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The Instrumentality of Information
Needs and Relevance

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Abstract. An important question in Library and Information Science (LIS) is for what purpose information is sought; information seeking is not carried out for its own sake but to achieve an objective that lies beyond the practice of information seeking itself. Therefore, instrumentality could be seen as an overarching principle in the LIS field. Three different epistemological approaches to information needs and relevance, and the views on instrumentality that goes with them, are presented: the structure approach, the individual approach and the communication approach. The aim of the paper is to show how a communication oriented, neo-pragmatist epistemology enables research that in a dialogic manner highlights both the social contexts that information users are part of, and positions users as active contributors to the shaping of these contexts. The power relations that permeate these processes of negotiation between users and contexts are highlighted by introducing a Foucauldian perspective on power.

1 Introduction

The aim of CoLIS 5 is to explore different conceptions of *context* in Library and Information Science (LIS). This paper aims to contribute to this discussion by introducing neo-pragmatism as an epistemological tool to understand how and why context matters in LIS practices. In this paper, we focus on the practice of information seeking. An important and recurrent research theme in LIS is for what purpose information is sought. This theme is fundamentally instrumental in character; information seeking is not carried out for its own sake but to achieve an objective that lies beyond the practice of information seeking itself. This assumption clearly points to the necessity of including those social practices and institutions – that is, the contexts – where these objectives are formed, in the academic study of how people seek information. In fact, instrumentality could be seen as an overarching principle in a discipline that is so often assessed in relation to its ability to improve information systems and services. Having made this observation, it is important to recognize that there are different views on instrumentality expressed in LIS research. Therefore, one of the questions we explore in this paper is what these different conceptions of instrumentality entail when related to information seeking practices.

In exploring instrumentality in relation to information seeking practices, we particularly focus on different conceptions of "information needs" and "relevance".[1] In highlighting information needs, we deal with one of the most central concepts in LIS. The ways in which the LIS community relates to this concept have consequences for how it relates to many other phenomena in the field. One example is the assessment of the relevance of information – a practice that, in LIS, is rarely studied from a social perspective. The concept of relevance has in LIS mainly been explored in the context of information retrieval research (IR). We wish to supplement this perspective by focusing on relevance from the perspective of information seeking research (IS). The second question that we address in this paper, therefore, is the question of how different conceptions of information needs and relevance in LIS could be characterized. In answering this question, we present three epistemological approaches: the structure approach, the individual approach and the communication approach. We argue that the communication approach, which we prefer, contributes to an understanding of information needs and relevance that takes social context into serious account, while simultaneously appointing an important role to individual agency.

Thirdly and finally, we introduce our version of what a communication-oriented approach to information needs and relevance could look like. This version takes a neo-pragmatist epistemology as its point of departure, mainly as this is expressed by Richard Rorty [e.g. 1]. Neo-pragmatism is an epistemological position that has lately attracted increased attention in the social sciences. The neo-pragmatist view of instrumentality, which we promote in this paper, emphasizes the positive aspects of instrumentality and opens up for an improved dialogue between LIS and other academic disciplines, as well as between LIS research and other professional practices within this field. We particularly focus on the neo-pragmatist concept of *community of justification* as a way of illustrating context. But since neo-pragmatism provides a somewhat insufficient tool when dealing with questions of power [e.g. 2], we turn to the works of Michel Foucault [3] in order to develop a deepened understanding of how power and power relations work in information seeking practices. We conclude by outlining some of the implications of this epistemological and theoretical approach for LIS in general, and IS in particular.

We mainly draw on a theoretical discussion in order to provide a more nuanced understanding of the multifarious social practices through which information seeking is carried out. We believe that our discussion contributes to making visible the often implicit epistemological claims that all empirical studies are based on. Such clarifications are especially important in LIS as an inter-disciplinary endeavor. In making this claim, we continue an on-going discussion that is exemplified also in the proceedings of previous CoLIS conferences.

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[1] We have put quotation marks around "information needs" and "relevance" so as to indicate that our focus is on how these concepts are *used* in different LIS practices, and not on providing any absolute or essentialist definitions. To improve readability, we only use quotation marks the first time the concepts are introduced, but the reader should bear this remark in mind.

2   Three Approaches to Information Needs, Relevance and Instrumentality

Concerning the question of the purpose of information seeking, the answer is usually given that this purpose is an expression of the user requiring information in some way, which often includes both the user's explicitly stated wishes – her *wants* – and those wishes that the user possesses, albeit not consciously recognizes – her *needs*. A search in LISA on information needs reveals that this concept has drawn a lot of both empirical and theoretical attention in LIS. Already in 1981, Tom Wilson states in his frequently cited article *On user studies and information needs*, that since the institutionalization of user studies in 1948 through the Royal Society Scientific Information Conference, the development of a theoretical understanding of information needs has not been attained. The concept of need connotes a psycho-logical way of describing the reason for which users decide to seek information and why they prefer certain resources over others. This psychological framework includes how the issue of relevance is dealt with. What has happened since Wilson wrote his article is that the psychological approach has become dominant.

Tom Wilson [4] showed, in spite of his interest in primarily psychological aspects of the concept and even though he wanted to avoid the concept of information need itself, how both socially and individually oriented aspects of information needs should be considered. In Wilson's own writing, social aspects could be exemplified by his deployment of the concept of "dominance". Wilson stated that:

> *Because the situations in which information is sought and used are social situations, however, purely cognitive conceptions of information need are probably inadequate for some research purposes in information science, but not for all.* [4, p. 9]

Despite Wilson's argument that was presented so many years ago, social aspects of information needs and relevance assessments have not been explored to any great extent. As a symptomatic indication of this state of affairs, individual aspects are very prominent when Donald Case [5] in his recent book summarizes IS literature. For example, Case's book does not include any discussion at all of the social aspects of relevance assessments. This exclusion is not stated explicitly. Still, different epistemological approaches always – explicitly or implicitly – mediate specific views on how information needs are formed and satisfied by information, which is assessed as relevant from this specific viewpoint.

In the following, we briefly and schematically describe how information needs and relevance are dealt with in LIS. In this presentation, we use the mediated view on the origin of an information need in order to illustrate three different approaches: the structure approach, the individual approach and the communication approach. These approaches are based on different epistemological claims concerning how information needs and relevance should be defined, and they include different views on instrumentality. The three approaches can be labeled as metatheories, and have as such been described in LIS research literature [6], [7], [8], [cf. 9]. Our categorization differs from the one commonly applied in LIS which takes the research perspective (that is, user or system) as its point of departure. We wish to emphasize that our application of these approaches to the issues of information needs and relevance

should be regarded as ideal types, that is, as abstracted simplifications of what is in fact various, nuanced and seminal research approaches.

When we refer to specific researchers in exemplifying these ideal types, it is important to note that we do not intend to identify the individual researcher with the ideal typical definitions given.

2.1 The Structure Approach

The structure approach builds upon a distinction between expressed wants and unconscious collective needs, a distinction which is made against the backdrop of an epistemology that gives precedence to social *structures*. This realist epistemology emphasizes the shaping of human behavior as the result of social structures in society, such as class, education, gender or ethnicity. The structure approach entails a collectivist view of knowledge as something that is defined socially, for example as the result of the division of labor in society.

The structure approach often views information needs as "objective" in relation to a specific knowledge domain, academic discipline or profession [e.g.10], [e.g. 11]. There are always given solutions to the problems specific for a certain practice, from which it follows that it is possible to more or less objectively define information needs and, thus, relevance. Concerning empirical studies, the approach, as traditionally applied in user studies, usually prefers large surveys where relations between structural factors and behaviors, alternatively experiences, can be "discovered" [12], [13]. This can be exemplified with one of the research questions in Maurice Line's report from the, at that time ground breaking, INFROSS project: "/…/ did the basic pattern of information need divide according to discipline, or according to environment, or what?" [13, p. 415]. Individual information seeking practices can from this perspective be supported by information systems or by the working methods of LIS professionals, which primarily contribute to making the basically "objective" information needs of the user visible. The user can thus be more or less aware of her/his own needs.

From the point of view of the structure approach, information seeking is portrayed as something that is enacted in practices whose rationality is defined at the collective, and not at the individual level. Information is often treated – in accordance with the conduit metaphor – as something that represents an external reality. Accordingly, information seeking is seen as the transferring of facts or opinions from information systems to individuals. If the information need is regarded as something objective, it follows that relevance can be assessed in an objective[2] manner. The important point to make here, is that the kind of *instrumentality* which this approach illustrates goes beyond the objectives of single individuals. Instead, it portrays socially oriented objectives produced within different contexts as something that determines the actions of the individual. To oversimplify, context is here defined as

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[2] However, when objective relevance is discussed in research on relevance, it is from the point of departure of a *system* driven approach where relevance is seen as a relation between query representation and "content" of retrieved information. A system driven approach is out of scope for this paper. See Borlund [14] for a thorough discussion of this issue. When we use the term "objective" in this paper, we instead refer to a specific view on the relation between human knowledge and the world.

social structures that determine the individual's range of action. In IS research, this approach has not been dominant since the 1970's.

2.2   The Individual Approach

Towards the end of the 1970's and in the beginning of the 1980's, research based on the structure approach increasingly received criticism from the international research community. A recurrent theme in this critique was that a research focus on structures positioned the information system ahead of the user [e.g. 15], [e.g. 16]. With this critique as its point of departure, a user-centered epistemological approach, which gave precedence to the individual, grew stronger. Instead of measuring the information needs, seeking and use of different groups, like the structure approach recommends, the individual approach mediates an interest in how single individuals construct meaning through more or less dynamic information seeking processes. A prominent tradition in this approach, among others, is the cognitive viewpoint [17]. With this viewpoint in mind, an information need can, somewhat simplified, be seen as an expression of a "deficiency" in the cognitive structures of an active individual when faced with a problem solving situation, for example the solving of a specific work task. An observation to be made in connection to this is that the cognitive viewpoint positions structures in a cognitive framework instead of a societal one.

The kind of instrumentality that develops from this viewpoint focuses on individually formed objectives, created in relation to specific tasks solved in specific and, from our point of view, narrowly defined situations. Hence, information seeking is regarded as the expression of a rational practice, in the sense of being founded in the individual's ability to apply the faculty of reason when solving a task. With this said, it is important to recognize research in this approach that has also included affective aspects [18]. Furthermore, another theme in the individual approach is how individuals' information needs and relevance assessments develop dynamically over time in the process of information seeking [e.g. 19]. As in the structure approach, information seeking tends to be illustrated and analyzed with the conduit metaphor as point of departure, but the content of the information is assessed according to the effect it has on the cognitive structures of the active user, rather than according to external and objective criteria. The individual approach thus relies on idealist assumptions about the relation between human knowledge and the world.

The individual's information seeking process can be supported by information systems or the working methods of LIS professionals, which primarily help to make the individual aware of the character of her information need. Relevance is from this perspective defined and assessed by the individual user in relation to task solving. Such a view on relevance has been dominant since the 1990's and it has been presented in the form of different types where each type includes a particular focus [20]. A recent trend can be exemplified by Pia Borlund [14] who highlights "situational relevance" as the most fruitful type, building on the writings of Patrick Wilson. Context is by Borlund positioned in the mind of the user and it is narrowly defined in the following manner:

> *The context, i.e. the user's perception of a (work task) situation, is a psychological construct that represents the user's assumptions about the world at a given moment.* [14, p. 922]

We will now proceed to what we regard as an important and complementary perspective to the two already introduced.

2.3   The Communication Approach

The third approach gives precedence to *communication*. This approach argues that different knowledge claims and, hence, information needs and relevance, are formed through linguistically communicated processes of negotiation. There are several more specific theoretical traditions which would agree with this assumption, for example discourse analysis [21], [22], but we want to make a case for neo-pragmatism. Pragmatism and neo-pragmatism has been touched upon before in IS research [23, p. 3], [24, p. 89], [8, p. 278] and recently, it has been more thoroughly introduced by Sundin and Johannisson [25]. Neo-pragmatism, which is dealt with in more detail in the next section, proceeds from the linguistic turn in the human and social sciences and, in addition, it acknowledges a fundamental instrumentality in the sense that all human beings always act with a specific objective in mind. While the individual and structuralist approaches encompass instrumentality as an implicit assumption, neo-pragmatism makes this assumption explicit. In doing so, neo-pragmatism provides a helpful tool when dealing with the kind of instrumentality that characterizes LIS practices, and, in this case, information seeking practices.

From a neo-pragmatist viewpoint, information seeking (including the shaping of information needs and relevance assessments) is a social practice. A social practice is defined here as an institutionalized activity that consists of more or less formal sets of rules concerning, among other things, what should be considered "proper" information seeking. The institutionalization of social practices takes place in different communities of justification. This is where the sets of rules are negotiated and become formalized. These processes of negotiation are enacted through the linguistic use that individual agents/groups of agents make of different social interests. In other words, the significance of information seeking, information needs and the relevance of information should be regarded as formed through negotiations within different communities of justification. For example, in the nursing profession, professional information and information seeking practices have proven to be useful tools in the professional project of nursing [26]. The professional information of nursing symbolizes the maturity of nursing as a profession in its own right, based on a knowledge system of its own. The new professional identity of nursing, which is negotiated and mediated through the nursing literature and training, constructs the nurse as an "information seeking professional" who uses nursing research as a foundation for her work.

The communication approach shares the interest in the social aspects of information seeking practices that is emphasized in the structure approach. But we argue that the neo-pragmatist tool is more suitable in order to illustrate the contingent character of the social, that is, the possibilities for a single individual, or for groups of individuals to, in historically and geographically specific situations, influence the shaping of the social. It also enables a different and complementary view on the role

of information. Instead of seeing information as something that is transferred from one person or information system to another, information is a tool for the mediation of the rules that apply within different communities of justification [25].

The communication approach proposes a dialogic view of identity, knowledge formation and other social practices that unites an interest in the social aspects of information seeking practices with an interest in how individuals act upon the social by using linguistic and physical tools. It is in order to create such a deepened understanding of the interplay between individuals and the contexts that these individuals contribute to creating, while at the same time being regulated by them, that we want to introduce a neo-pragmatist approach inspired by Foucault. Such an approach also has consequences for the working methods of LIS professionals; in user education, for example, it emphasizes that one of the most important elements of such practices is to mediate an understanding of how information is assessed as relevant within different communities of justification. User education carried out along these lines creates an awareness of cognitive authorities [cf. 27] concerning the assessment of information resources within these communities. In the following, we will briefly introduce our deployment of a communication approach, that is, a neo-pragmatist approach supplemented with a Foucauldian notion of power.

3 Neo-pragmatism, Communities of Justification and Governmentality

According to neo-pragmatism, the question we should be interested in is not whether a specific knowledge claim is "true" or not, but whether it is useful, for whom and for what purpose; knowledge is a tool for action and not something waiting to be discovered. Humans actively interact with their environment in order to obtain their goals by using the tools that this environment offers, which illustrates the basic instrumentalist assumption of pragmatism. These tools are developed within so-called communities of justification that give them meaning, and the same tools can have different meanings within different communities of justification. Rorty [28, pp. 24, 35] argues that language is the most important tool available to human beings. He wants to override the traditional and unfruitful dichotomy between reality and linguistic representations of this reality and focus on how knowledge of the world is given legitimacy. Neo-pragmatism could thus perhaps best be described as a post-epistemology [29].

To Rorty, different knowledge claims are given legitimacy within different communities of justification. It is in these arenas that the validity of specific knowledge claims is decided upon, an assumption that also entails a view of how relevance is assessed in LIS practices:

> *[J]ustification is not a matter of a special relation between ideas (or words) and objects, but of conversation, of social practice. /---/ The crucial premise of this argument is that we understand knowledge when we understand the social justification of belief and thus have no need to view it as accuracy of representation.* [1, p. 170]

From a neo-pragmatist standpoint, information seeking practices are always enacted against the backdrop of different knowledge claims, negotiated in different communities of justification. If specific knowledge claims are judged in different, and sometimes conflicting, communities of justification, it means that information needs and relevance should be regarded as the results of linguistically communicated processes of negotiation. Hence, if we want to understand how information needs and relevance are shaped, we have to explore how different communities of justification – the different contexts – that surround information seeking practices work. An understanding of users' information needs and relevance assessments should, from this perspective, start in an understanding of the communities of justification the users participate in. Such a view gives priority to the study of the individual user as an active agent, positioned in different communities of justification that provide the tools by which the user gives meaning to different tasks and situations.

Rorty's neo-pragmatist approach acknowledges the instrumental character of all human action. We regard communities of justification as a fruitful way of visualizing those discursive arenas – that is, those contexts – where the criteria against which instrumentality is judged are negotiated. The concept therefore provides an important tool when trying to understand the formation of information needs and relevance. But as we have already pointed out, Rorty's approach is somewhat insufficient when you want to identify and explore the potential conflicts of interest both within and between different communities of justification. As a remedy for this weakness, we want to explore power issues with the help of Foucault.

The individual approach, where the solving of narrowly defined tasks is put at the fore, runs the risk of not recognizing conflicts and, hence, the power relations that permeate the construction of the task and its possible solutions [e.g. 6, p.761]. Therefore, a discussion of power can contribute to an understanding of why certain information resources are considered more useful than others, why certain information is considered more relevant than other, and the criteria against which such assessments are made. Research performed with the structure approach has already shown that, for example, professions, academic disciplines and knowledge domains play an importing part in establishing those criteria. To explore how competing epistemologies and methodologies of research are used as instruments in this respect is therefore an interesting research question when dealing with information seeking practices. But we argue that it is important not to reproduce the view that, for example, academic disciplines determine the conduct of individuals in an "objective" manner, thereby manifesting a realist epistemological approach.

Rorty [28, p. 69] himself refers to Foucault when he argues that power is not to be considered as something always oppressive and negative. We agree with Rorty in acknowledging that Foucault's greatest contribution concerning power issues is precisely that he shows that power can be enacted in various ways, in various situations, and by various people; power relations permeate our life worlds and are productive in that they create social practices. In spite of his wide definition of power, Foucault has been criticized for not allowing single individuals any agency as to influencing the disciplinary mechanisms that regulate their life worlds. Foucault has met this critique by defining power, as opposed to mere physical violence or dominance, as something that can only be exercised over individuals with the potential to act freely in a number of ways [30, p. 97ff.]. We find that this

conceptualization of power nicely illustrates the dialogic character of the relation between individuals and the contexts that simultaneously form and are formed by those individuals. It also illustrates the importance of language in these processes of negotiation.

Both theoretically and empirically, Foucault has explored how different power relations are shaped and enacted. From the perspective of the social sciences we find, like many others, that Foucault's [3] way of dealing with power in terms of *governmentality* provides the most fruitful approach. According to Nikolas Rose, Foucault provided methodological recommendations that

> /.../ *defined their problemspace in terms of government, understood, in the words of Foucault's much cited maxim, as 'the conduct of conduct'. Government, here, refers to all endeavours to shape, guide, direct the conduct of others, whether these be the crew of a ship, the members of a household, the employees of a boss, the children of a family or the inhabitants of a territory. And it also embraces the ways in which one might be urged and educated to bridle one's own passions, to control one's own instincts, to govern oneself.* [31, p. 4]

The quote above illustrates a methodological approach to power which both emphasizes that governing practices are heterogeneous and that those who are governed are active contributors to these practices, just as those who govern. To the list of examples of groups that are involved in governing practices it is easy to add users of information. How different users engage in information seeking practices is partly dependent on how information needs and relevance are shaped by those who provide the conditions for those practices. This could be exemplified by how text books on information seeking mediate views on the professional expertise of librarians and the position of the user [c.f. 32]. By studying these different agents – users, mediators and producers – in relation to each other, a deeper understanding of the governing practices at work when information needs and relevance are created, sustained and transformed can be obtained.

In the governing of information needs and relevance it is not only the users of information who shape the objectives of their information seeking practices. The objectives of the producers and the mediators of the conditions for information seeking are equally influential; "Practices of government are deliberate attempts to shape conduct in certain ways in relation to certain objectives" [31, p. 4]. Governing practices are thus always instrumental, regardless of which agent that enacts them [3, p. 93], [30, p. 147]. In LIS, instrumentality is inherent both in the individual and the structure approach but focus has been put either on individual objectives or on objectives of social institutions. This means that emphasis has been put *either* on the experienced wants or unconscious needs of individual users *or* on the social structures that are portrayed as governing the wants and needs of individual users. Instead we wish to emphasize the dialogic relation between these two analytical levels. It is through such a double analysis that the conflicts between different objectives, shaped in different communities of justification, can be identified and explored.

We will now conclude with some remarks on the implications of this approach for LIS research.

4   Concluding Remarks

Research with an individual approach to information needs and relevance has produced significant contributions to our understanding of how individual human beings, actively engaged in information seeking activities, construct meaning from information. The instrumentality of information needs and relevance is in this approach based on objectives formed in the individual mind. In this paper, though, we argue that the dominant view of today on information needs as an expression of a deficiency in individual cognitive structures in relation to the solving of a specific task in specific and narrowly defined situations is insufficient. This insufficiency includes how the issue of relevance is dealt with, even when developed and labeled as situational relevance. The definition of context that follows from this approach is too narrow to include power relations. Instead, we argue that a certain task or situation is given meaning when it is seen as part of a specific community of justification.

Research with a structure approach emphasizes the importance of the social level in information seeking practices, but the relation between social structures and individuals are, from our point of view, given far too determining a character. In this approach, social structures – that is, contexts – force individuals to act in a certain way. Furthermore, it entails the realist assumption that both information needs and relevance can be assessed in a more or less objective way. The formation of objectives lies beyond the control of individual agency, thereby positioning the instrumentality of information needs and relevance in social structures alone. Instead, we argue that a more nuanced understanding of human' information needs and relevance assessments can be reached by focusing on information needs and relevance assessments as elements of a simultaneously regulated and regulating practice. The governing practices through which this regulation is enacted take place in different communities of justification. Thinking of contexts in terms of communities of justification positions instrumentality in the dialogic interplay between individual agency and social interests.

A methodological consequence of our approach would be to focus on how governing practices are enacted within specific communities of justification. Here, what is considered to be the expertise within this community, and which cognitive authorities that are considered to possess this expertise, is of utmost importance. Concerning information needs and relevance, various cognitive authorities contribute with different kinds of expertise. For example, in health care an expertise built on a biomedical perspective often conflicts with a psychodynamic one in the practice of diagnosing mental illness. In line with this, there are specific sets of tools that create information needs and the criteria against which the relevance of information is assessed; thus, tools both embody and mediate governing practices. Such tools can be exemplified by articles in scientific journals, classification systems and thesauri that mediate the above mentioned conflicting forms of expertise, including a preferred hierarchical ordering and "objectification" of different knowledge claims. A methodological focus on tools and governing practices helps to illustrate the dialogic relation between individuals who actively make use of the tools and the environment that offers these tools.

By including the social level, we also want to further the possibilities for LIS researchers to increasingly transgress the boundaries of other social sciences in

dealing with important empirical questions. LIS emanates from instrumental concerns, that is, the creation and continuing improvement of information services and systems. In order to further these aims it is important to have a dialogue with other social sciences so that LIS does not run the risk of trying to invent the wheel again. But it is equally important to recognize that LIS entails exclusive issues and in order to create a deeper understanding of these it is crucial to improve the dialogue with LIS professionals. To them the importance of the social level that we have argued for in this paper is already evident since knowledge of users and information systems is always imbedded in those different institutional settings where these professionals work. Thus, an improved dialogue between LIS researchers and practitioners would help to show the necessity of including the social and communicative aspects of information seeking practices, no matter if these practices are carried out in the professional field or the field of research.

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