

**DEVELOPMENT OF AN INTEGRATED BILINGUAL THESAURUS IN
GERONTOLOGY AND GERIATRICS.**

John E. LEIDE

Graduate School of Library and Information Studies (McGill)

3459 McTavish Street, Montreal, Qc H3A 1Y1

(514) 398-4204 internet: INNLMUSICB.MCGILL.CA

Paule LEBEL

Centre Hospitalier Côte-des-Neiges (CHCN)

4564, chemin de la Reine Marie, Montréal, Qc

Camille CÔTÉ

(McGill)

Louise BOURBONNAIS

(CHCN)

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Increasing longevity is having a definite impact on our health care systems. An increasing number of people are over age sixty, and the elderly are becoming a larger and larger proportion of the population. The needs of this group are being reflected in an increase in the amount of information being produced to support research and services.

The explosion of information seems to be a general phenomenon which promises researchers potential access to a multitude of documents, but the proliferation of publications often inhibits access to the information they contain. The myriad potential sources make effective storage and retrieval systems imperative, because it is often extremely difficult to know exactly how documents have been indexed. This is particularly true in the field of gerontology and geriatrics. Recently, there has developed an increasing interest in instruments that can help researchers in their search for information. Vocabulary control and syndetic networks facilitated by thesauri are mechanisms which can improve the indexing of documents and the retrieval of information.

Historically, geriatrics, which deals with medical aspects of aging, and gerontology, which has concentrated on sociological factors in the study of and services for the aged, have more often than not functioned independently as two separate domains of knowledge. Within the past decade, however, there has been a trend toward a rapprochement and integration of medical and social components in research and services for the elderly. This holistic approach requires an transdisciplinary access to information and a rationalization of the

terminologies of the separate fields to meet the needs of the emerging discipline of gerontology and geriatrics. A controlled vocabulary which integrates terms and clarifies concepts used in medicine, health care, and social services is needed to meet the needs of researchers, care givers, and students as well as libraries and the general public.

An integrated terminology base will identify single-concept terms and synonyms, and distinguish meanings of multi-concept terms. Within the Canadian context, it is necessary to provide vocabulary control in both French and English. The linguistic factor is further complicated by the national and regional variations in term use. Canada stands in the crossroads of British and American English and North American and Continental French.

The objectives of this research are:

- 1) to attempt the systematization of terminology used in the domains of gerontology and geriatrics in order to facilitate access to documents; and
- 2) to explore methods for representing concepts and relations in the development of a transdisciplinary and bilingual thesaurus following international norms to the extent possible.

The project is being conducted cooperatively at the Centre hospitalier Côte-des-Neiges (CHCN) and McGill University by a team of four researchers: Louise Bourbonnais is the librarian and Paule Lebel is a researcher/physician at the Centre; Camille Côté and John E. Leide are professors at the McGill Graduate School of Library and Information Studies.

Although several thesauri of limited scope exist in each language, there has been no attempt to provide a synthesis of the terminology in the several disciplines in order to meet the current needs of researchers and practitioners. The first step in the development of such a thesaurus must be to develop an integrated terminology base which incorporates terms from as many sources as possible, identifies single-concept terms and synonyms, and distinguishes meanings of multi-concept terms. As in any transdisciplinary environment, there is a potential for terminological conflict. This may occur from differences in the precision of term use as well as the appropriation of generic terms for specific use within the jargon of a field. The integration of terminology from geriatrics and gerontology involves the merging of terms from differing disciplines, some medical/technical and some social/cultural.

Previous work in the development of bilingual thesauri has proceeded from the development of a thesaurus in one language. Once the basic terminology has been selected and the thesaural relationships established, the resulting thesaurus is translated into the other language and any necessary adjustment are made. The process of translation is very difficult, because the choice of equivalent terms is frequently not obvious. Another problem which is perhaps more serious is that the intellectual structures inherent in the primary language become imposed on the terminological structure of the translation.

In an attempt to maintain the integrity of the intellectual structures of each language, this project will proceed to develop two thesauri in parallel, one in French and one in English. The same procedures will be used for each, and

the syndetic structures of each will be determined unilingually. Only then will the terms in the two thesauri be linked to produce a final bilingual product. Thus, the first phase of the project has been to generate two terminology bases each of which integrates the terms of the various information domains of geriatrics and gerontology in its language.

It was clear from the outset that although generic terms would be necessary for the indexing and retrieval of documents in geriatrics and gerontology, these terms must be placed outside the scope of this project if it were to be manageable. A thesaurus in gerontology and geriatrics could be used in conjunction with a general thesaurus. For this reason, certain classes of terms have been automatically excluded: geographic names, chemical compounds, body parts, etc. Similarly, the utility of each term was evaluated in the context of the focus of the thesaurus. All diseases could have been excluded as proper names; however, it was felt that certain diseases are of particular importance and are included. This decision was further justified by the necessity to provide authority control, for many diseases have multiple names which make indexing and retrieval difficult.

The first year of the project was devoted to collection of source documents and the extraction of terms. Existing thesauri and indexes in the fields of gerontology and geriatrics were used as a starting point. The terms thus located have been used to search bibliographical databases to locate relevant articles. The libraries of CHCN, McGill, and other health and social service organisations in Montreal have provided source and reference materials. Articles

have been photocopied and relevant terms extracted. The terms are being entered into a database on a microcomputer to facilitate processing. Several software packages to manage the thesaural structure are being investigated.

The source of each term is recorded in the master database record. Multiple sources of the same term provide a check on the domain of application as well as consensus of term-concept coordination. The source is also a first level check on the geographic scope of the term. Differences in word use in Canada, Quebec, France, the United Kingdom and the United States have been noted as they are discovered and qualifiers will be provided as necessary; in a few instances, special terminology is being used in various provinces, these too have been noted.

Definitions of the terms are being recorded to attempt to clearly identify unique concepts. In keeping with the decision to exclude generic terms, a term with both generic and specific concepts was retained only if one was related to the domain of gerontology and geriatrics. Although several specialized dictionaries and other reference sources are being used, it is sometimes difficult to find definitions for technical terms.

In order to attempt to capture the differing uses of natural language terms and validate the concepts identified by the definitions, a representative citation of the term in context is being recorded in a usage note. A definition alone is often insufficient to indicate the colloquial use of a term and context can be invaluable for a non-francophone as an indication of the gender of the term. These citations will provide justification for determining whether a term

represents a single-concept, since multi-concept terms can be identified from citations indicating differing usages. The contexts should also provide an indication of term preference when differing terms are used for the same concept. The dynamic tension of descriptive vs prescriptive linguistics is unfortunately all too often apparent. A thesaurus by its very nature is prescriptive; it enumerates terms to be used and those from which references should be made. It is, however, clear what a thesaurus with no foundation in actual word use would be unacceptable for both the indexer and the researcher (for this purpose there are classification schemes). Nevertheless, some of the "natural language" in the literature lacks a precision that would have been appreciated by the research team; it is of passing interest that this is not solely a problem in gerontology.

Scope notes are being provided for each concept encompassed by a term. This process will facilitate the identification of synonyms and partial synonyms and determine whether qualifiers or modifiers will be necessary to clearly differentiate multiple uses of the same term.

As the terms have been collected they have been reviewed by a group of local subject specialists in geriatrics, medical ethics, nutrition, psychiatry, psychology and social work, who have assessed the appropriateness of the terms, suggested alternative and related term, and indicated preferred terms from among synonyms. The term lists are still in dynamic flux, but they are moving toward closure. Draft lists have been sent to subject specialists in Canada and Europe for review and comment in order to validate the terms and provide a further

check for differing regional or national usages. Initial responses have been very encouraging. Conceptual analysis and filling lacunae that this analysis revealed is currently in progress.

The two terminology bases will form the input for a second phase to establish thesaural relations within each knowledge base. It is already clear that while the usual thesaural relations of USE-USE FOR, BROADER TERM-NARROWER TERM, and reciprocally RELATED TERMS will be necessary, these probably will not suffice. WHOLE-PART, and CAUSE-EFFECT relationships will surely be required. Additional relations may be added.

The final phase will attempt to link the two thesauri while maintaining the intellectual structures inherent in the two languages. The resulting integrated bilingual thesaurus will support the organization and retrieval of information and facilitate communication within a developing transdisciplinary field by mediating the vocabularies of researchers and practitioners with differing specializations. It is also hoped that the methodology will prove useful for the development of controlled vocabularies in other transdisciplinary areas.

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