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Ignored and neglected: Work in Cybersociety

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Public and scientific discussion of cyberspace both focus on the same aspects represented by the topics of this conference: the implications of cyberspace for democracy, the behaviour of net addicts, market potential of e-commerce. Despite the different points of view and controversies on all these topics, there seems to be no doubt about the increasing social relevance of the Internet. But if the Internet will have a deep impact on society as a whole, then it will certainly affect the forms and ways of working.

Largely ignored in discussions on the development of cybersociety, however, is the category of work – formerly a central category at least in the social sciences! Some attention is paid to more or less realistic projections of employment in cyberscenarios, but just about no attention is given to questions like: what will work be like in cybersociety and which qualifications, if any, will be required for cyberwork? Some first answers to these questions are given by a sociological study conducted in 1998, which examined 70 German information brokers by means of qualitative interviews and a standardized on-line questionnaire. In Germany, one finds about 200 people who are in the business of information broking and advertise their services over the Internet.

What kind of work-related action do information brokers actually need and use in order to navigate in cyberspace, which skills are needed and how do they gain the unique experience their work requires? Answers to these questions not only help us to analyze the work action of information brokers but also can give us some idea of the specific aspects of information work in contrast to the well-researched field of almost all kinds of manufacturing or service occupations or caring professions.

The existence of information brokers itself gives us a clue as to how the information society has been changing forms of work and occupation for years, at least in Germany where most occupations rely on vocational training and other organized and formal qualification schemes. German information brokers, however, usually do not have any typical training in the Information and Documentation sector: the great majority of the interviewees, almost 82 percent, lack such formal training. Even more surprising is the fact that information broking – often proclaimed enthusiastically as a prototype of future professions – is not a phenomenon linked to the appearance of the Internet at all. Almost 41 percent have been in the information broking business for more than seven years - some of them can even look back on more than 20 years of experience – and only about a quarter started business in the last one or two years and could so be described as Internet 'newbies'. But the Internet still is not a real rival to the 'good old' on-line databases: even the beginners in information broking do not use the Internet more frequently than their more experienced colleagues.

But, as a cluster analysis on types of media use shows, the significance of the Internet as a research tool is increasing. The cluster analysis (N = 64) explores the frequency of us of CD-Roms, the Internet, on-line databases and conventional media (such as printed media) and the result are three use type clusters. The biggest group with 49 cases, which could be described as the 'flexible allrounders', makes frequent use of the Internet and of on-line databases, and uses CD-Roms and conventional media sometimes. The second group (9 cases), labelled the 'conventional off-liners', makes use predominantly of various kinds of conventional media, but seldom searches in on-line databases or uses the Internet or CD-Roms. The third, and with

six cases smallest, group, the ‘restrictive classicals’ concentrates on databases as the most important research tool and makes limited use of conventional media, while totally ignoring the Internet and CD-Roms as yet. Statements made during the explorative interviews show that the Internet is regarded more as a tool for communication than for information retrieval. For valid and accurate information the World Wide Web is not considered to be a research tool of high reliability; its value is seen in the possibility of exploring a new field widely and getting in touch with people assumed to be experts of some kind.

One item of the questionnaire was about experience: how long does it take to become a skilled and experienced information broker? Not surprisingly, all the answers to this question give a period of time less than the length of time for which the respondent has been working in this field. In other words: everybody considers his/herself an experienced information broker, even the beginners who have been in the business less than two years. Beside the methodological implications of this kind of question and the corresponding answer behavior, there is one remarkable aspect, that there is no significant difference between the interviewees with vocational training in the field of information and documentation and those who acquired that skill on the job. It seems that what is called experience has nothing to do with formal learning methods and qualification models.

This is no new revelation in the sociology of work: in the tradition of Dreyfus in particular, there is an ongoing debate under labels such as ‘tacit skills’ or ‘rule-of-thumb knowledge’. In German industrial sociology since the Eighties the theory of what is known as ‘subjectifying work-related action’ (Böhle) has been trying to define categories that describe the qualities of ‘experience’ that are so difficult to define. What exactly is experience? Experience is neither basically inferior to theoretical, scientifically grounded knowledge, nor can it be completely replaced by this. ‘Subjectifying work-related action’ or ‘experiential knowledge’ is of great significance as an autonomous form of action and knowledge both for planning and practical action as well as for creative, innovative processes that form the basis for coping with unforeseen circumstances. But an understanding of experience in this sense merely as a set of experiences which ‘have been acquired’, is not sufficient. The perspective of ‘having experiences’ also refers to a given moment and situation and to specific working ‘methods’ used to tackle concrete situations. The concept of ‘subjectifying work-related action’ includes four dimensions of human action: physical and sensory perception; thinking; acting/working and the relationship towards one’s ‘environment’ (persons, tools, and technical systems). All four dimensions can be looked at from an ‘objectifying’ and a ‘subjectifying’ point of view and a distinction between these four aspects is possible in theory, but in the reality of work-related action they are not separable. Both modes – the ‘subjectifying’ and ‘objectifying’ approach – have different qualities, and they are entangled in each other in every work-related action.

Therefore the ‘objectifying’ dimension covers what we usually associate with work in terms of exact and ‘objective’ perception, logical thinking, rational and sequential procedures, all combined with an unemotional matter-of-fact relationship with the environment. ‘Subjectifying’ work-related action, by contrast, is a simultaneous and complex sensory perception that takes place via senses and body movements and is not detached from subjective feeling. It goes beyond an orientation to precise and clear-cut features towards handling more diffuse and stratified sources of information.

In the most recent sociological discussions this layer of working action is considered to play an increasing role in all kind of high-tech production. Several studies (Böhle et al.; Bauer et al.) in the metal and chemical industries, for example, prove that increasing complexity of automation and high technology also produces a growth of uncertainties and imponderables.

These phenomena which cannot be precisely determined call for skills, abilities and a kind of knowledge which can at least partially be characterized as ‘experiential’ or ‘subjectifying’. Subjective experiences and feelings – such as intuitive action, sensory perception, associative and intuitive thought, forming an interactive context – are acknowledged as an important basis for ‘mastering’ complex high technology.

Due to its non-hierarchical, non-linear and decentralized structure, the Internet also represents a technological system of almost unbounded complexity – the Web indeed could be called a ‘seamless web’ (Hughes) – and therefore teems with imponderables. Everybody who works with computers knows and may experience daily that the world of bits and bytes is by no means a sanctuary of logic and predictability, and the same could be said about the Internet as well. The imponderables information brokers are faced with in their work are not merely the result software bugs or hardware problems. What they have to cope with every day is the great complexity of the ‘virtual’ world, which is reinforced by the variety of linkages between cyberworld and reality. And this is exactly where the ability to subjectify work action comes in.

In on-line databases billed by the second, information brokers have to develop the skill of successful and effective on-line navigation, and that requires abilities almost contrary to those used by ‘aimless’ leisure surfers. But, as the results show, similarities do exist between the information brokers’ ways of working and those applied by workers in high-tech industrial workplaces in order to cope with their challenging task and environment. Like them, information brokers rely greatly on qualities and capabilities such as intuition and emotional and sensory awareness in order to cope with the day-to-day imponderables of information work in cyberspace. The four ‘subjectifying’ dimensions which were described above can be found in the work-related action of information brokers, too.

Sensual perception: Information brokers must make customers’ wishes and needs their own; this includes sometimes a concrete image of what information the customer needs and what it is for. Although this is an abstract process, it has a sensual reality the interviewees describe with vivid words like ‘develop a sense for’, ‘get the whole picture’ or ‘get a handle on it’. Though sensual perception does not play the same role as in manufacturing, the whole attitude of information brokers does have a sensual and perceptive quality: their relationship to their work environment is not determined by a separation into object and subject, but is experienced as a triad of customer needs, database structures and search ‘object’. Therefore information brokers are more than just ‘translators’ between the virtual and the real world, they combine the two in this triad.

Intuition: For an effective orientation in the immense mass of data in cyberspace and for choosing successfully the most appropriate database to start with for a certain search purpose, information brokers not only need a specific theoretical knowledge, but intuition as well. They describe this kind of, in the best sense non-rational, approach with words like ‘serendipity’, ‘instinct’, ‘horse-sense’ or ‘gut reaction’ and ‘rule of thumb’. And it surely is no coincidence that information brokers show a typical affinity to detective work, where a sense for the whodunnit is proverbial.

Interactive action: Although there are phases of exact planning for specific retrieval approaches, they seldom cover a entire search. Complicated searches are characterized as an interactive and iterative process. Information brokers interact with the search process, react to certain results, redefine their strategy whenever necessary, and even rely somewhat on the ‘trial-and-error’ method. Experience and extensive competence enable information brokers to ‘play with the search tools’ and to ‘communicate with the results’ in a intuitive step-by-step approach. They also describe spontaneous hopping between different databases, alternating

among possibly helpful media and a back-and-forth between retrieval and further investigation of the customer needs. This variety of approaches enables experienced information brokers to handle the uncertainties of the search process and combine that condition with the necessity of effective and quick searching.

Emotion: Characteristic for the 'subjectifying' mode of work-related action is the emotional quality of relation not only to the customers but to the work process and its technical objects as well. Information brokers report a symbiosis, a harmonic relationship with their search process and the computer as its representation. This empathic relationship and deep identification are a prerequisite to literally 'getting in touch' with the data and results, taking into account the customer's needs and costs. Subjective feelings therefore are not considered as a weakness, as unprofessional, or as a disturbance, but as a natural way to cope with complex search areas. Information brokers see their search as a puzzle to be solved and as a detective mystery, they gain a variety of emotional rewards like thrills, excitement, satisfaction.

Sensual perception, intuition and associative thought, interactive action and emotional relationship to the environment are dimensions of subjectifying work-related action that help to categorize what is hidden under the label 'experience'. They are not a substitute for 'objectifying' modes of action like logical thinking, theoretical knowledge or sequential action,, nor are they inferior or just additional to them. Both modes are of equal importance and form a dialectical relationship. Usually the 'subjectifying' abilities are overlooked and underestimated – due, among other things, to the difficulty of verbalizing them. In an interview a popular information broker conducted with colleagues, this fact is described as follows: "However, there are thousands upon thousands of little factoids that went into making that intuition possible, and that's known as experience. That's very hard to convey. It's like trying to quantify the knowledge of a New York cabby that says when to make a turn left here to avoid traffic, as opposed to a right turn that's more direct. It's knowing when you take the Drive rather than Central Park or 8th Avenue. Experience. There's a learning curve, and after you've reached your peak it levels out and you don't think about it. So when somebody interviews you and asks how you make that decision, you say, 'How the hell should I know? I just do it'". (Basch, 122)

Therefore, after the exploratory interviews were finished, the question of the possibility of using standardized research methods to survey the existence and extent of subjectifying modes in the work action of information brokers arose. Could one research the 'subjectifying' objectively in terms of quantitative methods? The answer seems to be 'yes'. A scale of 28 items covering the four dimensions of subjectifying work-related action presented a high reliability and a Cronbach-Alpha of 0.81. With 70 percent the majority shows strongly subjectifying values. So the relevance of subjectifying action in the work of information brokers that was already proven by the exploratory interviews is corroborated.

Subjectifying qualities play a similar role in the work action of information work as they do in manufacturing workplaces. However, to a much greater degree than production high-tech workers, information brokers need to act within different 'layers' of reality: the 'real' reality and the so-called 'virtual reality' of cyberspace. Subjectifying qualities of working for them are not only relevant but fundamental in order to be able to link these different levels and to stay aware of which sphere one is presently moving and working in.

Subjectifying work-related action as that part of human activity that cannot be formalized, and therefore can hardly be mapped by software algorithms, plays a major rôle in the work-related activity of information brokers. So the results of this study provide initial indications of what information – and thus *one* form of work in cybersociety – might look like. The perspective of

the sociology of work can provide insights that can continue to form a basis for evaluating the importance of human labour, from which consequences for learning methods, training needs, etc. result. The questions of software ergonomics, the design of what is called the 'man-machine interfaces', and the use of 'intelligent agents' as a supposed replacement for human labour appear in a new light in view of these results. Human work will continue to be *the* decisive and determining aspect of society, even in future forms of society – whether called cybersociety or something else – and should therefore be and remain an object of scientific research. If one wishes to examine the development of cybersociety, one must not ignore the factor of work: for what kind of work we do, and especially how we do it, shapes our social existence.

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