
Constituting "Information" and "User" as Research Objects: A Theory of Knowledge Formations as an Alternative to the Information Man -Theory

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INTRODUCTION

The article concentrates on epistemological and methodological issues. Theories of the nature of information and its users are metatheories which guide the formation of concrete research programs in information seeking research. The article presents the discourse analytic viewpoint, the "theory of knowledge formations", as an alternative to the cognitive viewpoint, "the information man -theory". The implications for the development of research strategies are discussed.

Many researchers have concluded that the central weakness of the cognitive viewpoint is that it pays little attention to the social aspects of information processes, either in terms of the socio-cultural context of the users or the socio-cultural context of the information system (see e.g. Capurro 1992, Frohmann 1992, Hoel 1992, Miksa 1992, Vakkari 1994). Belkin (1990) has emphasized that we should study large-scale social knowledge structures in order to understand how and why people seek information. It is widely recognized that both individual information needs and institutional information access are socially conditioned. However, conducting information seeking research on a macrosociological level has turned out to be difficult within the cognitive viewpoint, since it is basically a theory of how individuals process information. The cognitive viewpoint offers no concrete and obvious solutions to the question of how to conceptualize and study the socio-cultural context of information processes.

Capurro (1992, 83) has remarked that the central concept in the cognitive viewpoint is not information but man. It is a theory about the *information man* – about the *individual* as a seeker and interpreter of information. Within the cognitive viewpoint, the study of information processes means studying the user's mental-cognitive processes. Information is defined as something that

modifies an individual's knowledge structures or knowledge states (e.g. Ingwersen 1992, 33). Under these premises information science theory is primarily concerned with the impact of information on the receiver (Capurro 1992, 87).

In Capurro's (1992, 87) opinion, the main question of our field is *how knowledge is constituted and shared*. Also Wersig (1992, 213) proposes that the theoretical framework of information science should be based on a critical examination of the concept of knowledge. Thus the user-centered approach in information seeking research should not mean – and need not solely mean – an *individual-centered* or a “subjectivist” research approach as opposed to the “objectivism” of the classical intermediary-centered approach (cf. Itoga 1992; see also Dervin & Nilan 1986).

The discourse analytic viewpoint is basically a theory about the production of knowledge through language (see also Hall 1992b, 291). The viewpoint abandons the individual as the basic unit of analysis, and shifts the focus to a more general level: to the variability of knowledge formations. The socio-cultural context of information processes is located in discourses, which provide different perspectives and subject positions for knowledge construction and systematization.

THE DISCOURSE ANALYTIC VIEWPOINT AS A NOVEL ORIENTATION STRATEGY

The discourse analytic viewpoint is based on the work of Michel Foucault, especially his “Archaeology of Knowledge” (1972). It is both a linguistic-philosophical theory and a concrete research method. Discourse theory is based on specific notions about language, reality, knowledge, and the individual. These notions are as valid as a metatheoretical basis for information science as those of the cognitive viewpoint. In the field of information science, the Foucauldian discourse theory provides a novel orientation strategy. It adds to the list of metatheoretical options available.

Metatheories (like the cognitive viewpoint or discourse theory) should first and foremost be understood as fictions, which have a number of practical implications for research (Dervin et al. 1992, 7). Metatheories provide guidelines and strategies for understanding social phenomena and suggest ways for the theorist to approach these phenomena. They guide us in talking about or conceptualizing the events and processes that exist in the social world (Vakkari 1994, 5). The discourse analytic viewpoint opens up new possibilities for constituting the “user” and “information” as research objects.

The discourse analytic viewpoint and the cognitive viewpoint approach phenomena from different perspectives. The viewpoints differ primarily in their way of explaining differences – where the most central differences are located, how differences are defined, how differences are studied. Dervin (1993) stresses that we should always conceptualize the explanation of differences as

differencing, a communicating move. Differences can be conceptualized in multiple ways, and we are always forced to choose an entry point (ibid., 50). The discourse analytic viewpoint conceptualizes differences in a way that diverges from many earlier explanatory models.

In order to make my argument for a research strategy that abandons the information man as the principal unit of analysis, I will analyze some underlying assumptions of the cognitive viewpoint. However, the analysis is both one-sided and oversimplified, since the cognitive viewpoint is in fact comprised of many different schools of thought¹. It can be applied in multiple ways and its theoretical assumptions are continuously being developed. This means that a critique of the cognitive viewpoint is in fact a critique of historical forms of thought. The dichotomy between the individual's inner world and external reality did not originate within the cognitive viewpoint. Western thought since Plato has emphasized the centrality and sovereignty of the individual. The individual is understood as the center of awareness, and other subjects and the external world are seen as extra-discursive objects of his/her observational processes. As a result, the individual is seen as an autonomous and fixed entity, distinctly different and separate from other such autonomous, fixed entities.

The modern subject/object -dichotomy forms the background for the so-called rationalistic paradigm of information seeking research (Capurro 1992, 84–85; Frohmann 1992, 142). Within this paradigm, the focus is on instrumental information use. Information seeking is studied in clear-cut, most often professional problem situations. These situations have been used as the basis for the construction of “paradigmatic models” of information seeking. Hence research has mainly been concerned with rational use of information (Capurro 1992, 84; Miksa 1992, 235, 240). The focus is on the importance of information in problem-solving and rational decision-making.

HOW REALITY GETS CAPTURED IN INFORMATION

It is a convention in LIS-talk to emphasize that each individual receives and interprets information in his or her own way, affords it a personal meaning. The reception of information is mediated by a person's existing knowledge state and knowledge structures. Information is something that one individual has actively generated, and something that another individual may choose to internalize. When information is perceived and received, it affects and transforms the recipient's state of knowledge (e.g. Ingwersen 1992, 32–33). The focus of these ideas is consistently on the consciousness and subjectivity of the individual.

The emphasis on the allocation of meaning by the individual was originally intended as a rejection of the notion that information might have universal applicability and an unambiguous relation to reality. It was necessary to somehow incorporate the aspect of meaning into the concept of information. But, as pointed out by David Silverman (1989, 38–39), a research approach that

focuses on “subjective meanings” is in fact thoroughly wedded to the myth of objective knowledge, since it is assumed that there are meanings and fundamental truths which are independent of language and context. When the research object is defined as

the inner worlds of users, where most of the important acts of communicating – interrogating, interpreting, creating, resolving, answering – are performed, (Dervin 1989, 217)

it is the individual’s interpretations and “inner worlds” that are taken as facts and fundamental truths. We are still dealing with a research approach that omits the fundamentally social nature of all knowing (Parker 1989). It follows that knowledge is either an unmediated description of external reality or an unmediated description of internal reality. It is assumed that we have direct and unmediated access to the individual’s mind. Western thought since Plato and Aristotle has assumed unity between the individual’s mind and speech (Sampson 1989). Speech is understood as the unmediated expression of the individual’s original thoughts and experiences. The individual is understood as an integrated universe and a stable and distinctive whole. As a result, the individual is set contrastively against other subjects and the surrounding world. (ibid., 13.)

The emphasis on the user’s mental-cognitive processes and subjective knowledge structures has some important implications for research. It removes the individual’s subjectivity from collective reality. Theorizing about information processes turns into theorizing about subjectivity. If we understand that every individual has his/her own subjective world of meanings and knowledge structures, then the individual becomes the central uncertainty factor from the point of view of information transfer. If the user is seen as a chaotic and individualistic seeker and interpreter of information, then the other side of the equation, information, must be something certain and controllable. In Belkin’s (1990, 12) definition, information science studies “the interaction between people and objective knowledge, in order to discover more about subjective knowledge structures”.

Following de Mey’s (1977) classical definition, Belkin (1990, 12) states that any processing of information is mediated by concepts and categories which, for the individual, are the model of his world. In the cognitive viewpoint, concepts and categories are defined as “mental representations” (Ingwersen 1992, 44). If we accept Wittgenstein’s (1972) statement that private languages cannot exist, subjective knowledge structures and world models cannot exist, either. Concepts and categories are material signs of language. The world and its objects are not constituted and defined in individual cognition, but in representational practices, discourses. The focus on subjective meanings misses the critical role played by linguistic constructions in social life.

It is understood that language originates in and is learned through individual acts of interpretation. The individual’s thinking is understood in Platonic terms: as pre-linguistic, immaterial ideas which can for communication purposes, as if in afterthought, be attached onto the signs of language. But there are no immaterial concepts, categories or ideas. If I invent a new word for an idea of mine, I obviously cannot use it if I want to make myself understood to other people. Communication would hardly be possible without a common frame of comprehension and negotiation. No concepts, thoughts or meanings can exist outside language. Language is the very stuff that consciousness, internal speech, is made of (Volosinov 1986). Without language we cannot think. Without words there is no consciousness (Williams 1977).

Even if we must act in everyday life as if language described reality and our thoughts in a direct and unmediated way, language is not just a tool or an instrument to be taken up and put down at will, when we have something to communicate (Volosinov 1986). Language constitutes the person as a subject in the first place. From the point of view of the individual, language is always already there, finished: it cannot be created, it can only be used – either routinely or reflexively. Specific sociohistorical traces contained within the language system permeate the very key of personhood (Sampson 1989, 13). They structure our experiences, also the very experience of consciousness and self, even as those traces are usually unavailable to immediate awareness (ibid., 13). Normally linguistic concepts and categories function rather like a pair of glasses: what we look at, we see through them (Wittgenstein 1972).

Meanings, values, and ethical principles are not constructed by individuals, they are constructions that have been created in social interaction (Williams 1977). The study of information processes is research into social and interactional processes of sense-making. The constantly evolving sense making -theory also replaces the cognitive viewpoint’s focus on mental representations and subjective knowledge structures with the concept of dialogue (Dervin et al. 1992; Dervin 1994). Its epistemological and ontological basis closely corresponds to that of the discourse analytic viewpoint. Language is seen as the primary shaper of observations and interpretations of the world (see Dervin 1991, 46–47; Dervin et al. 1992, 7). Information is about what people do with language and what language does to people.

Both theories view information as something that is formed in an episteme, in a web of knowledge typical for a historical period. Within this web also the individuals are shaped into subjects, at the same time as they together, by communicating, weave the web anew. Information is about developing models of reality, which is something people inevitably do together with others. As Dervin (1994, 372) puts it, reality gets captured in information. Information holds variable and constantly changing versions of reality. The discourse analytic viewpoint locates the socio-cultural context of information processes

in discourses, which provide different perspectives and subject positions for knowledge construction and systematization.

EXPLAINING INFORMATION SEEKING BEHAVIOUR

Information needs are often regarded as the cause of information seeking behavior (Itoga 1992, 341). It is understood that information needs arise when an individual finds himself in a problem situation, when he or she no longer can manage with the knowledge that he or she already possesses. In Kuhlthau's (1993, 347) formulation information seeking is caused by "uncertainty due to a lack of understanding, a gap in meaning, or a limited construct"². The challenge for research is to design information systems which enable people to move *from uncertainty to understanding* (ibid, 353). Information is a supplement to the user's understanding of the surrounding world when in a state of uncertainty (Ingwersen 1992, 60).

When conceived in this way, information is something more fundamental than messages or meanings (see Ingwersen 1992, 25). Information must be instructive about the nature of reality, it must point to what is real, and therefore it must reduce the uncertainty in reality (Dervin 1991, 44). Information is understood as something that the individual necessarily needs in order to cope with problem situations. It is the prerequisite for coping in modern society and for rational behavior:

Rational behaviour, in all senses "rational", needs knowledge. This knowledge has to be transformed into something that supports a specific action within a specific situation. People cannot perform this task appropriately by naive means because the situation of knowledge has changed. Rational behaviour in this sense has become very complex. Actors – whether they are individuals, groups, organizations, or cultures- need help.
(Wersig 1992, 208–209)

The humanistic objective of information science is to help people to gain knowledge, to help them solve problems and cope with the various tasks and situations they run into. The rationale for research has to do with the capability of information to support problem-solving and rational decision-making³. Researchers do not assume that all individual or social problems can be solved by improving access to information. But often information needs are implicitly understood to concern only the kind of information believed to be necessary to people. It is assumed that there is a consensus on what kind of information people need in order to cope in modern society. Often research is implicitly based on a universalizing notion of knowledgeable and rationally behaving subjects (see also Roberts 1982, 96–97).

In the reduction of uncertainty -discourse objectivity and autonomous expert knowledge are implicitly viewed as properties of information and the mediator,

whereas subjectivity and uncertainty, varied emotional and knowledge states, are properties of the user (see also Frohmann 1992, 142). Between objective knowledge structures and the individual's subjective knowledge structures exists the intermediary's "zone of intervention", which according to Kuhlthau's (1993, 84) definition is

the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.

The discourse analytic viewpoint stresses that the variety in knowledge structures is not caused by differences in individual interpretations. Novel or alternative interpretations evolve from new kinds of social experiences, practices and relations (Williams 1977). Knowledge and knowledge structures are neither objective nor subjective, but intersubjective, produced within a shared system of meanings. Knowledge consists of a mix of scientific or expert knowledge and unconscious, selective and culture-specific background assumptions. In certain social contexts and within certain social interests these assumptions appear as factual or valid, whereas in other social contexts they are seen as questionable.

Dervin (1994, 379) emphasizes that uncertainty, knowledge gaps, lack of understanding and limited constructs are part of our information world. They pertain to information and information systems as much as to users. Points of incompatibility and uncertainty can be found everywhere, since knowledge is constructed in "systems of dispersion" (Foucault 1972). Novel interpretative frameworks are developed as "corrections" to prior frameworks. Established perspectives do not disappear with the appearance of new ones. Each field of knowledge consists of several competing discourses, based on incompatible and contradictory assumptions. When the lense of the production of knowledge changes, the facts also change.

Belkin (1990), too, emphasizes that knowledge structures are socially and culturally constructed. But an emphasis on the social and cultural nature of knowledge structures might have a number of implications for research. Belkin (ibid., 12) views the cultural nature of knowledge structures as a possibility for attaining generalizable knowledge about the information seeking orientations of various groups. In the attempts to take the social and cultural context of information seeking into account, the notion of mutually different, but internally coherent individuals is often replaced by a notion of mutually different, but internally homogenous groups. It is difficult to incorporate the contextual nature of information or the contextual nature of the user into theories that view information as the reduction of uncertainty.

Differences in information seeking behavior have been explained mainly by the following factors: 1) differences in the cognitive skills, knowledge states

and motivation of individuals, 2) differences in the educational levels and socio-economic circumstances of social groups, 3) differences in the problem situations or subject areas that trigger information seeking.

Generalizations about differences between individuals or groups are often problematic. Firstly, the diversity of the individual's social roles, tasks and identities is not taken into account. When, for instance, an essentialist notion of "social class" is adopted, it is assumed that a person's level of education or socio-economic state regulates his/her behaviour and possibilities in all areas of social life. Social class is assumed to be a real and primary context of people's behaviour, not just an established classification practice.

Secondly, it is impossible to get unmediated knowledge about a person's cognitive skills or even information seeking behaviour, because the ways in which they are accounted for are always mediated by culturally constructed interpretative repertoires. The explanations should not be taken as facts about the permanent attitudes or actual behavioural patterns of individuals or groups (Potter & Wetherell 1987). There is, for instance, a wide range of views on how an individual best manages in modern, complex society. Individuals (researchers and users alike) are conscious of their views on society and of what they see as problems, but not of the initial conceptualizations and choices of perspective that allow them to formulate their views and see certain things as problems.

The sense making -theory does not explain differences in information seeking behaviour as differences between individuals or groups (see Dervin 1989, 226). Differences are explained by contextual factors: by the situations, subject areas, interests or problems that trigger information seeking. When information seeking is examined as a context-dependent activity, it is essential to start with the assumption that individuals are not stable and autonomous entities. An individual is an "information seeker" only inside a particular practical context, a particular subject area or knowledge field (Capurro 1992, 90). The potential for various lines of action in an information seeking situation does not primarily depend on the individual. The potential for finding the desired information depends on the first place on the knowledge representation and classification practices.

Discourse analysis is a subject-based approach. The unit of study is a particular area of information seeking, a concrete subject area or a knowledge field, and the objective is to identify the different knowledge formations, or discourses, inside that field. It is assumed that competing discourses approach the subject area from different perspectives, which in turn causes systematic variation in knowledge structures (knowledge representation and classification practices). Hjørland and Albrechtsen's (1995) "domain analysis" is a research approach of a related nature, a collectivistic, knowledge formation-oriented viewpoint as opposed to user-psychological and individual-centered approaches (see *ibid.*, 401–402).

KNOWLEDGE FORMATIONS

Discourse theory emphasizes that the user has different identities and subject positions in different social contexts (Wetherell & Potter 1988). In different situations an individual may, for instance, be parent, child, teacher, student, professional, customer, buyer, seller. The person's rights and duties, positions and resources, competencies and knowledge states, vary according to context. However, the individual cannot freely set the terms for his/her identities and interpretations. Since language is what consciousness is made of, we have to use the signs of language also when we make sense of and describe ourselves and our understanding. When we use words, we formulate ourselves from the point of view of our community (Volosinov 1986).

Interpretative resources contain residues from the whole history of the societal form. But interpretative resources are variable and conflicting, continuously changing and developing – as are the subjects and their knowledge states. The subject is constituted and fixed in place by socio-historical language, but otherwise the subject is open-ended, fragmented and multidimensional (Parker 1992, 87; Sampson 1989, 14). It follows that research into "user perspectives" is in fact research into more general knowledge formations.

The potentials, boundaries, and modalities for the production of knowledge are set by discourses. Discourses are knowledge formations that do not consist of single fragments of knowledge but of broad totalities which give form to reality. A discourse is a group of statements which provide a language for talking about – i.e. a way of representing – a particular kind of knowledge about a topic (Hall 1992b, 291). A discourse makes it possible to construct the topic in a certain way. It also limits the other ways in which the topic can be constructed. Discourses systematically form the objects of which they speak (Foucault 1972, 49). Discourses consist of particular kinds of conceptualizations that allow reality to be "known" from a certain angle, and from that angle only. In different discourses, different aspects of reality become the focus of knowledge production. Discourses provide the reserve of themes and points of view that we use in sense-making. They enable us to know certain things and to speak in certain ways. (Foucault 1972; Hall 1992b).

Discourses are based on a set of implicit statements, unspoken theories about the nature of things (Foucault 1972). Statements about the social world or the world of information are rarely ever simply true or false: they are selective. Two completely conflicting statements can be simultaneously "true", because they both bring out one side of the matter. When the starting-points and assumptions inherited from historically formed discourses are consciously examined, they always appear relative and open to questioning. But they mostly work as unconscious premises and unexamined reasonings. They build a body of knowledge which appears to be independent of specific interests and aspirations (Foucault 1972). But the perspective of knowledge production is always lim-

ited, and excludes from the concept of knowledge some aspects of reality (Hall 1992a).

Discourses are based upon classification procedures: on the selection, organization and combination of concepts. Concepts that have been tied together on the basis of certain background assumptions, are on the basis of different assumptions detached from each other, and linked to other concepts (Volosinov 1986). Let us, for example, think about the words "the people", "trash", "postmodern". In some discourses the words have a positive meaning, in others a negative one. Very different ideologies are concentrated in the same words. Since concepts (like information) belong to the language system, novel discourses have to work with the concepts established by prior discourses. But various social interests create their own accents and reference fields for the mutual concepts (Volosinov 1986). Discourses win over the speaking subjects by formulating a positive associative content for concepts by which they can locate and present themselves in a meaningful and favorable way in the field of social relations (Hall 1992a).

USERS AS CULTURAL EXPERTS

From the discourse analytic viewpoint the central problem for information science is the variability of knowledge formations.

This problem cannot be explained away by the equation objective knowledge structures/subjective knowledge structures. If we assume that the boundaries of social knowledge are set by discourses that categorize the social world and bring phenomena into sight, it follows that information, information systems and information needs are all constructed within existing discourses. Information needs are linguistic and cultural constructs, as are information systems.

The discourse analytic viewpoint views the production and use of information as something that is connected to variable social life-worlds and interests. From the discourse analytic viewpoint, the central problem facing information systems is not that the individual is incapable of conceptualizing his or her information need or does not formulate it in the same way as the information producer or the information system. Since we share language and culture with others, and since they have made us what we are, we have a common ground on which to act and communicate (Dreyfus & Rabinow 1982). Both the user and the information system function with existing concepts and categories. The central problem facing information systems is how to incorporate multiple viewpoints into the system.

Institutions are generally built upon fairly stable and dominant forms of thought, which Foucault (1980) calls "regimes of truth". The interpretative positions provided by dominant discourses may not be meaningful for the description and understanding of all cultural forms and social life-worlds. The

language user (including the information system) does not normally reflect on the subject position adopted in knowledge production and systematization, because certain approaches appear as natural and inevitable in certain contexts. It has, for instance, been natural in the context of information seeking research to focus on information needs arising from problem situations. But it is equally natural to assume that information needs arise more from selected interests and cultural expertise than from the lack of knowledge.

The theoretical arguments presented in this article suggest two important changes in the research perspective: 1) the conceptualization of users as knowing subjects, as cultural experts, and 2) the conceptualization of information systems as participation systems in the organization and systematization of social knowledge (see also Dervin 1994, 380). It is equally important to study the socio-cultural aspects and ideological nature of the information systems, as it is to study the socio-cultural aspects of the users. If the focus is shifted to the study of knowledge formations, information seeking research need not be either user-centered or information system-centered. The knowledge formation-orientation implies that we should study both the cultural production, organization and boundaries of information needs, and the cultural production, organization and boundaries of information systems. Information has ethical and political dimensions, and these dimensions are unavoidably also a part of the functions of the information system (Capurro 1992, 90-91).

The discourse analytic viewpoint emphasizes the user's embeddedness in culturally bound discourses. Information is not seen as that which instructs, but as messages produced within specific historical and cultural contexts and specific social interests. The cognitive viewpoint views the user as a possessor of "anomalous knowledge states", as a non-knower (see also Capurro 1992, 86). It also looks at knowledge as individual mental states rather than as a social and cultural process or a cultural product (Hjorland & Albrechtsen 1995, 409). Thus the ways in which the "user" and "information" are conceptualized have effects on research strategies (and also on the designing of information systems). If the users are seen as uncertain people who need help, there is a risk that the objective of helping the users is implicitly grounded on a faith in objective expert knowledge existing outside history, social relations and contradictory interests.

The main objective of information science is people confused by the situation of knowledge usage (which will become even more confusing in the emerging postmodern society). There is the need for people to be educated to behave in this knowledge environment, there is need for rules and guidance for these people, for systems and other means of helping them find their way.
(Wersig 1992, 209)

The objective of helping people to cope in the modern knowledge environment is unavoidably based on a one-sided and limited vision of knowledge.

According to Capurro (1992), information science needs a practical and rhetorical turn. This entails the conceptualization of users as knowing subjects in the practical-discursive context of everyday life. Wersig (1992, 213–214) suggests that information science research should be based upon the reflexive examination of such concepts as "knowledge", "reality", "rationality", "mastery of life", "fiction", "art" and "technology". It should study the meanings and interpretations they receive in different social contexts and fields of knowledge. Common sense or privileged meanings produced by dominant discourses are not enough to grasp these concepts, as specific interpretations set the basis for research strategies.

NOTES

- 1 Of the main schools of thought, cognitive psychology concentrates on the individual's cognitive, especially perceptual and judgmental processes, while cognitive anthropology studies cultural modes of interpretation.
- 2 Kuhlthau (1993) defines uncertainty as a cognitive state which appears as affective symptoms reflecting anxiety and a lack of self-confidence. Itoga (1992, 341) suggests that it is unnecessary to view information needs as psychological phenomena. Information seeking is linked to various contexts of social action (music, travel, work, research, etc.). Information needs and seeking are often more about living in a particular world than about uncertainty. Psychologizing and empathy with the user is all for naught, if the objective is to create information systems in which the user is built-in and which do not require an intermediary between the user and the system.
- 3 As valid as this view is within many areas of information seeking research, it easily leads to a very limited notion of information needs and uses. Information seeking motivated by, for instance, cultural interests, life-enrichment, the creation of positive self-identities, imagination-feeding, curiosity, etc., also has a legitimate claim to the attention of our field (Miksa 1992, 241).

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