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Discursive conditions of knowledge production within cooperative design

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Abstract

Alongside other methodological affinities between contemporary Scandinavian information systems research and social anthropology, the modes of reflexivity that have come to characterize each differ. Reflexivity in the former concerns an 'otherness' of technology, which is related to the users and their practices, while reflexivity within social anthropology concerns the encounter between the textuality of representations of others. Although the representational practices of the discipline continue to be a matter of concern for the latter, information systems research has not come to take such a concern as a clearly legitimate object of research. Drawing on Foucault, this paper aims to contribute to the development of information systems research work in ways that fortify our capacity to render the historicity and politics of representation. Three texts written by researchers from and associated with the Århus group in the period between 1970s-1990s are considered, with respect to the question of *how particular enunciations are linked to the construction of an expert domain, to new forms of legitimacy, and to the differentiation of successive 'movements'*. The paper suggests implications of such differentiations for how the object domain of information systems research has been shaped. Though legitimizing, the process of distancing effects the production of knowledge and folds technology, users, methods and research designers in a specific way. In these terms, the process of distancing works as a fixating gatekeeper that ex- and includes certain aspects of what it means to be a research designer and what kind of questions are legitimate to ask.

Keywords

Cooperative Design, Foucault, Process of distancing, Reflexivity

Introduction

While studying for my joint masters degree in social anthropology and information studies, I became aware of a deep parallel going on in each field. It seems that around the same historical moments that information systems research in Scandinavia began to reorganize itself as a discipline through an appeal to the importance of social context, social anthropologists were learning to take seriously the contextual character of their own representational practices. In each case, we see a new acknowledgement of particularity – both Scandinavian information systems research (SISR) and anthropological writing acquired a fresh recognition of the significance of 'context', and an attendant historicity and sociality of political import. It is important to recognize that the convergence of these fields goes beyond the uses of the one by the other, for example, much SISR utilizes data gathering techniques of social anthropology in the service of informing systems design work.

As a discipline, information systems research places high value on examining methods, which should be open-ended, reveal work complexities, support the development of better, more transparent technology, and which should stress a symmetrical relationship between users and designers. As such, the formation's values resonate significantly with what is happening within social anthropology: both areas have schools struggling to eschew hegemonic tendencies of what came before (rationalistic systems design, colonialist ethnography). The solutions these schools have gestured to seem quite similar in that each develops new styles of inquiries and new discourses that seek to equalize, balance and/or limit the intruder, be it a technical expert, technology, western commerce or an ethnographer and his/hers ethnography.

In this sense, each site of practice as academic discipline has undergone changes that were shaped by responses to their disciplinary forbearers – responses informed by understanding the objects of their productive activities as contingent and therefore political matters. Just as contiguities between these formations have been set into motion, there persists alongside their deep affinities a stark contrast. This concerns the mode of reflexivity that each has come to engage in as a collective endeavor.

Within SISR reflexivity concerns an 'otherness' of technology, which is related to the users and their practices. Within social anthropology the reflexivity concerns the encounter between the textuality of representations of others - the interaction between the ethnographer and the other and how they both influence the 'empirical' that they are part of. In this sense, the two subject areas can be characterized respectively by an 'extraverted' and 'introverted' reflexivity – both of which are operative in producing knowledge in new ways.

These two positions can be rendered critically as being acts of border consolidation for the disciplines that build frames of reference that define legitimate matters. Although, as Turner (2000:52) has noted, social anthropology pays greater attention to "reflexivity […] in theory and intention, [whereas] the practice of reflexivity has often done little to reinsert the anthropologist in representations of the field and the construction of knowledge about it," it remains the case that the representational practices of the discipline continue to be a matter of concern for its community of practitioners – knowledge production practices are organized with respect to this concern.

I have been moved by the question of how it is that, given its other affinities with social anthropology, systems design disciplines, especially in their anti-rationalist forms – have not come to be organized with respect to such a concern about the politics of representation within the written material that information systems research produces? In pursuing this question my intention, like that of social anthropologists with respect to their own field of practice, is to contribute to the development of information systems research work in ways that fortify our capacity to render the historicity and politics of representation as a key domain of concern.

Foucault – the methodological point of reference.

Foucault has been a fruitful point of reference for social anthropologists who would engage dialogues over the meaning of representational practices within the discipline (e.g. Abu-Lughod 1993; Latour 1987; Clifford & Marcus 1986). I would like to draw on just four aspects of Foucualt's work in order to think about the historical development of SISR and the particular mode of reflexivity that has come to be legitimate within it, with attention to how other modes of reflexivity have come to be excluded as markers of its practices. The aspects I draw on are *enunciation*, *discourse*, *régime of truth* and *condition of possibility*.

A beautiful feature of Foucault's work is its capacity to construct a position from where one might disturb things taken for granted, by investigating historical formations, institutional domains, their discursive practices, and their impact on different institutionalized ways of talking about specific topics. As Hacking (2002) has noted, Foucault writes histories of the present by analyzing the institutionalized discourses of previous epistemes, using history as a way to diagnose the present.[1]

Foucault suggests that it is possible, through such historical investigations, to see how we construct different things in certain ways: that we think, talk about and see objects or phenomena in particular ways, even though they could be thought, talked about and seen in many other ways - Foucault describes, for example, how madness has been enunciated both as part of everyday life and as a mental illness – that it is a discursive object, an object of knowledge (Foucault 1988):

"Systems of thought have surface that is discourse. Foucault gropes about for a definition of *énoncé* that is not quite sentence nor statement nor speech act not inscription nor proposition. It is not an atomistic idea, for enunciations are not isolated sentences that add up to a whole, but entities whose role is understood holistically by a set of interrelations with other bits of discourse. The same "sentence" about the bone structure of human hands and birds' talons is not the same enunciation in a Renaissance text as it is in a post-Darwinian comparative anatomy." (Hacking 2002:91, original italic)

A discourse in Foucaultian terms is a practice that influences the subject and speaks through it. Discourse is a kind of language that forms knowledge and shapes our understanding of objects and phenomena (Foucault 1972). If we accept that knowledge exists largely through such discourses, we are urged also to accept that that which has come to count as knowledge specifies what can be enunciated. Having accepted such construction we will be able to see that not only knowledge of objects and phenomena are produced in and via discourses; it is also a matter of the production of the very subjects who speak such discourses. Thus, discourses become an axis on the basis of which the identities of both subjects and objects of a knowledge domain emerge. For Foucault, the enunciations that instantiate a discourse actively define what can be said and who among the totality of individuals has the right to speak. Along this line of reasoning, Foucault urges us to ask after how and by whom discourses are applied and put to work in such a way that they become true:

"Truth is a thing of this world: it is produced only by virtue of multiple forms of constraints. And it induces rather regular effects of power. Each society has its régime of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned, the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true." (Foucault 1980:131).

Here, analysis becomes a story about the politics and economy of those social practices that we identify as sciences, institutional domains, domains of knowledge or expert domains. Foucault suggests that in the process of identifying a domain of knowledge, we look for the position that its subjects are able to occupy in relation to oppositional domains.

[1] Rose (1991) provides an eloquent discussion of this process with respect to the discipline of psychology.

This offers an opportunity to see how the condition of possibility of a domain is tied to and symbiotic with discourses that are both similar and divergent. In determining these discourses we will be able to see how the emergence and existence of a domain is possible only by relation to other discourses. A domain of knowledge, so to speak, lives on inclusions and exclusions of these other discourses, which take part in forming the condition of possibility of what is think-, talk- and seeable:

"We do not seek below what is manifest, the half silent murmur of another discourse; we must show why it could not be other than it was, in what respect it is exclusive of any other, how it assumes, in the midst of others and in relation to them, a place that no other could occupy. The question proper to such an analysis might be formulated in this way: what is this specific existence that emerges from what is said and nowhere else?" (Foucault 1972:28).

Locating the particular discourses will allows us to see how an expert domain appears and how such emergence is connected to issues of legitimacy. A Domain of expertise seeks to individualize itself in relation to other domains in a way that makes it unique and legitimate. As such, the legitimacy of a domain is tied to a clear defined area, by which it can raise itself by acting as the representative of a particular constituency (Foucault 1972).

The scope of the article

In my efforts to contribute to SISR as a domain, in which politics of historicity emerge as a central concern, I would like to draw on these Foucaultian insights to think about specific features of the discourses that have been put into circulation in its development over time. I want to think about how particular enunciations are linked to the construction of an expert domain, new forms of legitimacy, and the differentiation of successive 'movements' in relation to one another over time. I intend also to indicate implications of such differentiations for how the object domain of information systems research has been shaped. Within the parameters of the present essay, such a questioning must necessarily be of a skeletal, almost programmatic form. I have written an expanded account in Finken (1998).

In this article I want to consider some features of what I have come to regard as central texts from the 1970s-1990s written by researchers from and associated with the Århus group, known variously over time by such names as the collective resource approach to systems design (CRA), cooperative experimental system development (CESD), Cooperative Design (CD) and Scandinavian participatory design (SPD). The group has been influential in giving shape to the Scandinavian user-centered information systems research – a tradition that, politically and methodologically, has come, like social anthropology, to value reflexivity. I want to consider enunciations embedded in the following texts:

* Århuskonferencen, Proceedings from the Århus 1975 conference "Arbejdsformer i systemudvikling"

* "Computers and Democracy-A Scandinavian Challenge" from 1987

* "Design at Work: Cooperative Design of Computer Systems" from 1991

In choosing these texts, I aimed to trace a progression of enunciations over three decades. I chose the 1975 Proceedings because they seem to me to be a key space in which members of a nascent movement began to articulate their shared concerns and future program. They did good work there, because by the 1980s and 1990s texts coming from this movement had proliferated significantly. I singled out *Computers and De*mocracy and *Design at Work* on the basis of their popularity as citations among peers. It is without doubt that individual members of the Århus group have written scientific contributions – theoretical reflections, wider historical studies, and field studies - whose enunciative contents that may differ from the textual samples that I have chosen. And, as one insightful reviewer staunchly maintained, a book like *Design at Work* was built more as an effort to convince practical systems developers of other ways of working rather than as a scientific contribution. Without understating the importance of those texts specifically characterized as scientific (as opposed to rhetorical?? – for what could 'convince' actually mean in such a differentiation?) it remains the case that books like *Design at Work* are resilient

points of reference that in important respects stand as the tradition inaugurated through the work of the Århus group, as is amply demonstrable by its consistent circulation among information systems research educational institutions.

Apropos the distinction between texts meant to be scientific contributions and those meant to convince, it is surely the case that in reading these texts I am in no position to offer any claims about what was really going on - in the everyday situations behind the texts. However, with Foucault I will assume that written material is that part of intellectual work through which meaning is accorded to what systems development is and becomes – that part of work that constitute public representations of findings, experiences and beliefs, which contribute to the formation of certain truths that pertain to the construction of the systems development in a particular way.

This paper is not an effort of critical rejection of the cooperative movement's findings and assumptions. Rather, I hope to show that reading shared points of reference is also a way to talk about systems development – a way that is not about recommending new procedures, or about improved or new ways of developing better or more use orientated technology; but a way that problematizes what we understand by these concepts.

My effort here is to utilize Foucaultian insights to think about the enunciations embedded in the texts mentioned above, with particular attention to how the cooperative movement over time is engaged in a socio-disciplinary process through which it distances itself from other SISR traditions. This differentiation is effected by a process of delegitimating these traditions by claiming that they lack knowledge of theories, methods, moral and political choices that involve the capacity to hear and advocate the interests of the users. Though legitimizing and preserving of the disciplinary boundaries, this process engages the movement in a form of 'othering' that highlights a radical differentiation; but which also conceals that the movement has inherited much from these other traditions and shares basic commitments with them. It will be claimed that the mode of enunciation in these texts suggest a way in which researcher designers are to relate to systems development in a certain way e.g. a by and large solution-oriented discourse.

Surrounding literature

My reading of these texts has affinities with and draws on other analyses of work within cooperative design, but its analytical gaze on taken-for-grantedness; the delineation of how the movement as a social formation is formed and functions in certain ways, and its way of drawing on insights of post-Foucaultian social anthropology makes it differ from similar analyses.

In reflecting on her experiences of the collaboration between workers and researchers and the practice of systems development, Markussen (1994, 1995, 1996) stresses alternative ways of understanding the politics of design within the cooperative design movement. She considers specific episodes from the A.T.-project and challenges the apparatus of concepts that appear in the written material.[2]

Berg (1998) has considered SISR from the standpoint of broader notions about the relations between humans and machines, and suggests that although has been: "recognized as a political actor...voice it speaks is predetermined, the issues it affects are fixed, and its potential roles are curtailed." (Ibid:479)

Cooper & Bowers (1995) also draw on the research strategy of Foucault to reveal the discursive formations of Human-Computer-Interaction. Their analysis shows how specific constructions become true and how these truths are important for the legitimacy of the domain of HCI, how users are constructed as afraid and helpless, and that the politics of design within HCI is constructed in such a way that its practitioners are able to meet users' special needs and wishes.

Bansler (1987) writes about the history of Scandinavian systems development and identifies and contrasts three theoretical schools or research traditions within this area: the systems theoretical, the socio-technical, and the critical tradition. He suggests that the critical

[2] *A.T.* is the National Labor Inspection Service in Denmark.

tradition (cooperative design) takes its departure within Marxist ideology and cooperates with the Scandinavian trade unions in the early 1970s, and entails the effort to increase work democracy by having the workers participate in the development of and learning about new technology.

Kraft & Bansler (1994) bring this issue further and discuss e.g. the mutual legitimating effect of collaborating with the trade unions in order to empower the workers. As they put it, "workers and local unions must learn about the design and use of new technologies, their likely impacts on jobs and working conditions, as well as possible alternatives." (Ibid:75).

Bjerknes & Bratteteig (1994) look at the differences between the collective resource approach and the socio-technical, and ask how robust such a distinction really is: both schools take conflicts into consideration when projects are being organized and both have cooperated with management.

In the following sections I will utilize Foucaultian insights to investigate the politics and economy of the cooperative design movement.

The early formation of the cooperative movement

Foucault (1972) describes how the status of the doctor changes at the end of the 18th C: "when health of the population became one of the economic norms required by industrialized societies" (Ibid:51). A similar process happens to the status of the research designers within the cooperative movement in the late 1960s and the beginning of the 1970s. In this moment in time the new technology, besides being equalized with growth in economy, becomes associated with negative work conditions that have critical consequences for the workers' health.

During the 1950-60s the Scandinavian labor unions supported the introduction of new technology at the work places, as it could increase the material living standards for its members. Problems concerning unpleasant work environment were not taken into consideration, and the labor unions did not fear the unemployment that followed in the streams of the rationalizing technology: the economy was rolling and there was plenty of work; but in the late 1960s negative effects of the technology became present as it transformed the work processes on the shop floor and for the clerks. With the economic crisis in the 1970s, the unemployment among the union members became a reality, which the unions had to deal with. An effect of this transformation was an increased interest in research concerned with investigating the consequences of new technology - e.g. technology's general impact on work environment and its support of different interest groups (Århuskonferencen 1975:510; Bansler 1987:74-76, 81-82).

Concurrently, others thought about systems development along the lines of a Marxist ideology at the university of Aarhus, Denmark. In 1975 representatives from the labor unions, academia, the political world and the business community gathered at a conference to discuss how workers could get a say in the decision-making process concerning new technology and work environment (Århuskonferencen 1975:2,4). These political thoughts ought not to be seen in isolation, but as a part of the general political radicalization that took place in array of industrialized countries and which culminated with the student revolt in 1968 in France. Especially the students and the younger professors at the universities were affected by the student revolt and initiated a critique of existing educational programs and traditional research (Bansler 1987).

The 1975 Proceedings contain a summary of a plenum discussion that deals with society related issues of interest to educational programs. Education at computer science e.g.: "[…] should take into account different theories that are concerned about the development of society; the organization of the work marked; work place environment, and the reality-perception of different interest groups. Also, the education should relate such issues to the role of computer-based systems: what kind of tasks is present and future systems solving; what kind interest groups are these systems supporting, and whom influence the development of these systems?" (Århuskonferencen 1975:595, translated from Danish).

This particular conflict discourse can be found

within Scandinavian systems development where it exists conjointly with two other discourses - a socio-technical and a system theoretical (Bansler 1989). As such, within SISR, you find three domains of knowledge (a critical, a socio-technical, and a rationalistic) that each have they own way of enunciating objects and phenomena that relate to technology and its development. Two of these discourses – the critical and socio-technical – share a social-deterministic discourse and distance themselves from a rationalistic viewpoint.

Within the rationalistic discourse (system theoretical school) technological design is enunciated as a causal force that will shape subsequent social practices. The objective is to develop methods that can describe and capture information flow and load. The aim of technology is to increase work efficiency - the philosophy is rationalistic, functionalistic and driven by economy. By contrast, the social deterministic discourse (socio-technical and critical) enunciates technology as neutral - as a thing without impact – it's basically the social forces such as market, politics, class affiliation or power distribution that determine the consequences/impact of a specific information system (Århuskonferencen 1975:240-242,254; Bansler 1987:32-40).

The social deterministic discourse can be divided into two complementary parts: a harmonic and a conflict discourse. The harmonic discourse is similar to the one found within the socio-technical school. The objective is to optimize the goals of an organization, and to develop technology that fits the need and wishes of its users. An organization is enunciated as an organic system that is tied together by common norms and actions; each individual (workers and managers) is dependent on the organization and contributes to its maintenance (Århuskonferencen 1975:242; Ehn & Kyng 1987:25; Bansler 1987:9, 11, 92, 188, 189).

The conflict discourse is identical to that found within the cooperative movement. Here the structures of society are seen as a product of the power that different groups use against each other; but the power is not distributed equally as it's coupled with ownership of the means of production (Århuskonferencen 1975:240-242).

The conflict discourse makes it possible for the research designers of the cooperative movement to see, think and talk about society as the site of power struggles. This makes it possible to talk about a binary struggle between oppressor (resource strong) and repressed (resource weak). Both 'oppressor' and 'repressed' are thus discursive objects. The repressed is the ordinary working class man who does not own the production means and who does not have the necessary power to influence his work life and/or the oppressors' ultimate repressing technology, the rationalizing computer:

"By taking away the planning activities from the shop floor and concentrate them in the hands of management, workers would be easier to control and replace and cheaper to buy. The computer seemed to be the appropriate technology for the ultimate realization of these basic capitalist interests." (Ehn & Kyng 1987:35).

But by giving the workers a say in the introduction and development of technology, the computer is seen, talked and thought about as a liberating resource, instead of an oppressor. The computer is thus a discursive object. It is no longer (as within the systems theoretical school) enunciated as a rationalistic controlling device, but as a tool that contributes to the workers' fight for a better and more democratic work life. This makes it possible to talk about users, the relationship between users and designers, and about work skills in a particular way:

"When viewing the use of computers from a tool perspective, one focuses on the individual use. A computer application is seen as providing users with a tool-kit containing tools which under complete and continuous control of the user can be applied to fashion material into more refined products. The user is seen as a person who possesses skills relevant within the domain. Computer-based tools are developed to be used by skilled users to create high-quality products. The tool perspective is deeply influenced by the way the design of tools has taken place within traditional crafts. The idea is that a new tool is developed as an extension of the accumulated knowledge of tools and materials within the domain. As a consequence of this, design must be carried out by common efforts of skilled, experienced users, and computer professionals." (Bødker, Ehn, Kyng,

Kammersgaard & Sundblad 1987:261).

Thus, a relation between workers and designers is created as a new discursive object within the cooperative movement: workers as influence-weak yet knowledge-strong and designers as technological humanists, who want to increase democracy and empower the weak party.

However, just as the cooperative discourse enunciates these objects, it simultaneously can be seen as differentiating its scientific practice from that of others. It is for instance the cooperative movement that through its discourse seeks to equalize power by taking care of the interests of the users. The other domains obey the interests of capital and contribute to the maintenance of existing unequal power relations. In this way, a notion is created that we are emancipating and they are hegemonizing. Consequently, the cooperative movement (having a conflictual and social understanding) constitutes a necessary antidote to existing domains of knowledge and politics within SISR.

The broader Marxist political developments in the late 1960s and early 1970s – specifically the socialism associated with Marx, his labor theory, dialectical materialism and a philosophy based on a notion that class struggle eventually will free the proletariat and create a classless society – partake in forming the condition of possibility of the cooperative movement. The capitalist class has owned and controlled the industry and now the new technology is adding to their wealth and the exploitation of the working class. This unequal power relation is supported by the systems theoretical and socio-technical schools through their specific way of practicing systems development; they, to a different degree, collaborate with and seek to optimize the goals of management. Accordingly, and in line with the socialist beliefs the cooperative movement seeks to intensify class antagonism by joining forces with the unions. Together they should pursue a path of systems development that supports the working class; systems development is hereby a political field that offers systems developers an opportunity to make a difference: "It is very important for us, who are socialists, to say no, because a lot of the present systems development are sailing under a fake flag, as so called "objective, pure scientific" activities; but it is actually serving the interests of the right wing." (Århuskonferencen 1975:202, translated from Danish).

In enunciating systems development as a resource that serves the interests of capitalists, it becomes possible to talk about systems development as something else than pure objective development of technology. It's not value neutral, but political, as it is affected by the site of the capital-owners' repression. In this way, the conflict discourse makes it possible to think about systems development as conflict-laden: "[…] one of the determining factors in management's choice of strategy towards a group of workers is whether that group is central or peripheral to management's interests in capital accumulation and control. Skilled workers or workers in areas with labour shortage may for instance be approached differently than migrant workers, women and other resource weak groups. […] This brings us back to the beginning, adding to the objective side of societal tendencies the subjective side of interests of different groups or classes in society, and may be formulated as a last thesis on changes of technology and work: *Class struggle is an important aspect of actual changes in labour processes. Not only of the the use process designed, but also of the systems design process and of possible integrations in the future*." (Ehn & Kyng 1987:37-38, original italic and "the the use")

The quote advocates that, instead of being a resource for the privileged class, systems development should be a forum that could help enforce workers' influence by education about technology. The quote can also be read as a specific way of thinking about research designers; within the cooperative movement they become spokesmen of increasing democracy in systems development and at the workplaces:

"Fundamentally, democracy at work or industrial democracy concerns freedom, another value-laden concept. It concerns *freedom from* the constraints imposed by the marked economy and the power of capital. And it also concerns *freedom to* practically formulate and carry out particular projects that further democratize work." (Ehn 1991:6, original italic).

If we look at this notion of democratization in terms of Foucault's notions of enunciation and differentiation, it is something else than a matter of increasing the sayings and rights of the workers. Rather, it immediately concerns the status of the ones who have rights of access to the discourse about this specific piece of technology - the ones who have rights in defining what technology and systems development is and becomes. The democratization is also a statement that enables the research designers to enunciate themselves as different from designers within the other SISR discourses: different as they convey their care for the weak party by inviting and involving them into the process of development instead of exploding and marginalizing them in relation to new technology: "Cooperative Design, which by definition means empowering users to fuller participation and cooperation, breaks down the old rules of the game." (Bødker, Greenbaum & Kyng 1991:152).

As such, the cooperative research designers are different from programmers, engineers or analysts; they are human beings obtaining social-political awareness who have expert knowledge about systems development. They use this knowledge to think about the computer in terms of the social world, conflicts, workers needs and interests, and by the use situation. Accordingly, technology should not be designed from a rationalistic standpoint, as it makes work activities rigid instead of supportive and liberating. Neither should it be in cooperation with management who do not possess qualified knowledge about the workers work-practices, and who have conflicting interests with the workers. Instead systems development should unfold in cooperation with the workers, who posses the skills and knowledge about the work processes being computerized. A crucial point to draw into relief here, however, is that in its distinctive position as worker advocate, the designer is enunciated as differentiated from the workers themselves. To be sure, this differentiation requires a cooperation, however that is required precisely insofar as the difference is to be maintained through the practice of design work. Thus, in fulfilling both forms of differentiation (from other design discourses and from workers) cooperation should evolve in a language that is familiar to the workers:

"It shouldn't be the workers who have to learn the language of the expert – you do not have to study medicine to be able go to the doctor – but the systems specialists who should be able to express themselves in everyday language." (Århuskonferencen, 1975:507, translated from Danish).

For Foucault, the enunciations that form a discourse actively define what can be said and who among the totality of individuals has the right to speak. He often takes the doctor as an example of an expert who has rights of access to the medical discourse. This gives rise to a position from which the doctor can objectify and pathologize the patients. The patients, in contrast, (or 'the users' when speaking of the cooperative movement) have no influence on this, as they do not have access to the language of the expert.

In following Foucault (1972) I have delineated how cooperative design as an expert domain gets created and functions in a specific way. By looking at related and oppositional domains of knowledge that also posses their status (the socio-technical and the system theoretical) I have showed how, through a process of differentiation, the emergence and existence of the movement is possible only by relation to these discourses. The production and management of new legitimizing discursive objects - the computer as a tool, the designers as technological humanists, the users as influence weak yet knowledge strong workers, and systems development as conflict-laden – forms, constitutes and legitimizes the cooperative movement.

Users and designers

The specific discourse used by the cooperative movement to legitimize itself as an alternative to the system theoretical the socio-technical school, can be seen in relation to an array of existing dichotomies that gave form to the movement from the beginning: "formal versus empirical, hierarchic versus egalitarian, universal versus contextual, traditional science versus action research." (Markussen 1994:62). In following Foucault, these dichotomies involve legitimating one's right to speak and a process of differentiating one's own voice from

others by enunciating oneself in a particular way.

The empirical, egalitarian, contextual and action-oriented aspects are discursive, legitimizing elements that create a separation between *we* and *they*. The movement, so to speak, departs itself by taking a positioning of justice, moral, theories and political choices that involve the capability of partaking the interests of the users by offering them a voice in the development process:

"For we see cooperative system design as more than props or background to create "user friendly" systems. Rather, we see the need for users to become full partners in a cooperative system design process where the pursuit of users' interests is a legitimate element." (Greenbaum & Kyng 1991a:ix).

The quote states that the users' interests are a legitimate element. But we should ask whether it is strictly the users' interests that are being constructed as a legitimizing element here, or, additional, might the statement 'from the user's point of view' be seen as a production of truth that establishes a specific way of speaking. Might the concern for users' interests position the designer's interests as the starting point of systems development? Take for example the following quote where Greenbaum & Kyng explain why mutual understanding is crucial for gaining an understanding of users, their work-routines and practices (it is worth noticing that nothing is said about gaining an understanding of the research designer's):

"To system designers, the people who use computers are awkwardly called "users", a muddy term that unfortunately tends to focus on the people sitting in front of a screen rather than on the actual work people are doing. […] these users are all too often understood by system developers in "system terms". Just as the human observer misleadingly assigns meaning to what lions are doing based on the human's own world view, system developers tend to make sense out of the work of the users by applying their own system development concepts, often missing the understanding of the users which stems from a knowledge of and experience with the work being done. Wittgenstein's point in the lion riddle is that understanding between humans and lions is not possible because they don't share a common practice. Fortunately, we believe our possibilities for mutual understanding with users are much better. […] The authors in this part present their experiences as a way of creating room for users to act […]." (Greenbaum & Kyng 1991b:3,5).

The passage can be read as an argument that advocates that the difference between users and designers cannot be equalized by representing the users, but that it should be through involvement in the process of development. The two partners should come to know each other, gain in-depth knowledge of practices and create a mutual understanding in such a way that future systems can be tailored to fit the interests of users. But the quote can also be read as a specific way of thinking about mutual respect between the partners; for even though users are not understood in traditional system terms, the cooperative movement does not level the fact that it is the human being (the system developer) who is interested in understanding the lion ("creating room for users to act"). As such the enunciation of mutual understanding can be viewed as a production of truth, which (precisely through its stated symmetrical intentions) subsumes the users' interests by the representational and knowledge producing practices of the researcher. When it is not the lion (the user) who wishes to understand the human being (researcher) then you might say that the research designers speak from a standpoint that observes users in a realm of self-interests and thereby understand them by system terms - not traditional system terms; but the terms (and discourses) used in the cooperative movement.

Foucault (1990) describes how the Christian pastoral came to represent the development of a new form of power: it was an individualizing power that was productive rather than repressive; it exercised authority over a flock of dispersed individuals by guidance, and the pastoral had to "be prepared to sacrifice itself for the life and salvation of the flock", whereas royal power "demands a sacrifice from its subjects to save the throne" (Foucault 1983:214.)

An uncanny resemblance emerges between the pastoral and the cooperative movement as both

groups have the knowledge that is necessary to guide a group of subjects (one by conscience, the other by stated political intent and technological knowledge). Hearing the voice spoken within the space of user involvement as a kind of confession[3], we may also hear it said that although neither group can be said to exercise a form of commanding power, each can be said to exercise a power that has its locus within confessions. For just as pastoral "power cannot be exercised without knowing the inside of people's minds, without exploring their souls, without making them reveal their innermost secrets" (Foucault 1983:214), might the users' lack of technological expertise be seen (despite symmetrical intentions) as both "the problem and the challenge that makes designers' work legitimate." (Markussen 1994:62). The similarity may disintegrate there, however, for the cooperative movement has no need to sacrifice itself for the life and escape of hegemony of the workers. An egalitarian discourse, ensures that users and designers enter a setting of mutual learning as equal partners: users are enunciated as influence weak but knowledge strong experts and designers as experts of social-technological knowledge. Hereby a discursive object about equal partners who exchange expertise is created, and no sacrifice is required.

This knowledge creation can be seen as necessary in virtue of the egalitarian discourse, as it would not be possible to talk about mutual learning; about experts working with experts and about democratic values if the partners were (as within the systems theoretical school) enunciated as asymmetrical. Taking this path, the discursive object 'expert' can be seen as a counterpart to the enunciation of expert within the systems theoretical discourse, and then it also has to do with legitimating and differentiating one's own voice from others as it challenges "the view that managers know much more about what is going on than their subordinates." (Markussen 1995:4).

The discourse about equal experts is a specific way of enunciating *we* and *they*: the other (the users) are technology-naïve (native?) and need technological experts to safeguard their interests and needs. The discourse can thus be seen as a production of truth that ranks and defines users and designers: "Keep in mind that the users are the key to the design of a useful system and the designers are the key to propagating the user demands into the technical design of the system." (Bødker & Grønbæk 1991:214).

If we draw a line to Foucault's (1990:61-62) notion about pastoral power and see the relationship between the technology-naïve and the technological experts and the site of mutual understanding within this optic, it becomes possible to see a ritual of discourse in which the speaking subject is also the subject of the statement - a ritual that constitutes a power relationship, for one does not talk about work skills, needs, wishes and interests in relation to technology without the presence of a partner who is not simply the coworker with those same skills, needs, wishes, and interests, but the technological expert who requires the description, propagates and appreciates it, and intervenes in order to make work practices, milieu and technology better, easier, fit-able, democratic and/or useful. Finally, it is a ritual in which the expressions produce essential modifications for the person who articulates them: it empowers, increases skills, and improves work life; it unburdens him of his hegemony, liberates him, and promises him a better (work) life through new and enhanced technology.

With the notion *régimes of truth* Foucault (1980) suggests we look for the techniques and procedures accorded value in the acquisition of truth. The confession (user involvement) is one such technique for producing truth. Also, Foucault advises us to ask after how and by whom discourses are applied and put to work in such a way that they become true. In learning about the particular conditions under which the enunciation of mutual understanding has come to count as valid knowledge within the cooperative movement I have looked into the formation and organization of the egalitarian discourse.

Reflexivity

In the early 1990s a discourse about reflexivity

[3] Rampant ado about the solicitation of tacit knowledge may be just such a site of confession.

and the subversion of existing dualisms is introduced into the movement's textual material - henceforward I will call this discourse the pluralistic discourse.

The researcher designers of the cooperative movement have located a discourse in their practice. It is the Cartesian dualistic discourse that has dominated rationalistic thinking and systems design through its history, including the cooperative movement (Greenbaum & Kyng 1991b:8). The movement departs itself from and wishes to challenge this way of thinking as it supports an objective and detached reflection and maintains existing power relations; but with a reference to Kuhn's paradigm theory the researchers emphasize that it may not be possible to make a clean break with Cartesian dualism. However, by acknowledging its influence they will be able to understand how their practice and thinking gets trapped and limited by it, and see how these limits: "may appear as "mistakes" in our practice, but are, in fact, embedded parts of the rationalistic world view and the accompanying system approach. […] We know that we can't make a clean break with Cartesian dualism that has dominated rationalistic thinking in the past. As Kuhn (1970) highlights in *The Structure of Scientific Revolutions*, paradigm shifts evolve through contradiction over time. But we will certainly try to highlight ways in which our approach differs from the rationalistic world view and point to emerging contradictions. In doing this we pay particular attention to the complex social relations of the workplace, and the need to use techniques that support involvement, rather than the detached reflections of the Cartesian scientist." (Greenbaum & Kyng 1991b:9-10, original italic).

The research designers try to distinguish themselves from the rationalistic worldview by adopting a social constructionist approach to systems design: "In general, these theories can be grouped under the philosophical heading of social construction, which sees our understanding of the world as generated by people (through their social interactions) rather than a set of fixed, immutable facts ([…]). In contrast with the rationalistic tradition of computer science, social constructionist theory veers ways from rigid poles like "objective-subjective", and steers towards understanding different, pluralistic perspectives of how we think and act. Seriously, system developers have little room to hide behind a mask of objectivity, for developers, like users, need to get involved in day to day activities and learn to share perspectives." (ibid:12).

By determining the dualistic way of thinking as a limiting and fixing factor (which indirectly influences the movement) it becomes possible for the research designers to enunciate themselves as self-reflexive. The pluralistic discourse also makes it possible to see, think and talk about the movement as transcending some existing dualism. In the following quote it is possible to observe, firstly, how the movement is enunciated as not just being pluralistic in its way of thinking and understanding the world – it is pluralistic, as it gathers voices from different subject areas. This neutralizes the dualism between our and their discipline and melts it into one pluralistic movement. Secondly, the traditional oppositional relationship between natural and social science is subverted. Thirdly, the dualism between users and research designers is challenged by a slight displacement in focus: now the researchers also study each other to learn and gain new insights. Fourthly, the competences of users and research designers are equalized: "As the book title states [Design at Work. Cooperative Design of Computer Systems], our approaches are based on cooperation between system developers and those people we call users. But it also implies that most work is cooperative and that the process of putting this book together, like any collaborative venture, involved a great deal of interaction among people of different disciplines. The theme of cooperation or respect for *mutual competencies*, whether they be between designers and users, or authors in this book, is a central one for us. Just as we see users as diverse groups of competent practitioners, we have had to look at ourselves, as authors, as a diverse assortment of academic practitioners who speak different professional languages and use different approaches. We are lucky to be writing this at a time when walls between academic fields are beginning to collapse. In fact, by virtue of having undertaken projects where we looked at workplaces from a variety

of perspectives and designed systems with people who use them, we have contributed to collapsing these boundaries. We hope to do more." (Ibid:6, original italic).

In this quote the authors claim that they are contributing to eliminate the boundaries between academic fields; however, the book is divided into two parts: a theoretical and a practice oriented section. The first deals with reflections on theories, the understanding of users, work and the use of technology - these articles are primarily written by researchers from the social sciences. Part two includes stories from the field on how to create better technology through the appliance of methods, which capture a symmetric relationship and which increase the understanding of work complexity - this part is primarily written by representatives from the natural sciences. Accordingly, the pluralistic discourse might be a production of truth, not just because of the physical division between natural and social science; but also because of the previous considerations. That is to say: social constructionist or not, the dualism between users and research designers still exists, and it still exists between the diverse assortment of academic practitioners.

Besides creating a certain knowledge about neutralizing traditional ways of thinking, the pluralistic discourse is a new and important way of legitimizing the movement in the 1990s. The rationalistic dualistic discourse, as found within the systems theoretical school, has not been a singular discursive object within the cooperative movement in the 1970-80s; but in the 1990s it becomes an important resource for obtaining a position within SISR. Its rationalistic methods are delegitimated, insofar as they are said to lack understanding of a more complex, real truth about work complexity that the cooperative movement is able to secure.

However the cooperative movement still strives for legitimating and differentiating its voice from others within SISR and does so by enunciating itself as reflexive and as subverting existing dualisms.[4]

The pluralistic discourse is not an isolated phenomenon within the cooperative movement. It exists in many resent theoretical frameworks and disciplines e.g. Bourdieu, Foucault, science and technology studies, and feminist theory. Thus, another legitimizing effect of the pluralistic discourse is that the movement can proclaim itself to be reflecting upon its practice, able to revise itself, and to stay up to date with newer disciplines and amongst the newer theorists. By using the pluralistic discourse in conjunction with discourses from the 1970-80s the legitimizing effect is even greater: the movement can claim an important place in the larger context of system design both by emphasizing long-term experiences (which verify the discipline's utility) and by laying emphasis on the novelty of a reflexive approach: "Thus in the address from the University of Hamburg to the recent 13th IFIP World Congress the speaker pointed to the need to cater for both democratic values and ecologically sound development. […] The changes and the need for reorientation are just beginning to attract wider attention in the scientific community and the kind of re-orientation called for is not something that happens overnight. However, a body of research already exists that as a part of its very base incorporates a number of the concerns raised above. […] Two examples from my own work are the DUE and the UTOPIA projects." (Kyng 1995-96:3-4).

But even though the movement draws on a social constructionist discourse to level a dualistic relationship, and despite the enunciation of users as also being experts, the dualistic discourse exists and prevails in the cooperative discourse.

Thus, although the cooperative movement does question itself about how to get to know its practice, its questioning is circumscribed by a restricted area of concern that derives from a process of differentiation. This process affects

[4] A similar argument is to be found in Vann and Bowker (2001) who are concerned with the instrumentalization of 'the truth of practice' in organizational management domain. They argue that managers of 'practice' deploy an associated claim to a proper scientific method that would differentiate them from an older, unviable form of managerial knowing.

the production of knowledge and makes the researcher designers stare at systems development and its apparatus of actors. The systems design methods and techniques, the computer, the users, the designers, and the theoretical material they draw on to explain their beliefs, are all phenomena and discursive objects that partake in consolidating the borders around the movement within frames of directives of legitimate matters. But, even though its voice is different from others within SISR, the enunciations instantiated in the cooperative discourse reproduces and shares a general information systems research discourse that includes a reflexivity concerned with an 'otherness' of technology and which excludes a reflexive concern about the politics of representation within the written material.

Conclusion

In this essay I have tried to throw into relief ways in which the contributions of post-Foucaltian social anthropology might be used differently within systems development research in order to understand aspects of systems development research. In offering a discursive treatment of texts, I have aimed to mobilize its insights in a way that contrasts with presently legitimate ways of applying it in a field study, that is, as a means of informing the system design process. My hope has been to suggest that, besides providing a representational apparatus to be utilized in showing what is really going on out there in the world of technological practice, it is also a call to reflect upon such representation itself as technological practice. Written material is not just a document containing that captured reality in the field that traditional systems development research historically has failed to acknowledge: it is that moment in which we show to and share with a larger group of people within a scientific community what we are doing; a space in which we give meaning to what systems development is and might become. In this sense, representational practices within systems development research are powerful. They contribute to the formation of certain truths, which might make us take certain things for granted and thereby reproduce the world in specific ways. Though few would publicly deny this point in principle, the point that I have tried to raise is that it is perhaps possible and desirable actually to integrate such acknowledgements into the other aspects of our work.

Through a process of differentiation the emergence and existence of the cooperative movement has been possible only by relation to other successive discourses within SISR. But the strategy of defining oneself in contrast to these other movements, while historically productive, can also be seen as limiting and as fixing the representation of research within a realm from which it is difficult to escape. The cooperative movement has been shaped over time through a successive process of legitimizing new voices by problematizating that of others, its objects, and phenomena. This distancing simultaneously blurs that such an other has been a primary condition of possibility and that the movement's is tied to and symbiotic with these other voices - a Cartesian discourse, which speaks through us and makes us use value-laden language. This has consequences for what is valued/devalued and framed to be of central concern within the nexus of systems development communities: "[…] battles over truth are not abstract, for truth inheres in material forms. To be in the true, facts and arguments must be permitted to enter into complex apparatuses of truth – scholarly journals, conferences and the like – which impose their own norms and standards upon the rhetorics of truths. Truth entails an exercise in alliances and persuasion both within and without the bounds of any disciplinary regime, in which process an audience for truth can be identified and enrolled. And truth entails the existence of a form of life within which such truth might be feasible and operative." (Rose 1991:4).

Along this line of reasoning, we are urged to ask whether it is sufficient merely to take the spaces of tool use - the *in situ* work or laboratory studies, the technology, and the methods used in design situations as our primary loci of concern - when they at the same time must (in order to achieve their privileged analytical status) be written about through languages which have not themselves been interrogated. For just as our inherited practice unambiguously makes us

focus on technical expertise, our discursive practice can be seen as leading us on a path that does not account for the very language and knowledges we produce.

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