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Towards an Understanding of Symbolic Aspects of Professional Information: An Analysis of the Nursing Knowledge Domain

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ABSTRACT: The aim of this article is to contribute to the development of the domain analytical approach by using tools from the theory of professions. This is accomplished by showing how the symbolic values of professional information can create, sustain, and alter professional interests, power relations, and occupational identities. By taking this approach, the importance of considering the issues of power and knowledge use as a social practice is highlighted – two themes that only to a certain extent have been attended to within domain analysis. The aim is accomplished through a study of nursing literature that reveals how professional information is regarded within the Swedish nursing profession. These are analyzed in relation to changes and development within the profession's applied knowledge domain over time. It is argued that the knowledge domain of nursing has shifted from a primarily practical orientation towards an increasingly theoretical orientation. Its previous subordination to medical expertise has been replaced by an aspiration towards professional autonomy. This shift is seen as a result of a professional strategy where the specialist literature, libraries and databases of the occupational community play an important symbolic role.

1. Introduction

Domain analysis has, during the last decade, developed as an important theoretical approach within library and information science. It has, among other things, brought out the importance of epistemological questions and criticized mentalistic oriented research. The primary aim of this article is to contribute to the development of the domain analytical approach by using tools from the theory of professions. This will be accomplished by making visible the symbolic values of professional information, through which professional interests, power relations, and occupational identities can be created, sustained and altered. In this way I want to highlight the importance of power and knowledge use in a social practice, which are two areas that only to a certain extent have been attended to within domain analysis. The point of departure is domain analysis as it has been put forward by Birger Hjørland.

Empirically, I investigate the Swedish knowledge domain of nursing, which is clarified and portrayed through a historical account of key events in the history of nursing education, the institutionalization of nursing research, and the growth of the domain's professional information.[1] The following question guides the analysis of the empirical material of this article: What ways of regarding professional information are expressed within the nursing profession in relation to change over time in the profession's

Swedish knowledge domain? In particular, I study the increasing emphasis on academic knowledge within the professional knowledge domain of nursing. This knowledge domain has shifted from a primarily practical orientation towards an increasingly theoretical orientation. Its previous subordination to medical expertise has been replaced by an aspiration of professional autonomy. This shift is seen as a result of a professional strategy in which the specialist literature, libraries and databases of the occupational community play an important symbolic role. The article focuses on the decades following the year 1977, an important date in the history of Swedish higher education reform. The empirical material is primarily taken from Swedish professional journals of nursing.

2. Nurses and professional information

Nurses constitute the largest occupational group within the healthcare sector and nursing has in Sweden, as well as internationally, undergone major changes in organization, education, research and in the professional information of the occupation (e.g. Erlöv & Petersson, 1992, 1996). At the same time, library and information science research shows that nurses, only to a minor extent, seek and use formal professional information in the work practice (e.g. Silverstein, 1995; Spath & Buttlar, 1996; Urquhart, 1998). Instead, nurses rely mainly on personal contacts and ward-based information. Furthermore, the research shows that nurses, compared to other occupational groups within healthcare, use hospital libraries to a lesser extent (e.g. King, 1987; Spath & Buttlar, 1996) and then usually only in relation to their further education (e.g. Urquhart, 1998).

These earlier studies generally use the information system as a starting-point and justify the study with how these systems can be better and more often used in the work practice of nurses. Therefore, although research articles concerning nurses in library and information science have been quite numerous, the literature has often had a normative state of departure in how nurses *ought* to conduct information seeking. Metaphors like "gap," "barriers" and "bridges" frequently recur when problems are discussed. The use of these metaphors indicates a view of the relation of professionals to professional information that I claim has its starting-point in a sender/receiver model of communication (cf. Day, 2001). Information seeking and use is seen, according to this approach, as a way of receiving information that is seen essentially as external facts that the individual, prior to information seeking, does not have.

I argue instead that professional information should not only be seen as a representation of "facts," which can be transmitted between a "sender" and a "receiver." The media researcher James Carey (1989, p. 14ff) distinguishes in a similar way between two perspectives on communication. In the transmission perspective, communication is seen as a process where information is transmitted between individuals with a geographical distance between each other. In the ritual perspective, on the other hand, information is seen as a tool through which common norms and values can be sustained. In this article the latter perspective is at the fore, which I underline by talking about the symbolic values of professional information. Professional information is, therefore, seen as a socio-cultural tool whose meaning and relevance is constructed within the community it exists (cf. Cornelius, 2002; Hjørland & Albrectsen, 1995).

3. A theoretical framework

3.1 Domain analysis

Domain analysis can be understood as a broad theoretical approach that helps to unite researchers who look at the problems posed by library and information science from a sociological perspective, as opposed to a psychological one. In a narrower sense, domain analysis is an approach formulated by Birger Hjørland who, together with Hanne Albrectsen, describes it as follows in a programmatic article from 1995:

> The domain-analytic paradigm in information science (IS) states that the best way to understand information in IS is to study the knowledge-domains as thought or discourse communities, which are parts of society's division of labor (Hjørland & Albrechtsen, 1995, p. 400).

Opposed to an individualistic view on information needs as subjective expressions of lack of knowledge, Hjørland argues that questions concerning individuals' interaction with professional information and information systems must, in order to be meaningful, be related to the social practice that individuals are a part of (e.g. Hjørland, 2000a, 2000b, 2000c, 2002). Information needs, relevance judgment and knowledge organization should, thus, be observed from a socio-cultural perspective.

The view of domain analysis on the relation between knowledge and social reality is, thus, not completely unambiguous. A realistic-materialistic per-

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spective of knowledge is often expressed, wherein knowledge seems to be regarded as determined, in a one-way direction, by the division of labour in society (e.g. Hjørland & Albrechtsen, 1995, p. 400). I argue instead that a domain analytical viewpoint does not necessarily exclude the possibility of seeing knowledge as constructed in a social *and* communicative interplay. In such a perspective, communication with professional information between actors within a community comes into focus. The empirical object of study is then partly shifted from the social conditions of knowledge to the discourses where knowledge is produced, communicated and used. Knowledge claims about social reality and their representation in professional information, can not, according to such a neopragmatist position, be judged in an absolute sense as "truer" than other knowledge (cf. Wenneberg, 2000).

By "knowledge" I refer to what a group of people with a common social practice regard as knowledge and which forms a guide to their activities. In the professional practice of nurses, as for other professionals, there is a continual evaluation of knowledge through more or less visible negotiations between actors in different arenas about the choice of different working methods or values and the significance of professional information. The knowledge claims of different professional groups convey different perspectives of social reality – perspectives that can be in conflict with each other.

If we accept that phenomena such as information needs, relevance and the practice of knowledge organization benefit from being researched as social phenomena while at the same time they include an interest in power, a significant question emerges. That is: how are the norms and values of these phenomena created, sustained and altered and by whom? To help answer this question I want to put the spotlight on the importance of investigating conflicts within and between professional knowledge domains. Domain analysis, as formulated by Hjørland, does not provide explicit guidelines for how these norms and values can be studied as expressions of conflicting group interests. I therefore turn to the theory of professions.

3.2 Professional interests and power

Research on professions has contributed to an understanding of the struggle for the professionalization of nursing during the 20th century. Since the seventies, sociological studies on professions have been interested in the strategies used by occupational groups to attain social status as professions – in other words, their professional project (e.g. Witz, 1992). From this point of departure, occupational groups strive to attain autonomy and the tools that they use for this activity are different kinds of strategies of closure – a concept taken from Max Weber. These closure strategies refer, among other things, to how new members are taken up in the occupational community, how the formal knowledge of the occupational group is protected, and how occupational groups try to exclude other occupations from their practice (MacDonald, 1995, p. 27ff). In the realization of occupational groups' professional projects, rivalry between professions plays an important role, not least within healthcare, and to study such competition has become an important task for contemporary research on professions (Abbott, 1988). The medical profession's dominance over the work practice of other professions within healthcare is strong, which means that these other professions have to develop strategies in order to relate themselves to the exceptional position of medicine. The relation between the medical profession and the nursing profession can thus be characterized by a relation of dominance, subordination and resistance (Witz, 1992).

In the present article an interest in the symbolic role of knowledge is brought together with an interest for how this knowledge is represented in the artifacts of professional information. Research on professions places the knowledge claims of professions as the focus of its interest. Up to the beginning of the seventies, it concerned itself primarily with the role of knowledge in connection to professional problem solving; the better developed the knowledge system is, the better the possibilities for professional problem solving. The better professional problem solving becomes, the more status and power the profession will have in society. The relation between power and knowledge is one where by power accrues to a well developed knowledge system. Research on professions since that time has instead highlighted the symbolic value of knowledge, where the relation between knowledge and professional problem solving is more blurred (e.g. Collins, 1979). The relation between power and knowledge can here be expressed as a situation where those who have power also have better possibilities to raise their knowledge claims. According to the last mentioned perspective, the link between formal knowledge production of the profession and its actual use in practice is not clear, but the significance of this knowledge for the profession is just as important through its symbolic function.

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A recurrent theme in the professional project of nurses is the argument, advanced by representatives of the nursing profession, for increased autonomy vis-à-vis the medical profession and increased status in society supported by the fact that there exists a developed nursing knowledge system, a system independent from medicine. Professional information is a key component of the symbolic value of knowledge. When, for example, a researcher is interviewed on television it is often done with a well-filled bookshelf in the background. Professional literature declares power, scientific authority and the preferential right of interpretation. Regardless of the nature of the relation between the abstract knowledge system and professional activity, it is on this relation that the professional argument is based. The academization of nurses' education, the institutionalization of nursing research and the scientification of the work practice can, therefore, be regarded as parts of the professional project of nurses (cf. Rafferty, 1996; Traynor, 1996, 1999). This professional discourse, formed out of prevailing interests, thereby exerts a disciplinary logic that influences individual practitioners' information seeking and use by mediating a suitable collective professional identity (Evetts, 2003; Fournier, 1999).

The significance of the symbolic value of knowledge is highlighted by the fact that even if the members of the profession are regarded as experts and are acknowledged by society, including other professions, they may not be given jurisdiction over the application of their knowledge. Jurisdiction entails both that the profession can solve work tasks in their own way and that they are formally granted the right to exclude other professional groups from their problem solving (Abbott, 1988). Patrick Wilson discusses professions, their knowledge claims and need for professional information in a similar manner. Wilson does not explicitly use theory of professions, but treats professionals' information seeking and use with the support of the concept of cognitive authority. Wilson underlines that the questions of who decides what knowledge is important, and what professional solutions are best, is settled by experts from different knowledge domains, but he emphasizes that such expertise is constructed within a social arena. In *Public Knowledge, Private Ignorance* this is expressed in the following way: "It is not enough, in order to be a contributor to public knowledge, to think one is; the rest of us have got to think so, too" (Wilson, 1977, p. 16). In relation to theory of professions this could be expressed as the belief that the knowledge system of a profession has to possess societal acceptance in order to pursue its jurisdiction.

4. Material

Hjørland (2002) presents eleven approaches to studying knowledge domains. The most relevant for this article is to investigate the epistemological "truths" of a domain and their manifestations when the significance of professional information is discussed in a historical perspective. Professional journals are one of the tools that mediate norms and values of the occupational community after basic training. The empirical material is therefore constituted primarily of articles from Swedish professional nursing journals. These are supplemented with nursing textbooks, research articles and other documents where the profession's views of professional information are expressed. The literature has been selected with the objective of making visible the norms and values of the profession concerning the importance of professional information to nurses in their work.

In the analysis, some documents have been analyzed on a descriptive level of interpretation in order to contribute to an understanding of factual historical and institutional circumstances. At the same time, documents (sometimes the same ones) have been analyzed in order to contribute to a discursive interpretation. In the latter case, the epistemological direction of the domain, and its significance for the role of professional information within the occupation's knowledge domain, is expressed through the literature. In other words, the empirical material has been used partly to describe the actual circumstances that lie "beyond" the text and partly to reveal which questions are under discussion where the text itself is the object of study.

5. Changes in the knowledge domain of nursing

The Swedish nursing profession, as in the rest of the world, has deep historical roots. In this article, however, I introduce the empirical study with an account of an important historical breaking-point in the professionalization of Swedish nurses, namely the Swedish university reform of 1977. Thereafter, I portray, in two parts, how professional information has been used as a tool in the professional project of nurses. The empirical account concludes with a discussion on the specific phenomenon of *evidence-based nursing* in relation to the struggle of the occupations to become a profession.

5.1 From a craft to a profession

The sociologist Anne Witz (1992) makes visible two competing discourses in the Anglo-American history of nursing: one discourse that primarily underlines the unique, often described as "female," craft in the nursing occupation and one discourse that primarily emphasizes professionalism, formal knowledge and academic education. The former discourse dominated the Swedish knowledge domain up to the 1970s and its norms and values pertaining to professional literature can be characterized by the following quotation from 1867 by Florence Nightingale:

> This is the reason why nursing proper can only be taught by the patient's bedside, and in the sick-room or ward. Neither can it be taught by lectures or by books, though these are valuable accessoires, if used as such; otherwise, what is in the book stays in the book (in Nutting & Dock, 1907, p. 261).

The education of nurses became increasingly theoretical during the 20th century, internationally as well as in Sweden, but the core of nursing was for a long time based on science and medicine. Thus, nursing knowledge was subordinated to medicine and nurses subordinated to physicians. A decisive breaking-point occurred with the Swedish university reform of 1977 (SFS 1977:218) and from then on the discourse of professionalism came to dominate the knowledge domain. Nursing education should, just as in other forms of education that were being integrated into the university system, be based on the scientific grounds of *nursing* research.

Even if the research base of nursing education had been under discussion for some time, it was from that point stipulated in the legislation. Iris Erlöv and Kerstin Petersson designate the ideology of this period as holism and maintain that nursing, as such, has not been paid attention to in this way since the days of Florence Nightingale (Erlöv and Petersson,1992, p. 183ff). Instead of integrating more medical knowledge into the education, the profession increasingly pursued the development of their own formal nursing knowledge. A comparable professional strategy can also be ascertained in the Anglo-American world (Rafferty, 1996). Nurses were educated to become experts of nursing instead of medical assistants of physicians. The reform thus challenged the medical hierarchy of knowledge with the physicians at the top and the notion that other occu-

pational groups, in varying degrees, had been provided with lesser medical skills in their training.

What then, is meant by nursing, which since 1977 is described as the core subject of nursing education? The Swedish Medical Research Council appointed as early as 1974 an interdisciplinary committee for promoting nursing research. They defined it initially as "... an important supplement to a technically well-developed healthcare which has been experienced as too impersonal and sometimes even inhuman" (Medicinska forskningsrådet, 1978, p. 108. My transl.). Their work ended in 1982 with, among other things, an often cited definition of nursing and nursing research:

> Nursing requires that we meet universal and personal human needs and in doing so make use of the individual's own resources for maintaining or recovering optimal health as well as meeting the need for care during the final stages of life. Nursing coincides partly with and constitutes a supplement to medical care, taking into consideration physical and social as well as cultural aspects. Nursing research studies this process, the situation and the environment where nursing is given, the aids that are used, the results of nursing together with the relations and interplay between staff, patients and their relatives. Nursing research also includes research concerning the organization of healthcare and education in nursing. (Medicinska forskningsrådet, 1982, p. 10. My transl.)

One of the prerequisites that would eventually enable nursing to develop as a scientific subject was the production of doctoral degrees by members of the knowledge domain. However, in the middle of the 1970s there was not yet any Swedish PhD programme in nursing. In 1980 Umeå University was granted a temporary professorship in nursing research and a PhD education was initiated two years later. The first professorships of nursing research were established at Umeå University in 1986, Linköping University in 1986, Uppsala University in 1987 and the Nordic School of Public Health in 1987 (Bentling, 1995, p. 53).

5.2 Professional information at the fore

The change of direction within the professional knowledge domain which the university reform of 1977 and its related institutionalization of nursing

research in Sweden demonstrated, left its mark on the growth and direction of, and the meaning given to, the professional information of the domain. The nursing libraries faced in 1977, as did the majority of teachers and students, a changed and partly unexplored knowledge domain. Also, access to hospital libraries was for the majority of Swedish nurses an important issue in the 1970s. Restrictions on access to hospital libraries by nurses were challenged during the 1970s and instead the importance of access to hospital libraries for all occupational groups was underlined. Already, in an article in *The Municipal Worker*[2] from 1971, the author called attention to the fact that a hospital library ruling gave access only to physicians. An interviewed employee asked rhetorically the following question:

> But why should the medical library only be open to doctors? Why should all the other staff be shut out? That's annoyed me for a long time. We can read as well, you know. (Midfeldt, 1971, p. 6. My transl.)

Several regional evaluations of the role of Swedish hospital libraries were made during the 1970s and 1980s. These evaluations revealed that different types of libraries had existed in hospitals for a long time, but these had often been reserved for physicians (e.g. Stockholms läns landsting 1976). The representatives of the nursing profession took the library issue seriously. The following was written in1979 in an article from *The Healthcare Union*:

> We are aware that the level of nursing school and medical libraries is very uneven. Within the nursing school area, much has been developed. Unfortunately it does not look quite so good as far as hospital medical libraries are concerned and perhaps we have ourselves to blame. The demand for nursing literature must come from us, from our representatives in library committees! (Söderlund, 1979, p. 66. My transl.)

The need to develop nursing libraries at the nursing schools, and professional libraries at the hospitals, was now given increasing attention. In the Swedish professional journals a number of articles were published during the 1980s and the early 1990s concerning nursing school libraries, their role in education and how the growing professional information of the domain could be searched using bibliographical tools.

The lack of scientific nursing literature and the poorly equipped nursing school libraries were pointed out in a report from The Swedish Federation of County Councils as a problem for the research base of nursing education (Landstingsförbundet, 1981). A similar manifestation of the need for better access to professional information is proclaimed in the Nursing Union pamphlet from 1981. It is a policy platform that consists of eighteen articles, of which the fourth article emphasizes the importance of access to libraries:

> Well-functioning libraries are needed to support the connection to research. At present the level is uneven both at nursing school libraries and at hospital libraries. Nursing school libraries are developing strongly at the present time. Members of the Nurses Union are not particularly considered a target group by either hospital libraries or academic libraries. The Union should have representatives on the library committees that require libraries to provide books and journals that are of interest to Union members. In the future there ought to be a research library for nursing in every university region. (SHSTF, 1981, p. 11. My transl.)

I argue that developing access to professional information for nurses, both students and clinicians, was seen as a prerequisite in order to realize the intentions of the university reform. Nursing libraries were a part of this explicit information strategy. The quotation above can also be seen as a manifestation of the professional project and its need to display both to the surrounding world and the members of their own occupational community the existence of a formal nursing knowledge base.

However, to justify demands for better access, the professional literature has to be read. In a 1984 Swedish thesis on the growth of nursing as an academic discipline, the author describes the relation of practicing nurses to formal professional information:

> Just as it is the nursing researcher's obligation to *supply* healthcare workers with new knowledge it is the healthcare personnel's responsibility to *accept* it, evaluate it and use it. This is easy to say but not so easy to do. Today's nurses are not educated or trained in reading, understanding or critically evaluating research articles. This is a feature that has developed during the last five-year period. They also do

not have a tradition to fall back on of continuing to read professional literature once they have completed their education. It is not natural for a nurse to read professional journals at work during working hours. As a rule, there is no ward-based literature or journals. The demand to be at hand for the patient makes it impossible for nurses to visit the hospital library in the same way that doctors can. (Andersson, 1984, p. 53. My transl.)

This thesis, with its meta-disciplinary character, constitutes an important and early basis of the growth of the Swedish nursing discipline during the 1980s. The quotation further illustrates the importance that the representatives of the profession placed on the close relationship to professional information and specialist libraries.

Also, in the journal *Care*, it is possible to see the normative role that nurses' professional journals have in mediating norms and values concerning the significance of formal professional information for the occupation. Below is a striking example of this information strategy, taken from an 1988 editorial encouraging nurses to be active participants in the occupational community:

> Sometimes you will hear and perhaps even find yourself saying that you do not choose to work in nursing if you enjoy reading and writing. It's contact with people that you're interested in and not reading and writing reports. --- You can get into the habit of reading a professional journal or a book, or why not an article in CARE, and then write a summary of it. This is also a great way of remembering what you've read. --- If we, who work within such a soft sector as healthcare must be considered to be, learn to describe in writing what we actually do, if we document what we do in the same way as the articles in this issue, then perhaps we will quickly be taken more seriously. The tacit understandings that characterize nursing to a great degree need to be documented, spread and read. ([unknown author], 1988, p 5. My transl.)

By the end of the 1980s, clinical questions had become key issues for the nursing trade-union and *The Healthcare Union* introduced a "Clinical supplement" in 1989. This supplement was devoted to clinical articles mainly by members from the occupa-

tional community "…to mediate knowledge that is necessary to everyday work" (Stubbendorff, 1989, p. 3. My transl.). *The Healthcare Union*, which all nurses get in their mailbox, was (and is) thus an important tool for the communication between single members of the occupational community and the occupational level. *The Healthcare Union* can therefore be said to mediate the professionalization strategy of the occupation by describing the growth of their own formal knowledge base, i.e. nursing. Union issues and the knowledge formation of the occupation were seen to go hand in hand.

The Swedish university reform of 1977 and the corresponding developments abroad brought with them a shift in occupational identity as formulated within the profession. The new occupational identity had to be socially assimilated by practicing nurses and professional information proved to be the mediating tool for the purpose.

5.3   Professional information as a tool for academization

The next, and still valid, university reform in Sweden started in 1993. It entailed a further step towards a "scientification" of the knowledge domain. The length of nursing education increased from two to three years. The demands on the students to be able to follow and participate in the formation of knowledge by means of information seeking and use were now clearly expressed in the legislation and in other central texts of the profession (e.g. SFS, 1992:1434). The new nursing education made it possible to take a Bachelor of Nursing parallel to a vocational diploma. During the 20th century, it is thus possible to track a change in the nursing education from practice to theory, from medicine and natural science to nursing and from a vocational education to a more academic one. The academization of nursing education was regarded by the representatives of the profession as a prerequisite for professionalization and thus, an increased status for the occupation. The efforts of the profession to mediate an awareness of the significance of professional information for the members of the occupational community should therefore not only be seen as a safeguard for better patient care, but also as an expression of the professional project of Swedish nurses.

The same year as the new university reform was implemented, *The Healthcare Union* further developed the relation between union issues and occupational issues: "It is now the Union's ambition to

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prove how union issues are occupational issues and vice versa" (Stubbendorff, 1993, p. 3. My transl.).

> The rest of the nineties will be marked by the professionalization endeavor. There are thoughts on how to expand and increase the limited career possibilities open to union members at present and to have their competence recognized as professional. (Ibid)

In the professionalization endeavor of the occupation, nursing research and its application in both clinical work and education play an important role, both in raising the status of the professional and more academically schooled nurse, but also for "disciplining" the members of the occupation through the mediation of the profession's new norms and values.

In relation to the university reform of 1993, two Swedish textbooks were published that both aimed at raising awareness within the occupational community of research, literature and information seeking: *Ask the literature!* (Segesten & Segesten, 1993) and *Use the results of research!* (Segesten, 1994). These two texts make clearly visible the interest of the profession in promoting a greater awareness of formal professional information and are therefore given particular attention here. *Ask the literature!* primarily addresses "older" nurses that have started professional development courses, but the textbook has also been used in certain nursing programs. There are two points of departure in the book: one is the difference in study between senior high school and higher education where the latter requires a more independent relationship to professional literature. The other is the need to keep up to date with the literature even in the future career:

> Your education is not complete just because you have a degree. In order to sustain your professional knowledge on a high level you will be required to develop throughout your life. You will find that this is regulated in the statutes for healthcare personnel... When your education is completed there will be no teachers to ask. You must acquire an approach to the literature, which becomes a natural part of your life. This means among other things that you should continually read professional literature. In this way you will keep your knowledge up to date and be able to follow developments in your occupation. (Segesten & Segesten, 1993, p. 9. My transl.)

The book discusses different types of literature, gives advice for the evaluation of the relevance of literature, describes how the Swedish classification system works, and how library catalogues work together with the principles of bibliographic databases and subject catalogues. References to current legislation and passages with wording such as "you *must* acquire," "the statutes *maintain*," "during your study time you *must*" and "you *should* continually read professional literature" reveal the strongly demanding style of the text (my italics).

Use the results of research! is a textbook that addresses practicing nurses. In the introduction, an argument is built for the importance of applying research results, which is motivated by both practical and normative reasoning with references to laws and regulations. One section of the book, "Finding the right articles and reports," deals with the need to keep up to date through continual reading and task oriented information seeking. How the choice of appropriate journals should be made is described in these words:

> Discuss and make a list of the scientific journals that the group is aware of. Rank them in the order of importance you think they have for the group. If possible, seek advice from the librarian. Make sure that the list does not have a medical bias but that it really contains journals from our own area of responsibility and activity. (Segesten, 1994, p. 32. My transl.)

It can be seen that nurses' reading of research literature is given an important role and a stance is taken in the last sentence of the quotation – it is primarily their own knowledge domain that should be used, not the medical one. Both of the above textbooks mediate the new, emerging occupational role's expectations of practicing nurses' relation to professional information. During the last decade there are a number of examples of how nurses' journals in Sweden make room for articles about the ways, among other things, new information technology can be used to search for professional information, for example, "Knowledge thirsty sister finds information on the net" (Nyman, 1998. My transl.).

5.4 Evidence-based nursing – an epistemological balancing act

A phenomenon that has received great attention during the last decade is evidence-based medicine and

the corresponding phenomenon of evidence-based nursing. To base clinical work on research is, of course, not reserved for evidence-based care, but during the 1980s, the evidence-based approach was used for a particular problem solving method. Evidence-based care has, during the 1980s and 1990s, become a *movement* with specific journals, conferences, training-centres and institutes. One of the departure points for this movement is the notion that there exists a gap between research and clinical practice, a gap that I described earlier in the article.

The importance of nurses' information seeking and use in the evidence-based tradition is expressed in *The Healthcare Union*: "If nurses want to call themselves professional they will have to keep up with research and scientific development" (Olsson, 2000b, p. 40. My transl.). Another example is taken from an introductory textbook to the evidence-based movement for nurses: "There is thus a moral imperative for the practitioner to keep up-to-date with research. Reading journals is a first step ..." (Long, 2002, p. xvi). But also the organization of healthcare, according to the evidence-based movement, needs to change:

> Thus, there needs to be access to libraries (with on-line searching facilities), dedicated/protected time to locate, read and appraise evidence (it is not reasonable to expect this to be done outside of work time) and, perhaps most challenging, empowerment in the workplace to implement (agreed) changes in practice. (Long, 2002, p. xvi)

Within the evidence-based movement, especially evidence-based medicine, a hierarchy of scientific methods has been established in order to evaluate the "veracity" of research findings. This hierarchy can differ in details, but at the top is Randomized Controlled Trials (RCT), or compilations of such, and at the bottom are case studies and qualitative research. Since medical knowledge has precedence in healthcare, other professions interested in the evidence-based movement have had to relate to this hierarchy. Problems occur – depending on how strictly the hierarchy of evidence is followed – in the meeting between evidence-based medicine and the often qualitative human sciences oriented nursing research of today (cf. Willman & Stoltz, 2002). It can be maintained that the methods of the evidence-based movements have a specific in-built epistemology and that it is therefore problematic to transmit the ambi-

tions of the movement from medicine to nursing. The above described hierarchy of evidence has thus partly challenged qualitative nursing research whose findings by definition always end up furthest down in the hierarchy.

The basic standpoints of the evidence-based movement's epistemology have been discussed, criticized and partly questioned. The implicit epistemological basis of the evidence-based movement has been criticized for allowing only one "truth" and one "rationality" when the "best practice" is summarized in the form of clinical guidelines. According to this criticism the time bound and pragmatic nature of scientific knowledge is not recognized by the evidence-based movement. Also brought to the fore is the problem that phenomena, central to nurses, which cannot be studied with methods that are acceptable to the evidence-based movement, risk being dismissed as less interesting. This may lead to a negative effect on the status of the qualitatively oriented nursing knowledge domain. Evidence-based nursing has also been discussed in professional journals. Among other things the dominance of qualitative nursing research has been criticized from an evidence-based perspective. More experimental intervention-based studies have also been called for (Olsson, 2000a) even though this criticism has not been allowed to pass without comment (Olsson, 2000b).

In 1999 *The Healthcare Union* introduced an ongoing section dealing with research information. New clinically applicable knowledge is refereed and written in an accessible language for a target audience of nurses, midwives and laboratory assistants – professionals who in general, according to the journal, normally do not read scientific journals. The section is entitled "Practice and Research" (my transl.) and the evidence-based concept is avoided with the following motivation: "In our opinion, at *The Healthcare Union* and the reference group of researchers that are associated with the project, there are different understandings of what the concept of evidence-based research stands for" (Dalenstam, 1999, p. 44. My transl.). This quotation illustrates the existing tensions in the attitudes to evidence-based nursing.

The professional project of Swedish nurses has, during the last decades, included the development of a formal knowledge base through nursing research. By these means the representatives of the profession have wanted to prove the uniqueness of the knowledge domain and of the clinical work of nurses, not least in relation to medicine and physicians. It has resulted in a change of direction from medicine to

nursing, where, among other things, the holistic aspect of nursing work has been brought to the fore in contrast to the primarily atomistic interest of physicians (Erlöv & Petersson, 1992, 1996). Instead of quantitative methods from a natural science perspective, the individual has been placed in the centre and researched in recent years, often with qualitative and interpretative methods (e.g. Willman & Stoltz, 2002). When the evidence-based movement became generally accepted during the 1990s, some members of the profession saw it as a chance to formalize their knowledge base in accordance with the principles of medicine, while others saw it as a threat against the unique knowledge of the profession which would be distorted by the traditional epistemology and methodology of medicine.

6. Conclusion

A recurring theme in this article is that the knowledge claims communicated by means of professional information should be seen in relation to power and to the competing interests of different occupational groups. I have described how the epistemological centre of gravity in the Swedish knowledge domain of nursing has evolved, from a practical nursing orientation during the early development of the occupation, to the more theoretically oriented nursing of today (Erlöv & Petersson, 1992, 1996). An important step in this change is the academization of nursing education initiated with the university reform of 1977 and the related institutionalization of nursing research. Nursing education became a university degree program and it was expected to be based, through professional information, on the knowledge formation of its own domain. With support from the theory of professions I regard this process, and its continued development during the 1980s and 1990s, partly as a result of a *professional project* (cf. Abbott, 1988; Evetts, 2003; Rafferty, 1996; Traynor, 1996, 1999; Witz, 1992). I also show how representatives of the profession are forced to navigate in the context of the natural science oriented epistemology of the evidence-based movement. It can be maintained that *cognitive authority* of the professional information of nursing is, to a great extent, created in relation to the high status knowledge domain of medicine.

In the introduction to this article I posed the following question: what ways of regarding professional information are expressed within the profession in relation to change over time in the profession's Swedish knowledge domain? The study of Swedish nursing journals and other documents undertaken in this article, where the profession's view of professional information is expressed, makes visible the growing importance which is attached to professional information and nurses' seeking and use of it. A close relation to professional information implies increased opportunities for nurses to share common norms and values concerning the practice of nursing, but it also seems to have a symbolic value in supporting nurses' professional project; the existence of professional literature and information systems, by and for members of the community, is regarded as one of many criteria for the professionalization of nursing. Thus I make visible how professional information is not just used for rationalistic problem solving, but also as a symbolic tool to mediate norms and values. This information strategy challenges prevailing power relations between the traditional male-dominated medical profession and the female-dominated nursing profession, that is, between types of knowledge, occupations and gender (cf. Witz, 1992),

The primary aim of this article was to develop the domain analytical approach by using tools from theory of professions. The domain analytical approach creates new conditions under which to study human interaction with professional information and its representation through knowledge organization. Domain analysis draws attention to the need to investigate this interaction as a social and cultural phenomenon (e.g. Hjørland, 2000a; Hjørland & Albrechtsen, 1995). I demonstrate this with an emphasis through the empirical examples of the article. But I have also pointed out some shortcomings in domain analysis, especially in the analysis of applied domains. I have underlined that professional information is used in a social practice and its relevance, to a great extent, is asserted through the cognitive authority that it is given. From my perspective, domain analysis, above all, creates a platform from which to view the research problems of library and information science, but it offers no practical tools for analyzing internal conflicts and competition within and between knowledge domains. I argue, therefore, for the necessity of including issues concerning power and the conflicting interests of groups through theory of professions when professional knowledge domains are analyzed.

I also make a case in the article for the importance of studying the symbolic significance of professional information by combining domain analysis with theory of professions. As a result, I question the effects of the conduit metaphor, which have been very in-

fluential in library and information science (Day, 2001). The metaphor leads to a view on how information, either seen as facts that mirror an outer reality or as the intentional expression of people's cognitive structures, is transmitted between sender and receiver. By studying the symbolic significances of professional information, I strive to distance myself from professional interests, whether they are nurses', librarians' or researchers', and instead, adopt a perspective where the normative interest of information seeking and use of professionals are seen partly as an expression of a strategy in an increasingly researched based professional life. I thereby show how libraries, journals and other artifacts of professional information do not just represent social reality; they also contribute to its establishment.

Notes

1   The article is based on the PhD thesis *Information strategies and occupational identities* (Sundin, 2003), which investigates this question and others more extensively.
2   I have through out the article translated the Swedish journal titles and book titles to English.

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