Peter Lauritsen and Peter Elsass

Computers in Psychiatry

Notions of science and health as resources for conceptualising computer use in two psychiatric contexts

Summary

Within psychiatric research, the field of 'technotherapy' has been centred primarily on attempts to assess the computer as a treatment tool. The situation of daily clinical usage is, however, often ignored within such research, as for instance in controlled clinical trials.

Our empirical study illustrates how health professionals and clients use different concepts of science and health in the attempts of formulating standards for using computers in psychiatric practice. The psychiatrists at a major psychiatric hospital decided and justified clients' use of computers on the basis of a 'techno-medical' quality assurance. At the same hospital the occupational therapists stressed the improvement of social relations as a treatment goal. And, at a psychiatric outside clinic the clients used concepts of 'normality' for articulating quality in computer use.

Our study exemplifies how the use of computers is a multifaceted 'performance'. What is called for is a kind of research not limited by artificial borders of 'the context' and the 'user-perspective'. In much humanistic research as well as in action research concepts of 'context' and 'user-perspective' imply a somehow romantic view on practice as pure and uncontaminated by the outside world contrasted to a 'general' or an 'objective' way of knowing the world. These sharp distinctions were however difficult to maintain in our study, where health professionals and clients took local contingencies into account when they interpreted computer use, while they simultaneously drew on a socio-historical reservoir of resources.

Since the sixties use of computers in psychiatric settings has been at the centre of a sometimes heated debate. Some haveseen the new technology as a welcomed tool promising major improvements in psychiatric treatment (Colby, 1979 & 1995). Others have been more reluctant and concerned with the danger of a 'dehumanising' practice caused by the computer's lack of ability to respond empathetically to the client (Weizenbaum, 1985; Murphy and Padeck, 1986).

In this article we report our experiences from an investigation of clients' use of computers in two psychiatric institutions. As will be exemplified this use is a multifaceted 'performance'. Obviously, the activity is located in a specific setting and dependent on local contingencies (Suchman, 1987). Thus, in order to understand situations where psychiatric clients use computers, concepts such as 'context' and 'user perspective' seem relevant. These seductive concepts are, however, too vague and imprecise, and must be qualified.

In its early days the discussion of psychiatric clients' use of computers was restricted to the scientific community, but today the situation has changed. Like most other areas of society computers have become part of the

daily life of health professionals and clients at many psychiatric institutions. This diffusion raises an important question: according to what standards can the quality of computer use be measured, and what are the appropriate methods through which such a question can be answered? Such questions are not only related to the specific case of psychiatric clients using computers, but relate to a much more general debate on 'quality assurance' – a concept often used in discussions of treatment practice in a compound setting.

A large number of methods for assuring quality in treatment show how the health care system, in Denmark as well as in other countries, has taken different positions in relation to evaluation and validation of treatment procedures (Sundhedsstyrelsen, 1996). Most dominantly, medical doctors have developed methods for quality assurance that are closely related to the scientific norms of formal studies in medicine. This has, however, been criticised by other professional groups, e.g. psychologists, who in accordance with much humanistic research argue that evidence-based practice promotes a 'techno-medical' view (Elliot, 1998). Other groups, such as occupational therapists, have argued for more context-sensitive methods as found in narrative analysis and case-studies (Mattingly, 1998). And advocates of action research have been arguing that quality assurance must involve the 'user-perspective', which has been one of the main issues in the conceptualisation of subjectivity and objectivity found in this kind of research (Krogstrup, 1997).

Through examples from our investigation it will be shown how psychiatrists, occupational therapists and clients use various 'resources' when articulating standards of quality in situations where clients use computers. Some of these resources for explaining practice are, in a sense, found outside the specific practices. Thus, health professionals and clients use conceptualisations of science and health in formulating and justifying standards for using computers in the psychiatric practice. The psychiatrists at a major psychiatric hospital in Denmark see a number of reasons for the clients' use of computers. Yet, these psychiatrists emphasise that an evaluation of treatment related usages must be based on controlled clinical trials. At the same hospital occupational therapists stress the social relations of the client, and they perceive their own professional knowledge as a necessary condition for 'good' computer use. At a psychiatric outside clinic the clients use computers in activities related to work and leisure. However, not only do they measure the quality of computer use according to standards such as 'having fun' or 'getting work done', they also use a concept of 'normality' as a resource for articulating quality in computer use.

Technotherapy

Within psychiatric research much effort has been made to assess whether or not the computer could prove to be an efficient treatment tool. With few exceptions, these efforts can be summarised under the heading 'technotherapy' because they advocate a form of therapy based on the use of information technology. A now classic example is Weizenbaum's computer program Eliza (Weizenbaum, 1966). In accordance with much research within the field of Artificial Intelligence, Weizenbaum investigated the possibility of developing computers which were capable of communicating in the 'natural' language of the user without requiring him or her to use formalised expressions and codes. As part of this research Weizenbaum constructed Eliza which imitated a Rogerian therapist.

Despite the fact that Weizenbaum clearly recognised that Eliza was only able to parti-

cipate in very simple conversations and merely simulated understanding (Weizenbaum 1966 & 1985), the idea was taken up by a number of psychiatrists through which the computer was established as a promising tool for performing therapy. Thus, Colby stated that: "We have written a program which can conduct psychotherapeutic dialogue" (Colby et al., 1966, p. 148). Although this clearly was an overstatement the difficulties were largely seen as 'technical' and were supposed to vanish as the new technology advanced. As is clear today this did not prove to be the case. But the idea of replacing therapists with computers has been difficult to put aside not least because of the promises 'computertherapy' was supposed to hold. In 1979 Colby wrote:

> The advantages of a computer psychotherapist would be several. It does not get tired, angry, or bored. It is always willing to listen and to give evidence of having heard. It can work at any time of day and night, every day and every month. It does not have family problems. It does not try to perform when sick or hungover. It has no facial expressions of contempt, shock, surprise, etc. It is polite, friendly, and always has good manners. It is comprehensible and has a perfect memory. It does not seek money. It will cost only a few dollars a session. It does not engage in sex with its patients. It does what it is supposed to do and no more. (Colby, 1979: 154f.)

Colby is basically arguing that therapeutic practice is flawed by its dependency on the subjectivity of the therapist. The way to overcome these flaws, and thus improve practice, was believed to be the application of models and techniques developed and evaluated within the framework of technomedical science (Turkle, 1997). From this perspective the computer was considered valuable because the subjectivity of the therapist was erased. Not only did the computer avoid making 'human mistakes', it also made possible that models and techniques derived from psychiatric theory could be implemented in the program and thus applied to the psychiatric practice through the use of computers (Colby, 1976 & 1979; Bloom, 1992).

Today, many researchers would distance themselves from the rhetoric used by Colby. However, the basic assumptions made by Colby can still be found within a contemporary technotherapeutic perspective. Hopes to develop the 'human speaking' psychotherapist have diminished, but integration of computers in psychiatric settings is still based upon the assumption that therapeutic practice would improve if it was based on information technology developed and evaluated according to theories and methods of technomedical science. Thus, the development of computer programs for testing and treatment of clients, e.g. through various exercises, continues and have increasingly commercialised.

Within the technotherapeutic perspective quality of computer use is ensured through the application of mainly two standards. One is related to the computer's ability to perform as a human (e.g. Heiser et al., 1979; Baer et al., 1993). This criterion was dominant in the early days of psychiatric computer use. But with the diminishing hope of constructing artificial intelligence it has lost some relevance, although it can still be found. Another more important standard is the computer's 'medical' effect. Computer programs are often developed with the anticipation that the use will have a positive effect on the illness of the client (e.g. Benedict, et al., 1994; Medalia et al., 1998). Accordingly, the evaluations of the programs seek to verify this hypothesis through controlled clinical trials well-known from the evaluation of 'ordinary' medicine (Hougaard 1987).

Viewed from within the perspective of much humanistic research and action research the technotherapeutic perspective is

much too limited. The objection is of course not related to the interest in improving therapeutic practice through the use of computers. The problem is rather the view on practice found within the technotherapeutic perspective. Standards are developed 'far away' from psychiatric practice and based upon concepts taken from techno-medical science. The everyday life of health professionals and clients is not taken into account. Thus, the computer is in a way liberated from its technomedicalised context.

Computers in psychiatric practice

In collaboration with Klaus Kaasgaard, Peter Lauritsen carried out fieldwork on the use of computers in psychiatric practice. As part of this fieldwork, psychiatrists and occupational therapists at a psychiatric hospital as well as clients at an outside clinic (with former clients as board members) were interviewed. In addition, participant observation, including participatory design and evaluation processes, was carried out in both places (Kaasgaard and Lauritsen, 1995 & 1997; Lauritsen et al., 1997; Lauritsen and Kaasgaard, 1997).

The following analysis of the collected material shows how the use of computers in psychiatric practice is conceptualised along several lines. These conceptualisations include, but also expand, the technotherapeutic perspective. In other terms, health professionals can approve clients' computer use for several reasons, but the use must still meet various standards of quality. This is also the case when it comes to clients, who first of all view the computer as a possibility of becoming 'normal'. This term must, however, be seen in a socio-historical perspective instead of a medical.

The computer in the perspective of health professionals: psychiatrists and occupational therapists

In psychiatric practice clients use computers in various ways. It is used for work, leisure and education, and it is furthermore integrated in activities of treatment. In principle, health professionals see the value of all these uses. Thus, the computer is not just seen as a treatment tool but as a flexible technology. This flexibility entails that the decision on whether or not the computer should be used and the purposes for which it should be used is based on local circumstances. These 'local' decisions are, however, informed by more general concepts of how to ensure quality.

An important theme in the perspective of the psychiatrist, which to some extent also can be found among the occupational therapists, is the use of computers for improvement of activities directly related to treatment. For example, cognitive dysfunctions might be rehabilitated through the use of computer. Thus, as can be seen in the following quote from a project description made by a psychiatrist, traces of the technotherapeutic perspective can still be found:

> The purpose of this investigation is to study the following questions relevant to treatment:
>
> 1. Can a computer based rehabilitation program advance and sharpen patients' (persons in treatment) attention span?
> 2. Can a possible positive effect be generalised to other 'attention tasks' not rehabilitated?

The hypothesis that computer use might improve the cognitive function of the patient is well-established within technotherapy (Benedict et al. 1994; Medalia et al. 1998). The question is, however, if a positive output from the computer use can be transferred to the broader ecological setting of the patient's daily life.

Another central theme in the perspectives of both psychiatrists and occupational therapists is that providing access to computers is a way of accommodating the clients. According to the health professionals it is important that psychiatric institutions reflect the surrounding society where use of computers is a common activity. Therefore, the institution must offer its clients the possibility of using computers. It is, however, clear that the clients' wish for using computers implies a motivation for engaging in other activities. Especially the occupational therapists, but also the psychiatrists, view the clients' use of computers as a possibility of improving social relations. To some clients intimate social relations, for instance face to face relations, are difficult to handle. In these situations the use of computer can make the relation more anonymous and thereby afford better communication between client and health professional. Furthermore, the occupational therapists believe that the use of Internet and e-mail can strengthen the social relations of the client in his or hers ordinary life. This shows in the following statement by an occupational therapist:

> There are so many possibilities [in using computers]. I have a vision that we had a writing workshop. A place with computers where one could write poems or maybe communicate with other people in the world through e-mail… It is also a way of getting in touch with other people. It is a funny thought that a patient with schizophrenia, who might be rather isolated in his flat… everyday goes to a place in order to get food and so, [and then he] also takes a game of chess with a guy in Russia or wherever. It opens possibilities of becoming more active than just staring at the blue sky.

Thus, the Internet makes it possible for clients to transgress the limits of the very local setting and join a wider community. In this way the border between 'the local' and 'the global' context becomes blurred.

The health professionals identify a positive potential in the clients' use of computers. They do, however, also identify certain negative aspects. For example, social relations can be damaged if the clients use the computer too much and get too occupied by it, and thus cut off relations to health professionals and other clients. Furthermore, it is feared that some clients become psychotic by using computers. According to the psychiatrists and occupational therapists it is therefore important that certain mechanisms are put in place in order to ensure the quality of the clients' use of computers. Thus, it is found necessary that health professionals take control over the clients' computer use. A health professional made the following remark:

> The computer has to be placed in a pre-defined structure. Otherwise – and this we have experienced – some [patients] would be inclined to sit in front of the screen all of the time. There is a relative risk attached to [the use of] the computer. It is, however, not a complete obstacle, I guess. One can just make some rules on how to use it.

In the end it is for the health professionals to decide whether or not a client should use the computer and for what purposes it should be used. To make this decision professional knowledge is called for. While the need for such knowledge is underlined by the occupational therapists, the psychiatrists highlight the need for controlled clinical trials if the computer is to be viewed as a treatment tool. Thus, even though the computer must be applied and evaluated according to local contingencies both psychiatrists and occupational therapists draw on general standards of health for ensuring quality in the use of computers by psychiatric clients.

The computer in the perspective of the clients

The clients at a psychiatric outside clinic use the computer in various work-related activities (word processing, DTP, etc.). Thus, taken at face value, the computer is a working tool, which in addition is used for entertainment and leisure. The computer is, however, conceptualised along different lines and measured against other standards than just being a tool or a leisure activity.

One aspect, which is often mentioned by the clients, is that it can be hard to perform activities, which are easy for most other people, for example writing minutes or letters. However, when a word processor is used mistakes can be corrected and are not reflected in the final product. This was often stressed by the clients as a way of escaping their stigmatising diagnosis. Furthermore, computer skills are clearly given high status by the clients. A client stated:

> Well, one day there will be a huge gap [between] those who use computers and those who do not. That is the way I look at it. And I realised that a long time ago. So that is why I have always been interested in [computers]; because to me [computers] have always been the future.

Thus, to do well in society is closely related to the ability to master information technology. This connection between computers and 'success' entails that computers can be used in other kinds of 'activities of normalisation'. For example one client said:

> I am not proud of being here… On the one hand I need that people recognise that I am ill, and I need that people pay attention to that. On the other hand, I would like to appear as normal as possible. So, if I can stick out from the crowd [the other clients] by being a computer expert then I can better defend being here.

As indicated here the clients can use the computer for 'mobilising arguments' that justify their stay at the clinic to themselves, family and friends. However, the use of computer does at the same time create an 'internal' differentiation between users and non-users. Thus, computer users are likely to stick out as 'more normal' than clients who do not engage in computer related activities.

In our investigation the clients made very few critical remarks on the use of computers and often clients, who were unfamiliar with the new technology, expressed a wish for becoming computer users in the future. However, negative evaluations might be hidden by a tacit avoidance behavior and an incomplete knowledge of how to use the computer.

Discussion

As described above, the technotherapeutic research perspective views psychiatric practice as flawed by 'the too human therapist' who relies more on intuition than on theories and methods approved by techno-medical science. This is clearly expressed in the call for controlled clinical trials. But the examples taken from our empirical study of computer use at two psychiatric institutions show how the technotherapeutic perspective itself is flawed and too limited. It ignores, for example, situations of use which are not directly related to treatment, although these situations are important to health professionals and clients. In other terms, the technotherapeutic perspective does not offer much help to health professionals and clients who are trying to develop standards that can assure quality of computer use in other situations than treatment in a narrow sense of the word. Thus, it would be reasonable to conclude that technotherapeutic research is insufficient because it ignores the context of computer use, and the users' perspective on this

use. Following this, another research perspective with close affinity to the context of the users, which could contribute to the development of practice, would seem important.

However, the call for such a research perspective is not entirely unproblematic. Arguing for a closer attention to practice runs the danger of unreflexively falling back upon the concepts of 'context' and 'user-perspective'. In much humanistic research as well as in action research these concepts arguably imply a romantic view on practice as pure and uncontaminated by 'the outer world'. Thus, 'context' is viewed as a container demarcating the local practice from 'the global'. Likewise 'the user perspective' seems to denote a 'subjective' world-view closely linked to the local context and thus contrasted to 'a general' or 'an objective' way of knowing the world. These sharp distinctions are, however, difficult to maintain. As our investigation shows the perspectives of the psychiatrists are clearly informed by techno-medical science. And in the 'local' practices of the occupational therapists and clients one finds traces of 'general' concepts of health. Thus, what is needed is a kind of research not limited by artificial borders of 'the context' or 'the user-perspective'.

Such a perspective on practice could benefit from several theoretical positions. Thus, both discourse theory (Foucault, 1990), and Actor-Network-Theory (Callon and Latour, 1981; Latour, 1993) have attempted to free actors from their entrapment in local contexts without placing themselves in a structuralist position. Thus, according to Callon and Latour (1981: 279)…

> We cannot distinguish between macro-actors (institutions, organizations, social classes, parties, states) and micro-actors (individuals, groups, families) on the basis of their dimensions, since they are all, we might say, the 'same size', or rather since size is what is primarily at stake in their struggles it is also, therefore, their most important result.

And even in the phenomenological tradition (sometimes used for legitimising the focus on 'context' and 'user-perspective') one finds concepts breaking the barrier to the surrounding world. This is apparent in the work of Alfred Schutz, well-known for his sociological analysis of the life-world (Schutz and Luckmann, 1985 & 1989). According to Schutz every situation is, in a strict sense, unique. It is, however, at the same time typical. When actors organise, or 'construct', a situation they draw on a reservoir of experiences on how to handle 'this kind of situation'. These experiences are organised in 'types'. That is, 'frames' or 'heuristics' which enable the actor to recognise and handle the present, unique situation because of its similarity to other situations. Even though the types held by the actor are unique and applied in different ways according to the specific situation, the interpretation of the situation is not solely dependent on local contingencies. This is so because the types of the individual are founded in the social history of wider society. Through processes of socialisation the individual takes over typical ways of handling typical situations. What is briefly indicated here is important to our investigation and to the more general discussion of 'context' and 'user-perspective'. Following Schutz, health professionals and clients take local contingencies into account when understanding computer use, but at the same time they draw on a socio-historical reservoir of resources. If this is neglected the concepts of 'context' and 'user-perspective' might be reduced to seductive devices for well-meaning research.

Acknowledgement

The authors wish to thank Henrik Bødker, Casper Bruun Jensen and Stinne Hoejer Mathiasen for comments on earlier drafts of this article.

References

Baer, L.; Brown-Beasley, M.W.; Sorce, J. and Henriques, A.I. 1993. Computer-Assisted Telephone Administration for Obsessive-Compulsive Disorder. *American Journal of Psychiatry*, 150:11, 1737-1738.

Benedict, R.H.B.; Harris, A.E.; Markow, T.; McCormick, J.A.; Nuechterlein, K.H. and Asarnow, R.F. 1994. Effects of Attention Training on Information Processing in Schizophrenia. *Schizophrenia Bulletin*, vol. 20, no. 3, 537-544.

Bloom, B.L. 1992. Computer-Assisted Psychological Intervention: A Review and a Commentary. *Clinical Psychological Review*, vol. 12, 169-192.

Callon, M. and Latour, B. 1981. Unscrewing the Big Leviathan – How do Actors Microstructure Reality?. In Cetina, K. K. and Cicourel, A. (eds.) *Advances in Social Theory and Methodology toward an Integration of Micro and Macro Sociologies.* London: Routledge and Keagan Paul, 277 – 303.

Colby, K. M. 1976. Clinical Implications of a Simulation Model of Paranoid Processes. *Arch. Gen. Psychiatry*, vol. 33, 854-857.

Colby, K. M. 1979. Computer Simulation and Artificial Intelligence in Psychiatry. In Serafetinides, E.A: *Methods of Biobehavioral Research*. New York: Grune & Stratton.

Colby, K.M. 1995. A Computer Program Using Cognitive Therapy to Treat Depressed Patients. *Psychiatric Services*, vol. 46, no 12, 1223-1225.

Colby, K.M.; Watt, J.B. and Gilbert, J.P. 1966. A Computer Method of Psychotherapy: Preliminary Communication. *Journal of Nervous and Mental Disease*, vol. 142, no. 2, 148-152.

Elliott, R. 1998. Editor's introduction: A guide to the empirical supported treatments controversy. *Psychotherapy Research*, 8, 115–125.

Foucault, M. 1990. *The History of Sexuality: An Introduction*. New York: Random House.

Heiser, J.F.; Colby, K.; Faught, W.S. and Parkinson, R.C. 1979. Can Psychiatrists Distinguish a Computer from the Real Thing? The Limitations of Turing-like Tests as a Measure of the Adequacy of Simulations. *Journal of Psychiatric Research*, vol. 15, 149–162.

Hougaard, E. 1987. *Psykoterapeutisk Effektforskning: Design og målemetoder,* Psykologisk Skriftserie Aarhus, vol. 12, no. 17, Psykologisk Institut, Aarhus Universitet.

Krogstrup, H. 1997. *Brugerinddragelse og organisatorisk læring i den sociale sektor.* Aarhus: Systime.

Kaasgaard, K. & Lauritsen, P. 1995. The Use of Computers in Cognitive Rehabilitation in Denmark. *American Journal of Speech-Language Pathology*, vol. 4, no. 2, 5-8.

Kaasgaard, K. & Lauritsen, P. 1997. Participatory Design at a Psychiatric Daycenter: Potentials and Problems. In Pappas, C.; Maglaveras, N. & Scherrer, J.-R: *Medical Informatics Europe '97*, Amsterdam: IOS Press.

Latour, B. 1993. We have never been Modern. New York: Harvester Wheatsheaf.

Lauritsen, P. & Kaasgaard, K. 1997. Computer Programs and Clinical Contexts: Two Computer Based Exercises for Cognitive Rehabilitation. In Pappas, C.; Maglaveras, N. & Scherrer, J.-R: *Medical Informatics Europe '97*, Amsterdam: IOS Press.

Lauritsen, P.; Kaasgaard, K. & Elsass, P. 1997. Computere i Psykiatrien. En undersøgelse af lægers og ergoterapeuters 'i-tale-sættelse' af computerens anvendelsesmuligheder i arbejdet med psykiatriske patienter. In Elsass, P.; Olesen, F. & Henriksen, S.: *Kommunikation og forståelse. Kvalitative studier af formidling og fortolkning i sundhedssektoren.* Aarhus: Philosophia.

Mattingly, C. 1998. *Healing dramas and clinical plots. The narrative structure of experience.* Cambridge: Cambridge University Press.

Medalia, A.; Aluma, M.; Tryon, W. and Merriam, A.E. 1998. Effectiveness of Attention Training in Schizophrenia. *Schizophrenia Bulletin*, vol. 24, no. 1, 147-152.

Murphy, J.W. and Pardeck, J.T. 1986. Technologically Mediated Therapy: A Critique. *Social Casework: The Journal of Contemporary Social Work*, vol. 67, no, 10, 605-612.

Schutz, A. and Luckmann, T. 1985. *The Structures of the Life-World*, vol. I. Evanston: Northwestern University Press.

Schutz, A. and Luckmann, T. 1989. *The Structures of the Life-World*, vol. II. Evanston: Northwestern University Press.

Suchman, L.A. 1987. *Plans and Situated Actions. The Problem of Human-Machine Communication*. Cambridge: Cambridge University Press.

Sundhedsstyrelsen. 1996. *Kriterier, standarder og indikationer for kvalitet.* Kommiteen for Sundhedsoplysning.

Turkle, S. 1997. *Life on the Screen. Identity in the Age of the Internet*. London: Orion Books.

Weizenbaum, J. 1966. ELIZA – A Computer Program For the Study of Natural Language Communication Between Man and Machine. *Communications of the ACM*, vol. 9, no. 1, 36-43.

Weizenbaum, J. 1985. *Kurs mod Isbjerget*. København: Gyldendal.