few responding to the OPAC questionnaire (see Appendix F) indicated they were unaware that the catalogue could be searched in Inuktitut, for example. Neither NAC nor LLN have embarked on any great degree of publicity about this addition to their catalogues. A program of publicisation and patron education would probably increase the use of the syllabic content of their databases.

5. EVALUATION OF WORK UNDERTAKEN

5.1 IFLA’s Statement of International Cataloguing Principles, FRBR and RDA: New Directions in Descriptive Cataloguing

The world of cataloguing standards is in the process of undergoing a sea change, from one based on the catalogue card, with its relatively static and limited approach to access points, to that of the database record, where many access points are possible—if not necessarily always desirable. Although the essential elements of a bibliographic record remain the same—descriptions of the entity through its title, its creators, its physical description, its subjects or content—how this information is recorded, stored and related is undergoing a conceptual change in vocabulary and approach. Taylor, for example (2004 pp. 206-220) provides a thorough discussion of the concept of “main entry” and how it relates to access points in an electronic environment.

Because some of these new systems and concepts are still in development and not officially released, it is difficult for libraries to use them yet. At the same time, given that almost every library now works in an automated or online environment, consideration must be given to what impact these developments will have on the usability of current systems and their evolution in the future. The hybrid world of MARC 21 coding as a form
of metadata tagging of records created on AACR2R principles (Smiraglia 2005) is likely to evolve into a more seamless and flexible world of electronic bibliographic data storage, but only as the library community becomes familiar with these new concepts and approaches.

IFLA is currently in the process of replacing its Paris Principles statement of 1961 with a new Statement of International Cataloguing Principles, most currently discussed and revised in South Africa, August 2007, and under development for release in 2009. The intent is to expand the Paris Principles “to objectives that are applicable to online library catalogues and beyond” (IFLA 2007). Many of these principles relate specifically to providing multilingual service, or at least assume that some language other than English may be the chief language of the catalogue. These principles have also been subsumed in the current structure of the proposed revision of AACR2R, RDA (Kiorgard 2006 p. 2).

The objectives of a catalogue, as outlined in this statement, make a useful framework to evaluate whether a multilingual catalogue system is effectively serving its users. Nine major objectives are given governing issues such as user convenience, methods of representation, and depth of content, specifically for the bibliographic description of entities, and then a number of principles are outlined that should help to achieve these objectives. These will be outlined below in detail in evaluating the quality of Nunavut practices in relation to this forthcoming standard. It should be noted that the IFLA statement indicates there are objectives for subject thesauri under development that should apply as well, but these are not included in the current statement (IFLA 2007 p. [2]). Essentially, IFLA recognizes that there are, in a sense, two forms of access: access through bibliographic description, that is, of the work in question and those associated with its production, and access by subject, which involves the development of controlled language schemes that can be more effective than simple keyword searching in returning useful search results.

IFLA has also been behind the development of FRBR, the outline of Functional Requirements for Bibliographic Records, which aim at being an international, universally usable set of principles for the content of records (along with the related Functional Requirements for Authority Data, FRAD) (IFLA Study Group on the Functional Requirements for Bibliographic Records 1998; IFLA Working Group on the Functional
Requirements and Numbering of Authority Data 2007). Although the FRBR guidelines were initially issued a decade ago, it is just within the last few years that they have become increasingly publicised and incorporated into various electronic cataloguing systems. In a presentation at the Canadian Library Association annual conference in 2006, Delsey noted that FRBR modeling has been taken up by the international library community more than in North America, and at that time had not been incorporated by many North American vendors into their ILSs (Delsey 2006). It is no coincidence, perhaps, that the Virtua™ system used by Nunavut Libraries Online, which has a large international and multilingual market, was one of the first to incorporate FRBR principles into its ILS and makes “Ferberisation” a display option for its records (VTLS, Inc. 2007).

FRBR purports to be a new presentation of old concepts, with a user-centred perspective on data: its models define user tasks relating to data as follows:

- Find: finding resources that correspond to the user’s search criteria
- Identify: confirming that the description corresponds to the item sought
- Select/deselect: determining which resource is appropriate to user needs
- Obtain: acquiring or accessing the item desired.

(Delsey 2006)

FRAD is intended to set standards for the control of access points through the means of authority files, which can then be linked to bibliographic files (Sardo 2004; IFLA 2007).

One of the major changes in the evolution of AACR is the incorporation of FRBR principles into the design of RDA itself (Kiorgard 2006 p. 2). The new structure is intended to be compatible with older AACR-based records (Joint Steering Committee for Development of RDA 2007 p. 4), but to be able to evolve with new formats of materials and new database structures in a flexible way while consistently applying descriptive principles. The JSC is also providing documents that cross-map FRBR attributes and relationships to RDA elements, thus demonstrating the close evolution of the two (Kiorgaard 2007a; 2007b). Where AACR rules were based on the concept of the ISBD, RDA is based on the draft Statement of International Cataloguing Principles (Kiorgard 2006 p. 2). Even the dropping of “Anglo-American” from the name of the new edition reflects the fact that RDA is intended to be more international in scope, with more flexibility for language and expression, which is a welcome development for libraries that have based their cataloguing standards on AACR2R but must make accommodations or
adjustments from the English-centred instructions currently found in those rules—a problem encountered from Russia (Terekhova 2000) to Nunavut.

5.2 Compliance with IFLA Objectives in Nunavut Libraries Online

A detailed examination of the objectives outlined in the 2007 IFLA draft reveals to what extent the policies adopted by the members of Nunavut Libraries Online will or will not conform to these objectives when formally issued. Since the consortium is still in the early development stages of providing multilingual access to materials, an awareness of those practices that might be weak with regard to these objectives can help them to address these areas and perhaps afford them arguments for increased support in the development of wider patron access. The objectives are listed below as found on the first page of the statement of principles, together with an indication of how they can be applied in practical terms in a multilingual context and to what degree this is being done within the Nunavut consortium.

**Objective 1: Convenience of the user of the catalogue**

“Decisions to be made for bibliographic description and controlled forms of access should be made with the user in mind.” (IFLA 2007 p.1)

Application:

- The language of the user should be available for use, presumably in the framework or interface of the catalogue, as well as its content. Nunavut libraries have taken some steps in this direction; all provide some access to records in French as well as English, and at least two of the consortium libraries provide record content in Inuktitut and Inuninnaqtun. However, the catalogue interface, both for each system’s client OPAC and for the Nunavut Libraries Online website, currently appears in English only. The ILS vendor, VTLS, does provide a French interface, but it appears that until Inuktitut translations have been created and made available, the catalogue interface will remain in English only so as not to exacerbate existing resentment by Inuit of French taking precedence over Inuit languages in multilingual contexts.
The script of the user’s language should be available, avoiding transliteration where possible. Transliteration is a tool for non-users of a particular script, and causes confusion for actual users. Although a transliterated Inuktitut title might help someone who did not speak Inuktitut to locate an item, the item is still of no particular use. An Inuktitut speaker used to reading in syllabics, who might actually use the item, would be unable to find it at all.

A particular user should be able to access the catalogue in the same way as any other user, regardless of language. This currently is the greatest weakness of the Nunavut consortium’s system: Although one can search using Inuktitut or French terms, for example, and retrieve Inuktitut or French items, the search itself must be conducted through the medium of an English search screen. This is a substantial disincentive for unilingual Inuktitut speakers, for example, to use the system, and may account in part for the low rate of use by Inuktitut speakers as yet.

Objective 2: Common usage

“Normalized vocabulary used in description and controlled access should be in accord with that of the majority of users” (IFLA 2007 p.1)

Application:

- Use the standardized vocabulary already available in English and French used by the library community, country- and world-wide. This is done in Nunavut through its adherence to the AACR2R rules and to the vocabulary and thesauri presented in the national catalogue, AMICUS.

- A similar standardized vocabulary has been developed for Inuktitut for item description, since information and library science is a new field for the language and not part of the traditional vocabulary. Since consensus on this vocabulary has been established early, the usage of these terms can be promoted and normalized.

- Subject access is trickier, as Inuktitut is a non-standardised language as a whole and filled with dialectal variants in traditional vocabulary. It is easier to establish consensus in areas of new language development, such as law, technology and science. Glossaries, conference consultations amongst translator/interpreters, etc. contribute to the establishment of a “new”
vocabulary to go with new areas of endeavour. Government standards, where they exist, would be preferable. At some point, however, the members of this consortium will have to come to grips with the effort and cost required to establish Inuit language controlled subject vocabularies.

**Objective 3: Representation**

“Descriptions and names should be based on the way an entity describes itself.” (IFLA 2007 p.1)

Application:

- At the very least, the language of the entity should be used to describe the entity: *i.e.* Inuktitut items should be described in Inuktitut, English in English, bilingual or multilingual items should be described in each language contained by the item. This is the policy currently adopted by LLN, NAC and NCJLL. NPLS still has to make decisions in this regard.
- This consideration might obviate translated records as separate entities. However, supplementary language information for other language users can be added, for example in the inclusion of “title translated by cataloguing agency” tracings, uniform title headings, and added title entries for translations. This would depend on whether individual users are actually multilingual and could make use of items in more than one language: the more of these there are among the patron set, the more useful such cross-references might be.

**Objective 4: Accuracy**

“An entity should be faithfully portrayed” (IFLA 2007 p.1)

Application:

- In addition to common elements of description, the catalogue record should portray the language of the item, rather than having an English record that says “text in Inuktitut syllabics.” This is at present the biggest failing of the NPLS catalogue, and an issue that requires some attention by all of the libraries in terms of correcting records created before Inuktitut syllabics were being used. A failure to do so can lead to two records for the same item
appearing to describe totally different entities; for example one children’s storybook written in English, Inuktitut and French appears in the NPLS catalogue in roman orthography, English and French, with a note “in syllabics” as well; the same item is described only in Inuktitut syllabics in the NAC catalogue. People looking at the catalogue records would have no idea they are describing the same book:

Figure 22: NPLS Record for “ᐅᓪᓗᒥᓱᖅᑲᐅᕕᑦ? = What did you do today?”
This is also an argument for an item in many languages having a record in many languages, with parallel titles and supplementary fields, rather than separate records for each language, so that it is apparent to the browser that a particular item is in fact multilingual.

**Objective 5: Sufficiency and necessity**

“Only those element necessary for accurate identification should be included—enough to ensure the unique identity of an item.” (IFLA 2007 p.1)

**Application:**

- This objective does not seem to be especially language-sensitive, other than accurately identifying the language of a item, for example to permit a choice between translations or different language editions of an item.

**Objective 6: Significance**

“Elements of a bibliographic record should be bibliographically significant”
Application:

- The same standards of description should be applied in each language or script involved for bibliographically significant elements. If an item is printed in Inuktitut, the Inuktitut searcher is entitled to see the significant bibliographic elements described in Inuktitut, such as the publisher, place of publication, physical description, availability of an index or bibliography, etc. This is for the most part possible now, thanks to the standardized Inuktitut cataloguing vocabulary list; the chief issue for some libraries is instituting the practice of describing Inuktitut items in Inuktitut.

Objective 7: Economy

“Given alternatives, the simplest or lowest-cost approach should be taken” (IFLA 2007 p.1)

Application:

- Again, the issue of transcription vs. translation or transliteration arises: since it is now economical and practical to use syllabic script, for example, library systems should avoid the extra effort and cost required to translate or transliterate records.

- If one has the appropriate tools (fonts, scripts, cataloguing vocabulary, thesauri, etc.) it is simpler to catalogue directly in the language of an item. The cataloguers for LLN and NAC have simultaneously and independently developed techniques for inputting syllabics in an efficient and economical fashion, with use of the CLEY wordlist and by keeping other lists of commonly-used words and phrases (e.g. names of places in syllabics, months of the year, terms for organisations and entities). Both find that creating an Inuktitut record does not take much longer than creating an English one; the most time-consuming records are those that involve two or more languages, as information has to be duplicated. The cost of this, however, is outweighed by the convenience for the users.

- However, one can question the cost-effectiveness of including marginal languages with few users in a specific catalogue. At the moment no one in Nunavut is, for example, trying to catalogue in Russian or Japanese, although libraries might hold one or two volumes in these languages. For these,
English and romanisation are used by default. Languages like Greenlandic, which is closely related to Inuktitut and read by a limited number of users, might be the first to be added to a list of languages used for cataloguing in future.

- Setting up cataloguing consortia or sharing records is an economical way of increasing numbers of items catalogued in a less-used language, but it then becomes even more important that members of such groups agree on basic approaches and consistent cataloguing policies for the contents of such records. The collaborative nature of the cataloguing work in Nunavut has made cataloguing more cost-efficient and should help those systems such as the NCJLL, which is still populating its catalogue, and NPLS, which has no cataloguing in syllabics, when they come to the point of adding material in syllabics to their databases. It is to be hoped that NPLS will adopt the same standards; certainly all the consortium members have proved willing to share records between their various databases.

**Objective 8: Standardisation**

“Bibliographic description and controlled access points should be provided in as standard a way as possible.” (IFLA 2007 p.1)

Application:

- Library systems should use nationally-developed standard library tools for English and French. Currently, in Canada, this would be AACR2R for bibliographic description; true MARC 21-coded ILSs; LCSH/CSH for English subject headings; RVM for French subject headings; and Dewey or LC for classification. This is the case for all consortium members.

- Nunavut libraries should use the standard Inuktitut and Inuinnaqtun vocabulary developed by CLEY to translate existing English library standards into Inuit languages. This vocabulary will need continuing attention as more items in Inuktitut are catalogued and new notes and terms are encountered that require translation.

- There should be consistent MARC 21 markup within records for recording fields of information, using AACR2R rules as a basis of operation regardless of language, at least until such time as the AACR2R transformation into RDA
is complete. Established coding can be used, for example, to trace variant titles, parallel titles; to provide notes; to cross-reference authority files. Because electronic records are more flexible than catalogue cards, both Inuktitut and English or French forms of names can be traced in a bi- or multi-lingual record, using the appropriate tag identification (e.g. 700 to trace an individual author in one language where the name appears in the 100 field in the other).

- To date, it appears that Inuktitut cataloguing can use existing rules as a standard, except where an actual conflict of linguistic use would exist—simply ignoring any AACR2R rules on the precedence of English as the cataloguing language and roman orthography as the script. An area requiring particular attention would be variants of titles and translations of titles within Inuktitut records (e.g. in a serial multilingual item with one English title but several Inuktitut translations of the same). Authority records and variant tracings become very important.

**Objective 9: Integration**

“The same standards should be used for all forms of an item” (IFLA 2007 p.1)

**Application:**

- Translations and alternate language editions of items should be given equal status and treatment as bibliographic records. This is the policy applied by LLN and NAC. Cross-references to editions in other languages are supplied as a convenience.
- Standards and vocabulary must be adequate to describe more than just book formats, no matter what the language. The CLEY cataloguing vocabulary developed for Inuktitut contains translations of the standard AACR2R GMDs (which may need revision if RDA is adopted as the standard) and also translations of all the terms commonly used in the physical description (MARC 300) to describe such formats as DVDs, CD-ROMs, audio and video cassettes, etc.
- Non-book formats must be given equal treatment in description. This is currently the case; current AACR2R rules are applied equally to all formats, insofar as they are covered by those rules.
Overall, then, it would appear that those libraries in the consortium that have incorporated Inuktitut syllabic cataloguing for those items are well on the way to meeting the objectives and the spirit of these IFLA principles. There is still a lack in terms of alternate language access to the system itself, but the correct approach is being taken to the bibliographic description. The greatest shortfall in bibliographic description is the lack of Inuit language thesauri for subject access.

Some supplementary observations regarding the compatibility of Nunavut practice with some of the multilingual aspects of the *RDA Objectives and Principles* are provided in Appendix I.

**6. WORK STILL TO BE DONE**

Not all of the IFLA principles require the same amount of effort, input or cost in a multilingual catalogue context. The thorniest problems Nunavut libraries need to resolve are representation vs translation; the need for full interfaces in all languages for their OPACs and the attendant translation effort and cost; the need to establish consistent multilingual authority files; and the development of subject thesauri, which have been no more than briefly touched on and are a major concern.

Two of the Nunavut libraries, at least, have made significant progress in representing works in Inuit languages accurately and faithfully in their catalogues, through the transcription of data in Inuktitut where appropriate and in the bibliographic description of items in Inuktitut and to some extent in Inuinnaqtun. Both of these libraries also create authority files within their databases for cross-referencing variant language forms of authors, although at present neither can be said to hold the “authoritative” authority record and no specific discussion of this issue has taken place among consortium members.

Despite having come a long and ground-breaking way in creating records in Inuktitut, Nunavut libraries have not quite reached the point of full service, primarily due to a lack of an Inuktitut interface for the catalogue as a whole and secondarily due to difficulties in implementing an authoritative controlled language for Inuit language subject access.
Until agreement can be reached as to how to implement subject access in Inuit languages and which government or library agency will be the custodian of the official thesaurus, cataloguing staff are reluctant to include uncontrolled Inuit terms as subject headings.

Retrospective cataloguing is a serious issue for the public library system as a previously fragile staffing environment, lack of technical services expertise and supporting budget mean retrospective catalogue conversion of their numerous but romanised holdings is not a high priority.

All of the Nunavut libraries think their patrons would be better served if they had a fluent Inuktitut speaker trained in at least basic cataloguing techniques, and as yet there is no such person. Training and development of the larger library community in Nunavut should thus be a priority. Likewise more patron education is required so that users will become aware that searching a catalogue in Inuit languages is now a viable search option.

Finally, until LAC updates its AMICUS catalogue to accommodate Unicode, the Nunavut libraries using syllabics (chiefly the legislative and college libraries) will not be able to submit their records and holdings to the national catalogue for use by other library systems and thus facilitate Inuktitut copy cataloguing. This is regrettable but unfortunately completely out of the hands of the consortium.

Tools for implementing the IFLA principles are continually evolving and improving. The climate for multilingual access worldwide is getting easier, but full service depends on the availability of funding, a supportive political climate, and the will to implement.
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To whom it may concern,

I am very happy to lend my support to the Inuktitut Cataloguing practices pioneered by the Nunavut Library Consortium.

As Inuktitut is a vital part of our territory's culture, identity and intellectual richness, it is great to see individuals in any field adapting new technology to ensure the vitality of our Inuit Language.

The Government of Nunavut has committed to making Inuktitut the working language of government by the year 2020, and initiatives such as this one make using Inuktitut in a modern setting a realistic goal.

Although the clientele base of this Inuktitut Cataloguing project is currently small, the project is significant in a number of ways. Firstly, this sets an excellent example of the ways in which modern technology can be adapted to Inuktitut in a user-friendly way.

Secondly, although there are not as many unilingual Inuktitut speakers in our territory as there once was, these people are a valuable resource to government and educators, and are respected as the language professionals they are. More resources available to them to will ultimately allow them to work more efficiently in whatever field they are advising.

There exist currently a significant number of books for children, linguists, and others written in Inuktitut syllabics. Many of these are not in popular use in the territory for the simple reason that nobody knows that they exist, or where to find them. Cataloguing these invaluable resources for generations of schoolchildren and researchers to come is of course of great importance.

As for the Legislative Library resources, the immediate impact of the Inuktitut Cataloguing project will be felt as our MLAs, several of whom are unilingual Inuktitut speakers and readers, will be able to research information stored in Inuktitut on their own without the cost or delay of finding translators.

I would like to personally acknowledge everyone involved with this project for their dedication to the Inuit Language, and for their enterprising spirit. It is people such as these who will ensure the Inuit Language thrives in a meaningful way.

Sincerely,
Johnny PT Kusugak
Languages Commissioner of Nunavut

May 2007
Appendix B: Preambles to Current Nunavut Language Legislation

BILL 6
OFFICIAL LANGUAGES ACT

Recognizing that the existence of Inuit in Nunavut from time immemorial, and also their presence elsewhere in the Arctic, constitutes a fundamental characteristic of Canada;

Recognizing that the social unity of Inuit in Nunavut, having a common Inuit Language, and having asserted an aboriginal title based on Inuit traditional and current use and occupation of lands, waters and land-fast ice existing in Nunavut, constitutes Nunavut a distinct society within Canada;

Affirming that, contrary to past practice in which the Inuit Language was legally, socially and culturally subordinated in government and elsewhere, it is desirable that the Inuit Language be recognized as

(a) the indigenous language of Nunavut,
(b) the spoken and preferred language of a majority of Nunavummiut,
(c) a defining characteristic of the history and people of Nunavut, and of the Inuit as a people of the wider circumpolar world, and
(d) a necessary element in
   (i) the improvement of Inuit social, economic and cultural well-being, as contemplated by the Nunavut Land Claims Agreement, and
   (ii) the development of the public service, and of government policies, programs and services, as contemplated by the Nunavut Land Claims Agreement;

Desiring to establish the Inuit Language, English and French as the Official Languages of Nunavut, having equality of status and equal rights and privileges as Official Languages;

Affirming that the Inuit of Nunavut have an inherent right to the use of the Inuit Language in full equality with the other Official Languages, and that positive action is necessary to protect and promote the Inuit Language and Inuit cultural expression, and is consistent with Canada's international undertakings, including the International Covenant on Civil and Political Rights and the Convention on the Protection and Promotion of the Diversity of Cultural Expressions, proclaimed by the United Nations;

Observing that territorial institutions have an obligation under Article 32 of the Nunavut Land Claims Agreement to design and deliver programs and services that are responsive to the linguistic goals and objectives of Inuit, and that Nunavut and Canada are the government parties obliged to implement and give effect to the land claim rights of Inuit; Being committed to the protection, promotion and revitalization of the Inuit Language, Inuit identity and Inuit cultural expression in Nunavut;

Desiring to provide in law for the use of the Inuit Language for all or any of the official purposes of Nunavut at the time and in the manner that is appropriate;
Determined to advocate for and to achieve the national recognition and constitutional entrenchment of the Inuit Language as a founding and official language of Canada within Nunavut;

Recognizing the heritage, cultural contribution and value of all three Official Language communities in Nunavut and affirming the commitment to

(a) establish a clear standard of communication and access to government services in the three Official Languages,
(b) protect and promote the French Language and the vitality of the Francophone community, consistent with the obligations of Nunavut and of Canada, and with their policies as mutually agreed, and
(c) provide a framework for action on the part of territorial institutions with the goal of ensuring that the Inuit and Francophone communities in Nunavut each have the means necessary to safeguard and strengthen their cultural expression, collective life and heritage for future generations; and

Understanding, because of the fundamental character of the values expressed and the important federal, territorial and Inuit objectives reflected in this Act, that the Official Languages Act shall enjoy quasi-constitutional status in law;

The Commissioner of Nunavut, by and with the advice and consent of the Legislative Assembly, enacts as follows: […]

BILL 7

INUIT LANGUAGE PROTECTION ACT

Honouring as wise guardians, the Inuit Elders and the other Inuit Language speakers and educators who have sustained and developed the Inuit Language from time immemorial, and have imparted the knowledge and appreciation of the Inuit Language, cultural and oral traditions that characterize Inuit as a people, to this day;

Considering the importance of the Inuit Language

(a) as a cultural inheritance and ongoing expression of Inuit identity both in Nunavut communities and in the wider circumpolar world,
(b) as the fundamental medium of personal and cultural expression through which Inuit knowledge, values, history, tradition and identity are transmitted,
(c) to the development of the dynamic and strong individuals, communities and institutions in Nunavut that are required to advance the reconciliation contemplated by the Nunavut Land Claims Agreement,
(d) to support the meaningful engagement of Inuit Language speakers in all levels of governance and in socio-economic development in Nunavut, and

(e) as a foundation necessary to a sustainable future for the Inuit of Nunavut as a people of distinct cultural and linguistic identity within Canada;

Determined to respond to the pressures confronting the Inuit Language by ensuring that the quality and prevalent use of the Inuit Language are protected and promoted, and the Inuit Language is affirmed as

(a) a language of education, in a system that in both its design and effect strives to equip Inuit children to enter adult life as world citizens having a rich knowledge of the Inuit Language and full ability to participate in the day-to-day life, development and cultural vibrancy of their communities and homeland,

(b) a language of work in territorial institutions, and a necessary element in

(i) the development of a representative and appropriate public service environment in Nunavut, and

(ii) the full and representative participation of the Inuit of Nunavut in the economic opportunities and development of Nunavut, and

(c) a language used daily in services and communication with the public throughout all sectors of Nunavut society;

Emphasizing that the effective teaching and transmission of the Inuit language, especially during early childhood and in communities or age groups for which there are special concerns about language loss or assimilation, are now critical,

(a) for improved Inuit educational achievement generally, and

(b) for Inuit Language protection, promotion and revitalization in Nunavut;

Observing that territorial institutions have an obligation under Article 32 of the Nunavut Land Claims Agreement to design and deliver programs and services that are responsive to the linguistic goals and objectives of Inuit, and that Nunavut and Canada are the government parties obliged to implement and give effect to the land claim rights of Inuit;

Affirming that the Inuit of Nunavut have an inherent right to the use of the Inuit Language, and that positive action is necessary to protect and promote the Inuit Language and Inuit cultural expression, and is consistent with Canada's international undertakings, including the International Covenant on Civil and Political Rights and the Convention on the Protection and Promotion of the Diversity of Cultural Expressions, proclaimed by the United Nations;
Observing that the fulfillment of these linguistic rights is inseparable from the equality and human dignity of Inuit, and from the promotion of Inuit self-reliance and cultural and social well-being as contemplated by the Nunavut Land Claims Agreement;

Observing that positive action is necessary to ameliorate conditions of disadvantage and address systemic discrimination faced by those for whom the Inuit Language is a first, only or preferred language;

Affirming the commitment of the Government of Nunavut to uphold its obligations as a public government, including its obligations toward Francophones and Anglophones under the Official Languages Act of Nunavut and other laws protecting and promoting language rights and the right to equality and non-discrimination;

Determined, in return, to advocate for and to achieve the national recognition and constitutional entrenchment of the Inuit Language as a founding and official language of Canada within Nunavut; and

Understanding, because of the fundamental character of the values expressed and the important objectives of this Act, and on legal authority including sections 15, 25 to 27 and 35 of the Constitution Act, 1982, that the Inuit Language Protection Act shall enjoy quasi-constitutional status in law;

The Commissioner of Nunavut, by and with the advice and consent of the Legislative Assembly, enacts as follows: […]

(Nunavut 2008a pp. 1-2; Nunavut 2008b pp.1-2)
Appendix C: Case Study Data Collection Framework

The Nunavut Libraries Online consortium, using the Virtua ILS, comprises four separate databases for four library entities in Nunavut: the Legislative Library of Nunavut, Nunavut Arctic College library services, Nunavut Court of Justice Law Library, and Nunavut Public Library Services. As they serve a territorial population of just under 30,000, these systems are small, in global terms, and thus relatively easily examined.

A. Case study data collected:
Each of these systems has been examined separately, using the same criteria, and then compared. The chief elements examined were:
   a) Language policy for the library system
   b) Language policy implementation within the system, as measured by:
      i) the number of records in the various languages (taking into consideration the amount of material that is actually published in each language);
      ii) resources devoted to cataloguing and language policy implementation (budget, staff, time);
      iii) the development of needed cataloguing language, tools and standards for aboriginal languages (e.g. translations, translation workshops for developing cataloguing vocabulary, need for subject thesauri, etc.);
      iv) actual cataloguing policies and procedures, as represented by documented workflows and confirmed through field-by-field analysis of the MARC coding of records.
   c) User perspective on catalogue implementation
      i) web OPAC access and use;
      ii) search capabilities of the system in all languages (types, retrieval rates)

B. Data collection protocol for the case study:

The above information was collected using the following methods:
   a) Review of vendor claims for the ILS:
b) Analysis of each system’s cataloguing policy:
   i) a review of each system’s documentation and written policies;
   ii) interviews with library policy makers (regarding their past experience, future directions, etc.);

b) Analysis of actual MARC records from each system:
   i) analysis of options and implementation of language representation in these records; *e.g.* one record per language, each record to represent item as is, translation of records, transliteration of records in non-roman scripts, whether separate or combined fields for multiple languages (*e.g.* use of = in record fields vs. repeating the whole field in another language), etc.
   ii) an examination of the MARC coding of records representing various types of multilingual records, and evaluation of the resulting ILS client and Web OPAC displays:
      - unilingual (obtained samples of every language and script represented in the catalogue);
      - bilingual (analyzed samples of every possible combination, *e.g.* English-French; English-Inuktitut, Inuinnaqtun-French, etc.);
      - three or more languages in record (*e.g.* government documents in all four official languages).

Typical issues for analysis:
- representation of parallel titles or descriptive information;
- tracing of variant forms due to dialectal differences;
- whether to show variant tracings in OPAC records or simply make them available for searching; etc.

iii) examination of cross-language search tools: chiefly authority files for names and subjects, uniform titles for translations, tracings for other language versions of a title, etc.

b) Documentation of workflows:
i) analysis of written documentation: policy and procedure manuals, resource materials such as the Inuktitut-Inuinnaqtun cataloguing terminology list (see Appendix G for an extract from the terminology list and Appendix H for a sample policy)

ii) interviews of cataloguing staff (including personal experience of researcher), covering procedures for cataloguing new materials in multiple languages and issues of retrospective conversion work (i.e. “recon”) on records for non-English materials currently represented by transliteration and translation

Analysis of user accessibility:

i) administration of a Web OPAC user questionnaire, surveying for frequency and ease of use, Internet vs. in-library use, usability of syllabics on personal computers and in-library

ii) analysing search capacity by use of several typical types of searches and comparing results among the various databases.
Appendix D: Case Study Interview questions:  
Library Management and Cataloguing Staff

Interview Introductory Remarks:

Your responses to this interview form a key part of my research into issues arising from implementing a multilingual and multiscript catalogue for library patron service. This research will be described in my thesis to be submitted in partial fulfilment of the requirements for the MSc in Information and Library Studies at the Aberdeen Business School of the Robert Gordon University, Aberdeen, Scotland.

I do not know of any risks to you if you are willing to participate in this interview, and I guarantee that your responses will not be identified with you personally unless you give your express and written permission; your responses will be identified within the thesis only by the name of your position.

This Interview will be largely unstructured in order to obtain the broadest possible narrative of the situations leading to the implementation of the multilingual catalogue by each manager or staff member and plans for future direction.

I will be taking notes during our conversation, and will give you a copy of these notes to verify when I have transcribed them before any information from your interview is included in my thesis. I will be happy to provide you with a copy of my thesis when it is complete and submitted.

Questions:
1. For system managers

   - How long have you been working in this library system?
   - What is your role in managing the library’s catalogue?
   - Which of Nunavut’s official languages do you speak/read/write, and to what degree?
   - Which languages do you use in your daily work?
   - Which languages do your patrons use? (reading, speaking, writing)
• How important do you think it is to have all of Nunavut's languages reflected in the catalogue?

• Do you experience political or administrative pressure to have multiple languages in the catalogue?

• Have you taken any particular action to increase the presence of languages other than English in your system’s catalogue?

• Have you established policies for cataloguing in multiple languages? Are these documented?

• What kind of resources do you think you need to provide full multilingual cataloguing service? (e.g. budget, staff)

• Do you feel your budget is adequate to deal with multilingual cataloguing issues?

• What future actions need to be taken to improve the catalogue?

• Do you think the multilingual capacity of your ILS is being fully implemented?

2. For cataloguing staff

• How long have you been working in this library system?

• What is your role in cataloguing the collection?

• Which of Nunavut’s official languages do you speak/read/write, and to what degree?

• Which languages do you use in your daily work?

• What is your training in cataloguing?

• How important do you feel it is that the catalogue reflect the languages in your collection?

• What kind of effect does cataloguing in multiple languages have on your workload?

• Do you have established procedures to follow in creating multilingual records?

• Have you developed any special techniques to simplify or speed up multilingual data entry?

• Do you use copy cataloguing facilities, or do you create completely original records?

• Do you create authority records? If so, what kind? (i.e. subject, name; languages)
• What future actions need to be taken to improve the catalogue?
• Do you think the multilingual capacity of your ILS is being fully implemented?
Appendix E: Sample Record Analyses

This appendix presents some typical results from analysis of a wide sample of records from each of the Nunavut consortium’s library databases.

1. Records in One Language Only

(a) English Records:

*Standard NPLS English Record*

This record from the NPLS catalogue for an English language item conforms to regular AACR2 standards.
(b) Inuktitut Records:

Standard NAC Inuktitut Record

This record contains text, description, and notes in syllabics; the cross-reference to the English edition of the same title is traced with a 740 field. The “Partial contents” note is generated automatically by the system.
Standard LLN Inuktitut record

This record for an Inuktitut translation of a Government of Canada document includes a uniform title in English, also held by LLN. It includes author (conference name), title, description, notes on other language editions and a note that this is also available on the Internet in Inuktitut. The French edition is not traced since LLN does not hold a copy. The note regarding the Depository Services Program has not been translated into Inuktitut yet. An Inuktitut subject heading is provided for the name of the conference; other subject headings are in English. The English name of the PCO secretariat is used because it was not translated on the original item. If an English speaker was checking whether there was an Inuktitut edition of the report, the title search screen shows the following:

<table>
<thead>
<tr>
<th>Call Number:</th>
<th>CAN PGC Bha 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author:</td>
<td>Housing sectoral follow-up session, Inuktitut</td>
</tr>
<tr>
<td>Uniform Title:</td>
<td>Housing sectoral follow-up session, Inuktitut</td>
</tr>
<tr>
<td>Title:</td>
<td>Inuktitut</td>
</tr>
<tr>
<td>Publication:</td>
<td>2004-2005</td>
</tr>
<tr>
<td>Material Information:</td>
<td>2005-2006</td>
</tr>
<tr>
<td>Added Author:</td>
<td>Canada Privy Council Office, Aboriginal Affairs Secretariat</td>
</tr>
<tr>
<td>Subject:</td>
<td>Native peoples -- Housing -- Canada -- Conferences</td>
</tr>
<tr>
<td>Subject:</td>
<td>Native peoples -- Canada -- Government relations -- Conferences</td>
</tr>
<tr>
<td>Subject:</td>
<td>Native peoples -- Canada -- Conferences</td>
</tr>
<tr>
<td>Note:</td>
<td>Distributed by the Government of Canada Depository Services Program</td>
</tr>
<tr>
<td>Note:</td>
<td>Balancing du suivi sectoral sur le logement</td>
</tr>
<tr>
<td>Note:</td>
<td>Balancing sectoral follow-up session</td>
</tr>
<tr>
<td>Note:</td>
<td>Can be downloaded</td>
</tr>
<tr>
<td>Multimedia:</td>
<td>Click to link to URL: <a href="http://www.aboriginalfunding.ca/sec/hsic/index.html">http://www.aboriginalfunding.ca/sec/hsic/index.html</a></td>
</tr>
</tbody>
</table>

Unsatisfied Requests: 0
Total Requests: 0
Title: Housing sectoral follow-up session. Inuktitut.

2. Housing in Nunavut.
3. Housing needs of low-income people living in rural areas / Canadian Mortgage and Housing Corporation; prepared by David Bruce.
4. Housing needs of Nunavut / Nunavut Housing Corporation.
5. Housing needs survey / Northwest Territories Housing Corporation.
6. Housing policy options for women living in urban poverty: an action research project in three Canadian cities / by Marge Reitsma-Street... [et al.]
7. Options en matière de politiques de logement urbaine pour les femmes vivant dans la pauvreté: un projet de recherche-action dans trois villes canadiennes / Marge Reitsma-Street... [et al.]
8. Housing proposal for the City of Iqaluit, Nunavut / Avi Friedman Consultant Inc.; design, Avi Friedman; assisted by Jeff Jerome and Faxlong Wu.

(c) French Records:

Call Number: KF8205.P47 1999f
Filing Title: Perspectives on traditional law.
Title: Perspectives sur le droit traditionnel / Mariano Aupilaaqju... [et al.]; sous la direction de Janice Oostan, Frédéric Laugrand et Wm Rasing; traduit de l’anglais par Denise Neve.
Material Information: iv, 256 p. : ill., ports. ; 23 cm.
Series: Entrevue avec des aînés inuit ; v.2
Added Author: Oostan, Janice.
Added Author: Rasing, Wm.
Added Author: Laugrand, Frédéric.
Added Author: Aupilaaqju, Mariano.
Subject: Inuit -- Canada -- Moeur et coutumes.
Subject: Inuit qaumajatunqangit.

Uncataloged Requests: 0
Total Requests: 0

Standard NCJLL French Record
This record provides a uniform title (240) to indicate it is a translation; also traces the Inuktitut edition in a 740 field (not displayed in OPAC standard view), although the record lacks a note pointing to the translated editions.

Standard LLN French Record

This record is a translation of an English item. The uniform title traces the English version. Text, descriptions, notes, subject headings are all in French.
(d) Inuinnaqtun:

**Standard LLN Inuinnaqtun Record**

This record is for an item that is issued annually in separate language editions by a GN department. The department is traced in Inuinnaqtun (Department of Human Resources). The uniform title is provided in English. The title/statement of responsibility and publication information are provided in Inuinnaqtun. Because the remaining notes and subject headings have not been translated for the official terminology list yet, they appear in English. There is, however, a syllabic pointer to the Inuktitut edition. There is a “Title varies” note. This means in the MARC coding, several variant translations of “Public service annual report” have been traced so they can be found in the title index, as follows:
MARC Coding for Tracing Variant Translations of Title (LLN)

2. Bilingual Items

(a) English-French:

Standard NCJLL Bilingual English-French Record
This record contains a parallel title, traced, and subject headings in both languages.

(b) English-Inuktitut:

Standard LLN English-Inuktitut Record

This record represents a tabled document in both languages. A parallel Inuktitut title is provided and traced; publication information and physical description are provided in parallel languages, and all notes are provided in both languages. Both the Inuktitut and English versions of the name of the added author are given, and both are also used as a subject heading. Only the topical subjects do not have an Inuktitut equivalent. All tabled documents are traced as a series entry, in both languages whatever the language of the record, so everyone can find the Tabled Documents in one index reference point in either English or Inuktitut (a practice peculiar to the special nature of the Legislative Library).
3. Records with Various Combinations of Languages

(a) English-Inuktitut-French:

NPLS Standard Record in English, Inuktitut and French

The record contains parallel information for the English and French parts of this text, with parallel title in French traced and subject headings and notes provided in both languages. However, there is no transcription of the Inuktitut content. The only indication that this item contains Inuktitut material is the note that text is in English, Inuktitut syllabics and French.
NAC Standard Record in English, Inuktitut and French

This record provides transcription of title in all three languages; it is quite possible that the author is only indicated in English/French on the original material. Notes, publication information and physical description are given in English and Inuktitut, as the College has little call for French material. The English version of the title is traced but not the French for the same reason.
Standard LLN Record in English, Inuktut and Inuinnaqtun

This document, issued by a government department, has parallel titles in Inuktut syllabics and Inuinnaqtun, both traced. The name of the government department as both author and subject is traced in all three languages using the standardised department names. Publication and description information, as well as all notes, are in English and Inuktut due to the lack of complete Inuinnaqtun cataloguing terminology. The department name is traced as a subject heading in Inuktut and Inuinnaqtun, but lacks the subject heading topical subdivision provided in the English for the department. Topical subject headings are still in English only.
This record describes an annual report from a GN department issued in all four official languages. The main entry is for the English name of the department committee, but all other language versions are traced as added authors so that anyone searching the author index using the alternate languages will pull up this title (all are filed in one index regardless of language; syllabic entries follow roman ones at the end of the index due to their Unicode coding positions). Title, statement of responsibility and publication information are in all four languages. Physical description is given in English (congruent with French description) and Inuktitut. Notes are given in English, French, and Inuktitut. Subject headings are provided in English and French. The MARC coding behind this
display is complex, as in the following figure. The parallel titles are traced as 246, 3-1; an alternative title for all four is traced as 246 3-3, as many patrons search for annual reports by the name of the reporting group in the title field. Non-repeatable fields contain parallel information. Notes, being repeatable, are put in separate fields for each language in order to simplify reading:

(continued in next figure)
5. Serial Titles with Alternative Title Tracings

Particularly complex are open serial records, which may have to record variants both in language content and in title translations from year to year, problems which are typical for annual reports, as in the following example:
(continued in next figure)
This record is for an annual report issued by a government corporation. The corporation is traced in all four languages as author/added author. Parallel titles are provided and traced for Inuktitut, Inuinnaqtun and French. As the format has not been consistent, notes are added with regard to the language of publication, in English, French and Inuktitut. Subject headings are provided in English and French. This record is quite typical of the state of serial publications in Nunavut; many bodies must issue annual reports and struggle with the language combinations in which to issue them, occasionally affected as well by availability of translation service. Such records get revised frequently as subsequent years are added.

Variations in the Inuktitut title are indicated by a “title varies” note but not displayed. They can be seen in the MARC coding of the variant titles in the following figure:
6. Authority Records

(a) Cross-Referenced Authority Files for Corporate Bodies

An example of personal name cross-referenced authority files was given in section 4.5 of the dissertation. In the following example, one can see the same principles applied to a corporate body, in this case the GN’s Department of Culture, Language, Elders and Youth, widely referred to as CLEY.

A search for the department in English at LLN yields the following screen. Note that most of the government departments and divisions have a + indicating cross-references, as almost all government publications are issued in at least two, if not more, languages:
Browse Screen for Nunavut. Department of Culture, Language, Elders and Youth

Clicking on the department name produces the following cross-reference screen:
One is then able to view items linked to any language version of the department name. Behind the cross-reference screen lie the following authority records:

**English authority:**

![MARC Editor - Legislative Library of Nunavut](image)

The commonly used acronym is treated as a “see from” cross-reference in the English record.

**French authority:**

![MARC Editor - Legislative Library of Nunavut](image)

Note the variant French department name translation recorded in 410.
The Inuinnaqtun authority lists quite a large number of variants in translation:

The same is true of the Inuktitut translation:

Anyone who searches for any of the Inuinnaqtun or Inuktitut variants will be directed to the current official department name in that language. All cross-language ("see also") references are only to the authoritative name in that language.
(b) Cross-Referenced Subject Authority for Place

Someone looking for Iqaluit, Nunavut’s capital, as a subject, will pull up the following in English. Note that although Iqaluit has a cross-reference, the place with subdivisions does not as these subdivisions have not been translated into Inuktitut as yet:

![Search Screen Results for Subject: Iqaluit](image)

Clicking on the cross reference will bring up the following screen:
Behind this would be the English and Inuktitut authority files:
“Inuit qaujimajatunqangit” is the current Nunavut government buzzword for Inuit traditional knowledge. The term has some variants in Inuktitut, which are also used in English. The LLN has established the most frequently-used form of the term in its catalogue as a subject heading, with an indication of variants not used also in both English and Inuktitut. For example, a searcher might come up with the following subject screen:

If the searcher selects “Inuit qajimanitunqangit,” a common variant, the follow message will be given:
Selecting the preferred term yields the following:

No titles are available for this term. Related terms are:

29 Inuit qaujimajatuqangit.

Related terms are:

28 Áísë (Ilulissat).
Works in both Inuktitut and English can then be found through this screen. The authority files behind this display are as follows:

Where there is a cross-reference for “Inuit qaujimajatuqangit” with a subheading, that means the subheading has been established for both English and French under the main heading, using LC and RVM standard subdivisions, so that even local terms are constructed in accordance with the existing approved thesauri as much as possible.

It would appear these principles can be extended to the creation of cross-referenced subject authority files when Inuit language subject thesauri are developed.
Appendix F: Case Study OPAC User Questionnaire and Summary Discussion

Questionnaire Introduction:
This questionnaire is being conducted as part of a research project on providing services in multiple languages and different scripts in a library catalogue, including Inuktitut syllabics. This research poses no personal risk to you and you do not have to identify yourself personally.

Please take the time to answer the following questions after you have used the library’s catalogue. Your responses will help to identify areas in which service may need to be changed or improved.

General data:

1. What is your age? Please tick one box.

- [ ] under 18
- [ ] 18-25
- [ ] 26-30
- [ ] 31-50
- [ ] 51-65
- [ ] Over 65

2. What is your gender? Please tick one box.

- [ ] Female
- [ ] Male

3. What level of education have you reached? Please tick the highest level completed.

- [ ] Up to grade 8
- [ ] Some high school
- [ ] High school diploma
- [ ] College diploma or trades certificate
- [ ] University degree (BA, BSc, etc.)
- [ ] University post-graduate degree (Master’s, PhD)

Language data:

4. Which of the following languages do you speak at home? Please rank in order of importance, with 1 for most important and 5 for least important.

- [ ] Inuktitut
- [ ] Inuinnaqtun
- [ ] English
5. Which of the following languages do you speak at work or school? Please rank in order of importance, with 1 for most important and 5 for least important.

- [ ] Inuktitut
- [ ] Inuinnaqtun
- [ ] English
- [ ] French
- [ ] Other: Please identify ______________________________________________

6. Which of the following languages do you read? Please rank in order of importance, with 1 for most important and 5 for least important.

- [ ] Inuktitut
- [ ] Inuinnaqtun
- [ ] English
- [ ] French
- [ ] Other: Please identify ______________________________________________

7. Which of the following languages do you write? Please rank in order of importance, with 1 for most important and 5 for least important.

- [ ] Inuktitut
- [ ] Inuinnaqtun
- [ ] English
- [ ] French
- [ ] Other: Please identify ______________________________________________

8. Can you type or enter data in a computer in Inuktitut syllabics? Please tick one box.

- [ ] Yes, but slowly
- [ ] Yes, easily
- [ ] No

**Catalogue use information:**

9. Which of the following languages do you use to search the library catalogue? Please rank in order of importance, with 1 for most important and 4 for least important.

- [ ] Inuktitut
- [ ] Inuinnaqtun
- [ ] English
- [ ] French

10. Do you use the library to obtain materials in languages other than English?

- [ ] Yes
- [ ] No
11. If you answered “yes” to the previous question, which languages do you use? Please rank in order of frequency, with 1 for most frequent and 4 for least frequent.

- [ ] Inuktitut
- [ ] Inuinnaqtun
- [ ] English
- [ ] French

12. Do you know that items can be searched for in syllabics in the Nunavut Libraries Online catalogue?

- [ ] Yes
- [ ] No

13. Do the library staff help you find things in the catalogue?

- [ ] Always
- [ ] Sometimes
- [ ] Never

14. Do the library staff help you find Inuktitut syllabic material?

- [ ] Always
- [ ] Sometimes
- [ ] Never

15. Does it help you when Inuktitut material in the catalogue appears in Inuktitut syllabics?

- [ ] Always
- [ ] Sometimes
- [ ] Never

16. Does it help you if Inuktitut materials are translated into English in the catalogue?

- [ ] Always
- [ ] Sometimes
- [ ] Never

17. Do you find it helpful if an author’s name is listed in the catalogue both in English and in Inuktitut syllabics?

- [ ] Always
- [ ] Sometimes
- [ ] Never

18. Do you want to search for subjects in Inuktitut?

- [ ] Always
- [ ] Sometimes
- [ ] Never
19. Do you feel you can find the information you are looking for, in the language that you want?

☐ Always
☐ Sometimes
☐ Never

**Access data:**

20. Do you use the library catalogue in the library?

☐ Yes
☐ No

21. Do you use the library catalogue on the Internet?

☐ Yes
☐ No

22. If you do use the catalogue on the Internet, are you accessing it from home?

☐ Yes
☐ No

23. If you do use the catalogue on the Internet, are you accessing it from work or school?

☐ Yes
☐ No

24. If you are using the catalogue from home on your own computer, do you have syllabics installed on your computer?

☐ Yes
☐ No

25. If you are using the catalogue from home and do **not** have syllabics installed, does it bother you if you can’t see the syllabics properly on the screen?

☐ Yes
☐ No

26. If you use the catalogue on the Internet, how did you find the catalogue’s website? Please tick all that apply.

☐ From library staff
☐ From library advertising
☐ Somebody told me about it
☐ Google or another search engine
27. Have you told anyone else about the online catalogue?

☐ Yes
☐ No

This completes the questionnaire. Thank you for your help with this project.

Summary Discussion

The questionnaire was distributed to the various library systems and also promoted in the Nunavut Library Association’s newsletter. One response was received by mail; another 10 were collected by the Legislative Librarian and NAC library staff. No response was received through NCJLL or NPLS; however, the Iqaluit Centennial Library, which would be the single largest-use public library site, was unable to administer the questionnaire due to turnover in library staff.

Given the limited number of responses, they cannot be analysed with any statistical reliability. However, certain trends were apparent.

All respondents were between 18 and 65; most were between 26 and 50, reflecting the patron set of the College and Legislative libraries. Respondents were overwhelmingly female (10 to 1). All had at least a high-school diploma; 5 had post-graduate degrees, reflecting the fact that the NAC and LLN catalogues are frequently used by researchers whether living in or simply researching in the Arctic.

English was the overwhelming first language of use (9 for speaking at home and work, 10 for reading and writing), with 2 indicating Inuktitut (one of whom also put English as #1) and one indicating French as their spoken language of preference. Inuktitut and English came second in preference (Inuktitut for the English speakers, and English for the French speaker). No one responding to the questionnaire used Inuinnaqtun as a primary language, although one person read and wrote it at work with a low ranking. This is not surprising, given that many Inuit are unfamiliar with libraries; unless the community school is equipped with one, several communities in Nunavut in fact have no library at all and people do not encounter them unless they go away for higher education.
5 respondents felt they could type in syllabics, slowly; 2 easily; and 4 not at all. This would reflect the fact that many professionals in Nunavut have not learned Inuktitut and do not currently require the use of syllabics to function in the workplace or educational institution. Naturally, those who cannot type in syllabics are unlikely to use them for searching.

The language of searching in the catalogue reflected almost exactly the distribution of language as spoken in the home and workplace. This is, again, not surprising. Those most comfortable with searching library catalogues are those who are familiar with them, and as Inuktitut syllabics have never appeared in any catalogues that consortium members have been able to find, Inuit would have very little experience in conducting searches in syllabics except perhaps through an Internet search engine such as Google™.

The respondents were divided roughly in half as to whether they used the catalogue to search in languages other than English or not. Those who did were evenly distributed amongst the various other languages.

The majority of respondents were aware that it was possible to search the catalogue in syllabics (7 to 4). Only 2 respondents never obtained help from library staff in conducting searches. However, this assistance was in the majority of cases not provided for searching in syllabics.

Only 3 of the respondents found it never helpful to find materials in syllabics, so there would appear to be demand for this information. Everyone found it sometimes (6) or always (4) helpful for Inuktitut material to be translated or cross-referenced in English, likely reflecting the predominantly anglophone user base in this survey. Most respondents found it "sometimes" useful to have author names and subject headings in syllabics. Respondents were divided evenly between “always” and “sometimes” as to whether they found the material they wanted in the language they wanted; no-one answered “never” to this question, which would indicate at least some measure of success in the catalogue’s representation of materials.
Methods of access were firstly, over the Internet through the iPortal (all respondents) and then secondly from within a library (9). Respondents were again divided evenly in accessing the Internet portal from home, but all accessed it from work or school over the Internet. Of those who accessed from home, half did and half did not have syllabics installed on their home computers, and were equally divided as to whether an inability to see the syllabics caused them any difficulty or concern. Again, this would likely reflect the relatively low numbers of fluent Inuktitut users at present.

In terms of publicising the catalogue, 9 were pointed to it by library staff; 1 had seen library advertising; 2 had also heard by word of mouth, and 1 had found it through an Internet search engine. Clearly, at present most people are introduced to the catalogue through library staff, and perhaps greater efforts could be made to publicise its availability outside the library environment. Word of mouth is also good publicity; 9 of the respondents had told someone else about the catalogue.

It would appear that all of the library systems need to do some outreach work to make the unique information held in their databases available to the general public. The NAC Library Manager felt that more work could be done by them, for example, within the College in educating students in how to use the catalogue and its capacities, and could do more promotion work. One Inuktitut-speaking respondent also added as a comment that it would help to have workstations set up in syllabics to promote use of the catalogue in Inuktitut, and clearly the search interfaces need to be available in other languages for people to engage in other language searches. The content is increasingly there, but the needed framework and tools are missing.
Appendix G: Inuktitut Cataloguing Terminology from the Nunavut Department of Culture, Languages, Elders and Youth

The following spreadsheet was prepared as the outcome of a cataloguing terminology workshop held 24 April 2006, with participation from a CLEY translation panel, Inuit elders, Nunavut Arctic College library services, Legislative Library of Nunavut, Nunavut Court of Justice Law Library, and Nunavut Public Library Services.

Please note: the installation of Pigiarniq or another Unicode Inuktitut font is needed to view the Inuktitut column correctly in electronic copy. A copy of this font can be supplied if required.

<table>
<thead>
<tr>
<th>English</th>
<th>Inuktitut</th>
<th>Inuinnaqtun</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Videorecording</td>
<td>ᑲᖅᓴᓕᒃ (ᓗᕆᒃᔨᑦ)</td>
<td>Piksasuuliquhimayut</td>
</tr>
<tr>
<td>2 Sound recording</td>
<td>ᓲᓐᓇᑖᖅ (ᓗᕆᒃᔨᑦ)</td>
<td>Nipiliuqhimayut</td>
</tr>
<tr>
<td>3 Electronic resource (i.e. computer file of some type or internet site)</td>
<td>ᓴᔭᖅᐸᓴᖅ (ᑐᖅᑖᖅ)</td>
<td>Qaritauyumakut</td>
</tr>
<tr>
<td>4 Text</td>
<td>ᓴᒃᔨᑦ</td>
<td>Titiqqat</td>
</tr>
<tr>
<td>5 Text, Large print</td>
<td>ᓲᔨᕐᓂᒃ ᓴᒃᔨᑦ</td>
<td>Titiraq, Angayukhiq</td>
</tr>
<tr>
<td>6 Cartographic material (i.e. a map of some type)</td>
<td>ᓱᔨᒃᑦ</td>
<td>Nunaualiuqhimayuq</td>
</tr>
<tr>
<td>7 Kit (i.e. more than one type of material, such as a book + CD)</td>
<td>ᓱᔨᕐᓂᒃ ᓴᔭᖅᐸᓴᖅ (ᑐᖅᑖᖅ)</td>
<td>Katitiqhimayut</td>
</tr>
<tr>
<td>8 Manuscript (i.e. a handwritten item, not typeset or printed)</td>
<td>ᓵᑎᕙᓯᓂᒃ (ᓗᕆᒃᔨᑦ)</td>
<td>Aggamut</td>
</tr>
<tr>
<td>9 Microform</td>
<td>ᓴᒃᔨᑦ ᓲᔨᕐᓂᒃ (ᓗᕆᒃᔨᑦ)</td>
<td>Piksatauyagaq</td>
</tr>
<tr>
<td>10 Picture (for artwork)</td>
<td>ᓴᒃᔨᑦ ᓲᔨᕐᓂᒃ (ᓗᕆᒃᔨᑦ)</td>
<td>Hanauqyajimayuq</td>
</tr>
<tr>
<td>11 Terms used in the edition area (MARC tag 250):</td>
<td>ᓴᔭᖓᑦ ᓴᔭᖅ (ᓗᕆᒃᔨᑦ)</td>
<td>Taiguuhiit</td>
</tr>
</tbody>
</table>

Makpiraaq Qaritauyaliqitjutilu

(Numikiqhimaittuq Tarraliuqhimaitturlu)

Hanauqyajimayuq

(Hanqiyaqyajimayuq)

Makpiraaq Qaritauyaliqitjutilu

(Numikiqhimaittuq Tarraliuqhimaitturlu)
<table>
<thead>
<tr>
<th></th>
<th>Revised edition (i.e. the same book but with some changes made)</th>
<th>_terms used in the publication information area (MARC tag 260):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Revised edition (i.e. the same book but with some changes made)</td>
<td>Terms used in the publication information area (MARC tag 260):</td>
<td>Ihaughaqtuaimayuq Makpiraaq (Makpiraaq titiraqhimayuq kihiani ihuqhiyuhimayuq)</td>
</tr>
<tr>
<td>13</td>
<td>Updated edition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>2nd, 3rd, 4th edition (etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Terms used in the publication information area (MARC tag 260):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>S.l. (i.e. Sine loco = no place of publication given in the item)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>S.n. (i.e. Sine nomine = no name of a publisher is given in the item)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Terms used in the physical description of the item area (MARC tag 300)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Videocassette</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Videodisc (DVD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Film reel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Sound disc (CD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Sound cassette (Audiocassette)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Computer laser optical disc (or CD-ROM)</td>
<td></td>
<td>ROM = Read only Memory</td>
</tr>
<tr>
<td>25</td>
<td>Computer disk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Digital (type of recording)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Analog (type of recording)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Stereo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Mono (one-channel sound)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>sd., col. (i.e. with sound, in colour, to describe a video)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>b&amp;w (i.e. black and white, to describe a video or film)</td>
<td></td>
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<tr>
<td>Term</td>
<td>Description</td>
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<tr>
<td>v.</td>
<td>(volume—used when a single title has more than one volume, e.g. an encyclopaedia, or when the item is a serial, and is published one volume at a time but with different numbers of pages each time)</td>
<td></td>
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<tr>
<td>p.</td>
<td>(pages)</td>
<td></td>
<td></td>
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<tr>
<td>leaves</td>
<td>(when pages are printed on one side only or are not numbered)</td>
<td></td>
<td></td>
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<tr>
<td>ill.</td>
<td>(illustrations) or col. ill. (colour illustrations)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>all ill.</td>
<td>(when a book is all pictures, no text)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>chiefly ill.</td>
<td>(when a book is mostly pictures but has a little bit of text explaining the pictures)</td>
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<tr>
<td>maps</td>
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<tr>
<td>tables</td>
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<tr>
<td>diagrams</td>
<td></td>
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<tr>
<td>portraits</td>
<td>(photographs of people)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>centimetres</td>
<td>(for size of item)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>inches</td>
<td>(for standard videotape widths, eg. ¾ in.)</td>
<td></td>
<td></td>
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<tr>
<td>Terms used in the serial frequency area (MARC tag 310)</td>
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<td></td>
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<tr>
<td>Frequency: Annual</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(or) Quarterly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(or) Monthly</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(or) Weekly</td>
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<td></td>
<td></td>
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<tr>
<td>(or) Irregular</td>
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<tr>
<td>Terms used in the notes areas (MARC 500+ tags)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Title taken from the cover / cover title</td>
<td>ᐊᑎᖓ ᐉᖃᓕᒫᒐᐅᑉ ᐅᖄᖓᓃᑦᑐᖅ</td>
<td></td>
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<tr>
<td>---</td>
<td>----------------------------------------</td>
<td>--------------------------------</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Title from disc label (for computer items)</td>
<td>ᐊᑎᖓ ᐅᑯᓐᓂᖅᑑᑉ ᐅᖄᖓᓃᑦᑐᖅ</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Cover (note used when quoting the cover as a source of information, e.g. “May 2005” – cover)</td>
<td>ᐱᓕᕈᑎᒃ</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>t.p. (i.e. title page—The title page is the first main page giving the publication information. The abbreviation is used when quoting information from the title page in the record, eg. “May 2005” – t.p.)</td>
<td>ᐃᓚᐃᒃᑯᑎᑐᑦ ᐅᖄᓛᓂᖅ ᐊᒐᒃᑕᐅᔪᒐᒃ ᐱᓕᕈᑎᒃ</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>t.p. verso (i.e. the back side of the title page)</td>
<td>ᐃᓚᐃᒃᑯᑎᑐᑦ ᐅᖄᓛᓂᖅ ᐊᒐᒃᑕᐅᔪᒐᒃ ᐊᓪᓗᐊᓂ</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>c.f. (i.e. “refer to” -- a Latin abbreviation used to indicate the source of information in an item. E.g. after a summary note, “C.f. introduction”)</td>
<td>ᐃᔨᔪᖅᑕᐅᓯᒪᔪᑦ ᐊᒐᒃᑕᐅᔪᒐᒃ</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>Foreword</td>
<td>ᐱᔭᕐᖃᓪᓗᓂᒃ ᖃᐅᔨᒋᐊᕈᑦ</td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>Introduction</td>
<td>ᖃᐅᔨᒋᐊᕈᑦ</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Executive summary</td>
<td>ᐃᓚᐃᒃᑯᑎᑐᑦ ᐅᖄᓛᓂᖅ</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Abstract (i.e. a short summary of the item)</td>
<td>ᐃᓚᐃᒃᑯᑎᑐᑦ ᐅᖄᓛᓂᖅ ᐃᓄᐃᓐᓇᖅᑐᓪᓗ ᑲᑎᒥᑦ</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Report year ends [month, date]</td>
<td>ᐊᒐᒃᑕᐅᔪᒐᒃ ᐃᓄᒃᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Supersedes [title] (i.e. a new title or organization has replaced one that went before)</td>
<td>ᐃᓚᐃᒃᑯᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Superseded by [title] (i.e. no longer published and replaced by another title)</td>
<td>ᐃᓚᐃᒃᑯᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Text in English and Inuktitut on inverted pages</td>
<td>ᐃᒃᑲᓂᒃ ᐃᒃᑲᓂᒃ ᐅᖄᓛᓂᖅ ᐊᒐᒃᑕᐅᔪᒐᒃ</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>(or) Text in English and Inuinnaqtun on inverted pages</td>
<td>ᐃᒃᑲᓂᒃ ᐃᒃᑲᓂᒃ ᐅᖄᓛᓂᖅ ᐊᒐᒃᑕᐅᔪᒐᒃ</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>(or) Text in Inuktitut and Inuinnaqtun on inverted pages</td>
<td>ᐃᒃᑲᓂᒃ ᐃᒃᑲᓂᒃ ᐅᖄᓛᓂᖅ ᐊᒐᒃᑕᐅᔪᒐᒃ</td>
<td></td>
</tr>
<tr>
<td>Page</td>
<td>Description</td>
<td>Language(s)</td>
<td></td>
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<tr>
<td>------</td>
<td>-------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Text in English, Inuktitut, Inuinnaqtun and French</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>Text in Inuktitut roman orthography (for some Labradoriniut items)</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>Includes executive summary in [languages]</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Includes abstract in [languages]</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Separate files in [languages] (for computer resources—e.g. a CD-ROM that has the same files in both English and Inuktitut)</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>Video presentations in [languages] (for video/DVD/computer items)</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>73</td>
<td>In [language] with [language] subtitles (for videos etc.; i.e. you hear the speaker in the original language and the other language is translated in text on the screen)</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>Dubbed into [language] (when the sound track in one language is replaced by another language)</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>Closed-captioned (for hearing-impaired people)</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>Credits in [language/s]</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>77</td>
<td>Includes bibliography (list of books or resources consulted)</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>78</td>
<td>Includes bibliographical references (notes as well as a bibliography at the end)</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>Includes bibliographical references and Internet addresses</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Includes bibliography and index</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Includes index</td>
<td>ᐃᓄᒃᑎᑐᑦ, ᐃᓄᐃᓐᓇᖅᑐᓪᓗᖃᓪᓗᓈᑎᑐᑦ</td>
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<td>---</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
| 82 | Includes indexes (if there is more than one)  
\[\Delta C_b^{a_c \zeta_{\eta_{\delta}}^{\zeta_{\eta_{\delta}}}} \ L_b^{\lambda_{\Delta_c}} \ a_c^{a_b \beta_{\gamma_b}}^{a_b \beta_{\gamma_b}} \] |
| 83 | Also issued in English under title:  
\[b^a_{b^a} \ \Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 84 | (or) Also issued in Inuktitut under title:  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 85 | (or) Also issued in Inuinnaqtun under title:  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 86 | Translation of: [original title]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 87 | Titles vary in Inuktitut  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 88 | (or) Titles vary in Inuinnaqtun  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 89 | (or) Titles vary in English  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 90 | (or) Titles vary in French  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 91 | At head of title (i.e. there is a name or phrase displayed on the title page before the true title)  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 92 | Some issues have unique subtitle (e.g. an annual report may have a descriptive title beside the words "Annual report," and these may not be the same from year to year)  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 93 | Cataloguing based on [year]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 94 | Published in collaboration with [Organization names to follow]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 95 | Also available on the Internet  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 96 | Also issued on CD-ROM  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 97 | Also issued in print  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 98 | Additional terms  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 99 | Title  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 100 | See also  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 101 | Library has  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 102 | Accompanied by  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 103 | Contents  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 104 | Series  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \]  
\[\Delta_{\Lambda_{\eta_{\delta}}}^{a_c \zeta_{\eta_{\delta}}} \ a_{\sigma_b \delta_{a_b}}^{a_b \gamma_{a_b}} \] |
| 108 | Call number | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 109 | Keyword | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 110 | Subject heading | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 111 | Spine label | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 112 | Bar code | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 113 | Fiction | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 114 | Nonfiction | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 115 | Reference | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 116 | Book | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 117 | Serial | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 118 | Journal (magazine) | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 119 | Looseleaf | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 120 | Signed out | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 121 | Date Due | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 122 | Catalogue | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 123 | Library | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |
| 124 | Search | ᐅᓗᓇᐃᒃᑯᑕ C. 1994 |

(Department of CLEY 2006)
Appendix H: Excerpt from Nunavut Legislative Library Multilingual Record Cataloguing Policy

This document is updated as different kinds of materials are catalogued at the Nunavut Legislative Library. Consult AACR2 and MARC 21 as required.

POLICY:

The following policies are applied at the Nunavut Legislative Library for records in languages other than English and for multilingual items:

1. A title should be catalogued in the language in which it appears. The bibliographic data for an English title should be entirely in English and the bibliographic data for an Inuktitut title should be entirely in Inuktitut. The same applies to all languages, including French and Innuinaqtun.

2. For items that contain more than one language, create one record using parallel titles and containing all the bibliographic information. We do not create separate records for each language version. Bibliographic data will be entered first in English as the primary language of the cataloguing agency, but parallel tags should be created for the other languages wherever feasible (e.g. title added entries, author added entries for syllabic vs roman spelling or other language names of corporate bodies, other language subject headings, language notes).

3. Special procedures are in place for handling Inuktitut records in syllabics, as an established Inuktitut subject heading thesaurus is not yet available. These are detailed at the end of this section.

1. General Cataloguing Principles for Records in Languages other than English

MARC Tags to include:

In addition to the normal, standard MARC tags used in all Legislative Library catalogue records, multilingual records or records of translations may require some or all of these additional tags or notes:

008 Control Fields, positions 35-37, Language

The default language for all records created by the system is English. The language code in the leader field, 008, needs to be changed only if the record is for an item entirely in another language, e.g. French or Inuktitut, or is multilingual.

Click on the 008 field in the MARC record editor, and a button box will appear with the various fields to edit. Select the language box, and choose the appropriate language from the drop-down list. For multilingual items, the language identifier “Multiple languages”
should be selected. Prior to January, 2008, our multilingual records kept “English” in this box as the main language of cataloguing records; this field can be corrected to “multiple languages” retrospectively when encountered.

**041 Language Code**

$\text{a}$ Language code of text/sound track or separate title  
$\text{b}$ Language code of summary or abstract  
$\text{h}$ Language code of original and/or intermediate translations of text

Use 041 to indicate translations into English from other languages, or to indicate a record that contains more than one language. Check the MARC manual for appropriate indicators.

E.g.:  
041 $\text{a eng}$ $\text{h dan}$ For an item translated from Danish into English  
041 $\text{a iku}$ $\text{h fre}$ For an item translated from French into Inuktitut  
041 $\text{a engfreikuinu}$ For an item in four languages, no language given predominance – list in English alphabetical order  
041 $\text{a ikuinuengfre}$ For an item in Nunavut’s official languages, given in order of predominance in the publication.  
041 $\text{a eng}$ $\text{b iku}$ For an item written in English with an Inuktitut executive summary

Commonly used language codes (LC approved):

English: eng  
Inuktitut: iku  
Inuinnaqtun: inu  
French: fre  
Danish: dan

[...]

**245 Title and statement of responsibility**

If the 245 field is for a bilingual or multilingual item and contains a =$\text{b}$ parallel title, the parallel title or titles should also be entered in field 246 so the system will trace the parallel title as well. The second indicator should be 1 for Parallel title.

E.g.  
245 00 $\text{a Constructing tomorrow’s federalism}$ =$\text{b Bâtir le fédéralisme de demain}$  
246 31 $\text{a Bâtir le fédéralisme de demain}$

If the item is in multiple languages, enter a parallel title preceded by = for every language. $\text{b}$ precedes only the first parallel title. Enter a separate 246 for the title in each other language.
If the 245 field is the title of a translation, and the original language title is known or available, also add a 130 or 240 uniform title with a language subfield, $l. This way no note or other tracing is needed for the title in its original language.

E.g.:
For a title main entry:
130 00 $a Qilakitsoq. $l English.
245 04 $a The Greenland mummies /$c edited by …. 

For an author main entry:
240 10 $a Quel Canada pour les autochtones? $l English.
245 10 $a Justice for Canada’s original peoples / $c Renée Dupuis ; translated by …. 

**500 Notes**

Field 500, General notes, is frequently used for many notes pertaining to language, other language editions, etc. This is acceptable. However, 546 is a specific field used for language notes. The Legislative Library OPAC will show 546 notes, so this field is preferable to use for notes pertaining to languages and related formats.

Where possible, a language note should be repeated in the other language of the publication; e.g. “Text in English and French” with a second note, “Texte en anglais et en français”; or “Text in English and Inuktitut” with a second note, “foregroundColor=‘#000000’”

Typical notes and formats would be:

*For a text in multiple languages throughout:*

546 00 $a Text in [language], [language] and [language] in [format]  
E.g.:  
546 00 $a Text in English, French and Inuktitut in parallel columns

*For a bilingual publication in flip format:*

546 00 $a Text in [language] and [2nd language] on inverted pages.  
E.g.:  
546 00 $a Text in English and Inuktitut on inverted pages.

*For simultaneous issue of an item in multiple languages under separate cover for each language (not for translations of an original), use a general note:*

500 $a Also issued in [language] under the title: [other language title]

In such cases, if the library holds a copy of each version, a separate record would be created for each language, with cross-referenced 500 notes. Also add a 740 Title added
entry for the other language titles, so that if the title in another language is entered, all of
the related language titles will come up in a search for cross-referencing. If the library
does NOT hold a copy of the other version or versions, no additional tracing records or
fields are required; it becomes simply an information note.

E.g. For an English title:

500 00 $a Also issued in Inuinnaqtun under the title: Kangikhiteagumaven?
740 00 $a Kangikhiteagumaven?

Then, if anyone types in a title search for Kangikhiteagumaven, both the Inuinnaqtun and
the English records will come up in the search results list.

[…]

2. Cataloguing for Records in Inuktutut Syllabics

Policy:

As authoritative subject headings have not yet been established in Inuktutut, the process
of transferring records from English to syllabics is being done in stages.

With the ability to input syllabics in Virtua, syllabics can be incorporated into existing
records. The GN translation service, in collaboration with the Nunavut libraries using the
Virtua system, has established an initial list of library and bibliographic terms in Inuktutut
syllabics for use in bibliographic description and notes. The library will attempt to record
as much information as possible from the item itself and from the standardized
terminology list in syllabics. However, it will remain necessary to keep track of records
that still require Inuktutut subject headings or translation of non-standardized notes.

Procedures:

1. Review files:
For an item previously catalogued in English, remove the corresponding item record from
the file of “Inuktutut Item Records” or “Records that Need Inuktutut Input (bilingual).”
For new items to be catalogued in Inuktutut, begin with step 2.

2. Input syllabics:
From the item in hand, input all possible fields where syllabics are required. Normally, at
least, this would include:

- 100, 110, 111 author (if Inuktutut only record)
- 245 title, 246 parallel title tracings
- 260 publication information (place, publisher)
- 300 physical description (use terminology list)
• 500 Where terminology is established, notes or descriptions can also be added (use terminology list)
• 700, 710, 711 any added author/s (including organizations and government departments)

The default font for the Virtua client is Tahoma, which only shows syllabics as boxes. If the font is switched to one of the unicode fonts (e.g. Pigiarniq, Uqammaq) the fonts will become visible and will also print properly.

Special cataloguing notes:

a) Author fields:
Because there are many variants in Inuktitut translation, the names of departments or organizations are not always consistent in syllabics. If so, transcribe the name as it is printed on the item in the statement of responsibility, but use any established authority file as the source of the name to be traced as author, added author or subject.

b) Additional titles:
Likewise, a serial item may have one title in English (e.g. “annual report”) but a number of different translations of “annual report” into Inuktitut for different issues. Judgement has to be exercised as to which version forms the title proper (usually either the first, or one that is clearly established for several issues running in the same format). All other variants should be traced in MARC 246 33 (ie. “other title”), so that someone looking for any particular variation will be able to find the item. These are traced in a title search but do not show up in the bibliographic display.

3. Uniform title:
If the item is issued separately in English and Inuktitut, since the language of the agency is English, create a 240 (uniform title entry) for the English title with $lInuktitut. This will allow people searching in English to see that there is an Inuktitut syllabic version and they can click on that title to bring up the syllabic record.

4. Track the record:
Print the MARC record with the syllabics incorporated. If the item had previously been catalogued in English, attach to the original printout of the MARC record from the file. Move to the file labelled “Inuktitut / Inuinnaqtun SH required.” If there are fields other than subject headings that still require translation, keep in the original file for records requiring Inuktitut input for notes & SH.

5. Update authority files:
When the record has been saved with syllabics in it, check any authority files that may need updating or cross-referencing in multiple languages, especially for authors and organizations. This may include variant forms of names added to authority records as 400 or 410 entries, so that if someone searches under the variant, they will be referred to the form of the name in established usage. Where an item is issued in both English and Inuktitut, a cross-referenced name authority needs to be established for the author in both English and syllabics so that the item can be found either way. Update as required.

(Nunavut Legislative Library 2008 Excerpted from pp. 1-6)
Appendix I: Compatibility of Nunavut Practice with *RDA Objectives and Principles*

The objectives of RDA have evolved in an international context based on the new IFLA cataloguing principles and seem to be more easily applied to cataloguing items in many languages, not just the original English of the AACR world. Some of the *Objectives and Principles* currently issued for RDA by the JSC (Joint Steering Committee for Development of RDA 2007) have specific relevance to the language issues being faced by the Nunavut consortium.

For example, the third objective listed, “Flexibility: Data should function independent of format, medium or system” (JSC 2007 p. 4) is one developed specifically to respond to technological development and the burgeoning number of new formats and media for which library patrons may be searching. Nunavut libraries are currently meeting this objective by using MARC 21 as coding for library data metadata, as it is widely accepted by most commercial systems now and is essentially language-neutral; a 245 tag does not care whether its content is French or Inuktitut. NAC had to migrate to the new ILS from a non-MARC catalogue, and this has led to extensive reworking of older records in order to bring them up to standard. Although other metadata systems are being promoted and developed, MARC 21 is a solid and evolving tool.

As well, Unicode character sets are being used for transferability of scripts and fonts. Within the Virtua system, one can use any Inuktitut font of one’s choice for display, as long as it is Unicode-based, whether Ballymun, Pigiarniq, NunacomU or Uqammaq, for example. Exporting from this system to another will, of course, depend on the other system’s capacity to accept Unicode, which is why Nunavut records can’t be exported to AMICUS as yet, but they should be compatible with any other Unicode-compliant system.

Some of the specific principles for attaining these objectives being enunciated by IFLA and by the JSC are also particularly relevant. For example, RDA’s third principle, “Relationships: Data should indicate significant relationships between a resource and other resources” (JSC 2007 p. 4) clearly reflects the FRBR approach of describing manifestations and expressions of a particular work. This can be particularly significant in a multilingual jurisdiction for tracing or linking translations, where the same item can be issued separately in several different languages. Thus LLN and NAC both make a
practice of noting whether an item is issued in another language version, and tracing such.

Similarly, the principle of “Language preference: Any name or form of name should be in the form found in the original language and script of the work” (JSC 2007 p. 5) is closely adhered to by these libraries. Thus an Inuktitut name translated into English for an English edition appears in English, not syllabics. Likewise an English name rendered in syllabics for an Inuktitut translation will be catalogued in syllabics —this is where authority files cross-referencing languages or scripts become critical. This principle is significantly changed from the current AACR2R preference for romanisation and English usage, and is much more user-friendly for non-English speakers.