A Training Apartment With Electronic Aids To Daily Living: Lived Experiences of Persons With Brain Damage

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OBJECTIVE. The objective of this study was to investigate how persons with acquired brain damage experienced their 1-week stay in an apartment fitted with electronic aids to daily living (EADL). The study focused on how the individuals adapted to this artificial environment in their performance of daily activities and how their occupational experiences influenced their view of the future.

METHODS. The 11 participants were interviewed on the last day of their rehabilitation period in an EADL-equipped training apartment. The data were collected and analyzed using the Empirical Phenomenological Psychological (EPP) method.

FINDINGS. The findings revealed four main characteristics that described an adaptation process that occurred during the week in the EADL-equipped training apartment: plunging into an EADL-equipped environment, “landing” and feeling comfortable with the new environment, incorporating the “new” in daily activities, and “taking-off” for the future.

CONCLUSION. In a short time, the combination of the EADL and the aesthetically attractive environment gave the participants experiences that contributed to a “taking off” for their future life. Findings from this study suggest that, in clinical practice, clients may need initial guidance from the therapists to “land” and feel comfortable in a new environment, like a training apartment, before they can learn how to incorporate new electronic aids in their every day activities.

Sweden suffer from moderate traumatic brain injury and 5,000 persons (less than 65 years of age) from stroke (National Board of Health and Welfare, 1999, 2001). After a period in intensive care in a neurosurgery ward or stroke unit, 30% of the persons with acquired brain damage (who are under the age 65) get individualized rehabilitation in specialized rehabilitation clinics (National Board of Health and Welfare, 1999, 2001).

The impairments following acquired brain damage are unique and vary according to type, localization and severity of damage (National Board of Health and Welfare, 1999, 2001). Cognitive impairments are the most common consequences of traumatic brain injury (Oliver, Ponsford, & Curran, 1996; Ponsford, Oliver, & Curran, 1995; Socialstyrelsen, 1993; Tennant, MacDermott, & Neary, 1995) with fatigue, mood changes and headache being other frequently encountered consequences (Koskinen, 1998). Motor impairments, as well as perceptual cognitive impairments, are often reported as consequences of stroke (Berndspång & Fisher, 1995).

Research has also revealed limitations in performing everyday activities such as household tasks (Berndspång & Fisher, 1995; Lindberg & Fugl-Meyer, 1996; Ponsford, Oliver, & Curran, 1995; Tham, Borell, & Gustavsson, 2000) and leisure activities (Lindberg et al., 2000; Socialstyrelsen, 1993) following acquired brain damage. About 25–50% of those with acquired brain damage return to work (Fleming, Tooth, Hassel, & Chan, 1999; Gollaher et al., 1998). One general assumption from these studies might be that those with acquired brain damage tend to have a restricted ability to learn how to adapt to environmental demands encountered in performing their daily activities. On the basis of this, one could expect that it is even more difficult for them to learn to handle a challenging technical environment, such as the training apartment used in this study.

According to Schkade and Schultz (1992), occupational adaptation is a frame of reference that describes the integration of two different concepts, occupation and adaptation. The concept of adaptation is central in occupational therapy literature and was first mentioned by Adolph Meyer (1977). Most authors describe the concept of occupational adaptation as a process involving the person and the occupational environment or the interaction between them (Frank, 1996; Kielhofner, 2002; Nelson, 1998; Schkade & Schultz; Spencer, Davidson, & White, 1996). This adaptation process is most commonly viewed as an individual and internal process that occurs through occupation. Nelson also stresses that learning is a part of this adaptation process. Frank has, however, introduced a broader definition emphasizing that adaptation is a process of selecting and organizing occupations in an ever-changing environment, in individuals or within groups, to improve life opportunities and enhance the quality of life experienced. Spencer, Davidson, and White also state that adaptation is a lifelong cumulative process in which memories of past occupational experience influence how a person shapes his or her future. According to Schkade and Schultz, occupational therapy intervention should focus on using occupations that are meaningful to the individual in order to influence the internal adaptation process in a positive direction. This will result in experiences of mastery in daily activities.

**Environment and Technology**

Access to computers has increased dramatically over the last 2 decades and electronics have developed into a core technology for communication in everyday life. Technology that promotes independence in occupation is also available in the form of EADL (Lange & Smith, 2002). Furthermore, development has occurred to make EADL more usable for persons with disabilities; now the challenge for occupational therapists is to provide clients with disabilities with suitable EADL (Anson, 2001; Lange & Smith, 2002) and to integrate the technology into the disabled person’s natural occupational settings (Smith, 2000). Dilani (2001) has pointed out the importance of combining the human perspective with the latest developments in technology to advance health care in the future. The aspiration is to build well-designed physical environments that are not only functionally efficient but also highly psychosocially supportive.

There is as yet little documentation on the outcomes of using EADL and no research has been found in the literature on how persons with acquired brain damage experience EADL in a training apartment. The literature concerning EADL and neurological rehabilitation has mainly focused on computerized education and training for clients with brain damage (Blundon & Smits, 2000; Patyk, Gaynor, Kelly, & Ort, 1998; Stern, Jeaco, & Millar, 2000). According to Lange and Smith (2002), more studies need to be focused on evidence-based practice to document empirical evidence of the outcomes of these types of technologies.

**The Phenomenological Perspective**

The phenomenological perspective taken in this study is focused on the participants’ experiences of the adaptation process in the EADL-equipped training apartment. According to phenomenology, the individual’s life-world is subjective and culturally meaningful, and it is also taken for granted (Husserl, 1970). The life-world experience is a practical and nonreflective way of being in the world and its
existence is never questioned. According to the French phenomenologist Merleau-Ponty (1962), the “lived body” is the starting point from which a person grasps his or her life-world and inhabits space and time in everyday life. When peoples’ life-situations change because of, for example, brain damage, their life-world experiences will also dramatically change.

There is, however, a lack of knowledge of how persons with brain damage experience and transform their ways of being in the life-world, and how they learn to interact with the environment in different types of more or less demanding settings. In this study, we sought to describe and understand the nature of the phenomenon of occupational adaptation during a 1-week stay in an EADL-equipped training apartment for persons with acquired brain damage. A better understanding of how persons with acquired brain damage adapt to a specific environment can guide occupational therapists to develop environments that give the individual client the “right challenge” for optimal adaptation in everyday life.

Methods

The study is qualitative, descriptive, and interpretative. The Empirical Phenomenological Psychological (EPP) method (Karlsson, 1993) was used during collection, analysis, and interpretation of the interview data obtained from persons who had just completed their participation in a 1-week rehabilitation program in a training apartment equipped with EADL.

Participants

The participants in this study comprised 11 persons with acquired brain damage—6 men and 5 women. Nine of the participants were rehabilitation inpatients at the time of the study and 2 of them had been discharged from the rehabilitation clinic and were living in their homes. The participants were recruited from a short-term project (Lindberg et al., 2000) where a total of 20 patients with motor or cognitive impairments or both spent 1 week at the end of their rehabilitation living in an EADL-fitted training apartment. The last 11 of these patients participated in this study. The criteria for participation in this study were the same as those for the project, namely that the participants: (a) were more than 18 years old; (b) had no other disease associated with regular medical control; (c) had no known psychological or drug problems; (d) were motivated to participate in the study and to live independently in their homes; (e) understood the Swedish language; (f) had acquired the disability secondary to brain damage during adulthood (physical disability was indicated by a Functional Independence Measure [FIM] [Grimby et al., 1996] score < 5 ADL or cognitive disability or both was indicated by a Mini-Mental State Examination [MMSE; Folstein, Folstein, & McHugh, 1975] < 20, without experiencing more than moderately impaired memory according to the Rivermead Behavioural Memory Test [RBMT; Wade, 1992; Wilson, Cockburn, Baddeley, & Hiorns, 1989]); and (g) had no other major cognitive impairments, such as aphasia, apraxia, or spatial or visual disturbance according to the Neurobehavioral Cognitive Status Examination (NCSE) (Northern California Neurobehavioral Group, 1989). The participants received written and verbal information regarding their participation and they gave their verbal agreement to participate. The ethical committee of the author’s university approved the study. The 11 participants’ clinical characteristics are described in Table 1.

The Training Apartment

The training apartment was a physical space of 90 square meters representing a domestic environment that aimed to simulate a real-life situation. The goal in designing and establishing the apartment was to create a home-like environment, appropriate for people with motor or cognitive

Table 1. Clinical Characteristics of the Participants.

<table>
<thead>
<tr>
<th>Participants</th>
<th>Age (years)</th>
<th>Sex</th>
<th>Diagnosis</th>
<th>Months Since Brain Injury</th>
<th>Hemiparesis</th>
<th>FIM Motor***</th>
<th>MMSE****</th>
<th>RBMT*****</th>
<th>Computer Experience</th>
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<tr>
<td>P 1</td>
<td>57</td>
<td>F</td>
<td>LCVA*</td>
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<td>90</td>
<td>28</td>
<td>Mild</td>
<td>Some</td>
</tr>
<tr>
<td>P 2</td>
<td>44</td>
<td>F</td>
<td>SAH**</td>
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<td>No</td>
<td>91</td>
<td>30</td>
<td>Mild</td>
<td>Yes</td>
</tr>
<tr>
<td>P 3</td>
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<td>RCVA*</td>
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<td>27</td>
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</tr>
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<td>P 4</td>
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<td>29</td>
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<td>-</td>
<td>No</td>
<td>Yes</td>
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<td>Inf. cerebellum</td>
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<td>Moderate</td>
<td>Yes</td>
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<tr>
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<td>Some</td>
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<tr>
<td>P 11</td>
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<td>F</td>
<td>Traumatic R+L</td>
<td>1</td>
<td>No</td>
<td>91</td>
<td>-</td>
<td>No</td>
<td>Some</td>
</tr>
</tbody>
</table>

* Left/Right cerebro vascular accident ** Subarachnoidal hemorrhage *** Functional Independence Measure (max score 91, scores < 78—in need of assistance for personal care), ****Mini-Mental State Examination (max score 30, scores < 24—cognitive dysfunction) ***** The Rivermead Behavioural Memory Test
disabilities or both. The environment was designed to be functional, safe, secure, and comfortable, and to allow the resident maximum self-sufficiency and socialization. The apartment consisted of a hall, a kitchen, a living room, one big and one small bedroom (the small one intended for a caregiver or a family member), and two bathrooms. The living room opened on to a garden where the participants could do some gardening. A computer was placed in the center of the apartment in the living room. Each participant had an individualized time-planning schedule (computerized) that was connected to an alarm system; the alarm gave a preset signal to mark the commencement of each of the planned activities and to signal the time to wake up.

Throughout the apartment, the doors, window shades, the telephone, the TV, the stereo equipment, etc., could be controlled by remote control or by voice control. All participants’ wore wrist-care alarms connected to the ward unit in order to ensure that they felt secure during the day and night. The kitchen, which included an area for eating, had an overheating protection device for the stove and the oven. The furniture in both the kitchen and bathrooms was adjustable to suit each participant’s needs and abilities. The bedroom was equipped with a so-called “good night button” that the participants could use (from the bed) to lock the doors, switch off the stove, etc., before going to sleep. In each bathroom there was a water alarm, connected to the ward unit, that was programmed to go off if the participant had not flushed the toilet in a 24-h period or if the water was left running. The entrance hall had a good-bye button and door alarm to remind the participants if they had forgotten to do something before leaving the apartment.

The Intervention Program

The 11 participants each stayed alone for a 1-week period in the training apartment, which served as an intermediate station between hospital care and the home environment. The general aim of the intervention program was (a) to assess the participants’ functioning in daily activities; (b) to enable the participants to have the experience of being able to control their everyday lives; (c) to improve the participants’ functioning in daily activities; (d) to enable the participants to make the transition between institutional life in the hospital and “real life” as smoothly as possible. The occupational therapy intervention (i.e., face to face contact with the occupational therapist) in the training apartment was individualized, comprised 1–3 hours each day, and focused on improving the performance of daily activities in the training apartment by using the modified (EADL-equipped) environment to minimize the environmental demands.

Within the training apartment, the occupational therapists initially focused their intervention on teaching the participants how to use the technical equipment. Thereafter, they assisted the participants to integrate the use of the technical equipment with performing daily activities such as preparing breakfast, lunch, and dinner or doing the laundry. As the participants gradually became more independent in their daily activities during the week, the occupational therapists’ gradually withdrew their support.

In addition to performing daily activities relevant to each individual in the training apartment, the participants also underwent individualized conventional rehabilitation interventions such as occupational therapy (1–2 hours), physical therapy (1–2 hours), or medical, psychological, or speech therapy, or all of these. The participants were expected to perform all activities that were required to live in the apartment as well as conventional rehabilitation activities.

Data Collection

On the last day of the weeklong rehabilitation, one extended interview was conducted with each participant by the first author. The interviews took place in the EADL-equipped training apartment and each interview lasted 50–90 minutes. Questions were informal and open-ended and focused on the participants’ experiences of performing daily activities in the training apartment. The participants were asked to concretely and spontaneously describe their recent experiences concentrating on how they performed their daily activities, and to recount how they experienced and managed these activities. The interviews were taped and transcribed verbatim.

The interviews were supplemented by field studies conducted by the first author, including an introduction to the EADL-equipped training apartment, interviews with the occupational therapists concerning the intervention program and observations of the participants as they performed some activities, such as while making coffee in the training apartment. Field notes were taken on these occasions. The field studies helped the researchers better understand the participants’ experiences, as described in the interviews, during the phenomenological analysis.

Data Analysis

A modified form of the Empirical Phenomenological Psychological (EPP) method (Karlsson, 1993) was used to analyze the data. Specifically, the psychological focus of the method was replaced with a focus on the daily occupational experiences of the participants.

The EPP method aims to describe the meaning structure of a phenomenon based on the researcher’s examination of the participants’ concrete descriptions of their experiences. The participants’ experiences of the adaptation process in the EADL-equipped training apartment were
approached as a new phenomenon that had to be understood in its own right. In the analysis the researcher is guided by the discovery of the intentionality of consciousness, which means that the researcher attempts to identify the meaning of the participants’ life-world experiences in light of the phenomenon being studied. What is experienced (object) stands always in a relationship to an experiencing subject. The fact that the participants, for example, prepared lunch in the training apartment is not interesting per se. Rather, the question of interest is how did the participants’ experience (the meaning of) the preparation of the lunch. During this process of analysis, the researcher abstains from making hypotheses or proposing theories to make the phenomenon intelligible. The phenomenological researcher strives to be as open as possible to the lived non-reflective experience of the phenomenon in question, since her or his goal is to describe the meaning structure of the phenomenon as faithfully as possible. Such an analysis, however, should not be confused with a phenomenal description of the experience. The phenomenological aim is to trace out the meaning structure of the experience. The participants’ description is on a phenomenal level, but the researcher’s aim is to trace out the essential characteristics of the experience and his or her own reflection upon relevant material.

The phenomenological analysis of the participants’ spontaneous experiences can be described briefly in two steps: First, the researchers examined each interview with the intention of gaining an understanding of the explicit and implicit meaning (essential characteristics) of the individual’s experience. In the second step, the analyses from all participants were compared and interpreted in order to trace out the general (from all participants) meaning-structure of the phenomenon, and to identify its main characteristics. The researchers (the first two authors and the last) discussed alternative interpretations until the most likely were identified. From this analysis a general structure of a changing process appeared that consisted of four phases of an occupational process. In the second step the researchers also identified aspects (subcharacteristics) of the main characteristics with the intention of grasping deeper understandings. The researchers sought to assure credibility by moving back and forth between their interpretations and the data obtained for each participant. The analyses were discussed and refined numerous times among the researchers to clarify the final interpretation.

Findings

The meaning structure of the participants’ experiences of everyday occupation in the training apartment, equipped with EADL, consisted of four main characteristics, which are presented in the order they were derived during the data analysis. These (main) characteristics are viewed as phases overlapping each other in an occupational process that was common to all the participants during their 1-week stay in the EADL-equipped training apartment. The meaning structure describes how the participants were “plunged into” the new EADL-equipped environment, “landed” in an environment in which they felt comfortable, and how they were able to incorporate “the new” in their daily life which, thereby, seemed to result in an ability to “take off” for a new life (see Figure 1).

“Plunging Into” an EADL-Equipped Environment

Having to “plunge into” an EADL-equipped training apartment aroused many different emotions both before the stay and immediately after the initial moving in. Examples were fear, stress, frustration, and loneliness, but also feelings of expectation, curiosity, and excitement. Initially, the EADL-fitted training apartment was found to be challenging, a feeling that seemed to be related to the fact that the environment was new for them and that the alarm system was unfamiliar. The participants also stated that they felt insecure about their own ability to handle the alarm and that they were concerned about the consequences of any eventual failures.

The first new technology-related task the participants were given to do was learning how operate the alarm system in the apartment. This skill was viewed as a prerequisite for living in a satisfactory manner. The participants stated that their experiences in the EADL-equipped environment were a strong contrast to their experiences in the environment they had come from, that is, from the ward unit at the rehabilitation clinic. The experience of being thrown from a restricted ward unit into an unknown and more open context was associated with feelings of heavy demand. They felt

Figure 1. The meaning-structure of the adaptation process consisting of four main characteristics and subcharacteristics

“Plunging into” an EADL-equipped environment

“Landing” and feeling comfortable with the new environment
Mastering the EADL-equipped environment
Perceiving EADL as comfortable
Structure provided by the computer
Receiving support for adaptation through the aesthetic environment

Incorporating “the new” in daily activities

“Implying off” for the future
Regaining dignity through the inspiring environment
Incorporating social interaction—for the future
that the ward unit had put a very low demand on their abilities to perform daily activities. The participants said that it had been difficult to personalize their “lifestyle” on the ward unit and gave several examples of how they had felt restricted. Examples were that they could not “listen to music at full volume,” “interact with their family and friends,” or “keep their personal integrity” because of sharing a room with strangers.

The EADL-equipped environment was, however, also the source of feelings of stress, frustration, and insecurity. These feelings were mainly expressed in the beginning, before the participants had become familiar with their new environment, the EADL and the technical aids, and before they had incorporated these special features into their daily activities in the apartment. Learning how to use the new technology was a part of the adaptation process that occurred during the week.

A few examples serve to illustrate the participants’ frustration and stress at the beginning of their 1-week stay. One participant stated, “All those alarm signals disturbed me and I couldn’t understand how they worked.” Another participant expressed a similar example of the initial stress, “The alarm sounds here and there, you can hear sounds from the computer, which says bong, bong, and then I have to run to the computer.”

In some cases the mistakes of the participants had significant consequences. One example was when a participant had to interrupt his stay in the apartment and spend the night in the ward. The origin of the problem was a malfunction that started the alarm connected to his wristwatch:

As I remember, I didn’t touch it [the wristwatch]. You have to push hard [to operate it] and I didn’t do that. It happened before I fell a sleep. When the alarm starts, the electricity is shut off and you cannot close the door. Because of this I was not allowed to sleep there the first night, and was taken up to the ward unit. Of course, I was a little worried.

The demands related to learning how to use the EADL and the consequences of using this technology created feelings of uncertainty. On one occasion a participant took off his wrist alarm that registered bodily functions, this set off the alarm in the ward, which, in turn, resulted in the staff thinking that something serious had happened: “What I had failed to understand was that the bracelet was sensitive to my pulse and probably also my temperature.”

“Landing” and Feeling Comfortable With the New Environment

Despite the initial feelings of uncertainty related to the “new” environment, the positive meaning of the EADL was also appreciated. After the first confrontation with the new environment, the participants gradually began to feel that they could handle the technology and a sense of security seemed to emerge. The characteristics of this phase were that the participants felt that they had landed successfully and that they had started to “feel at home.” The environment seemed to create confidence in their ability to manage their everyday life during the weeklong stay, and the alarm system and the computer began to be the “core” objects providing these feelings of safety and security.

Mastering the EADL-Equipped Environment. Initially, the participants stated that the environment had more control over the situation in which they were to live than did they themselves. However, being able to take control, whether partly or fully, during the week in the training apartment contributed to the experiences of gradually becoming more secure and more capable of performing daily activities independently. Situations that required control concerned the handling of the EADL. Initially the occupational therapist had to instruct the participants in how to use the alarm system. Thereafter, the occupational therapist supported the participants’ in learning how to integrate the technology in different daily activities that they needed to perform during the week. The participants said that the situation required them to organize how they would spend their day:

To be able to handle the program, to get everything done, you still needed to do a lot, take a shower, make the bed, dress yourself, check and then start the equipment, to see that you haven’t forgotten anything, to make sure that the doors are locked when you leave the apartment, not to forget the alarm, which you have to put on.

Mastering the EADL-fitted environment seemed to be a challenging and stimulating task for the participants.

Perceiving EADL as Comfortable. The participants also felt that the alarm system provided security, which helped them to relax and to feel comfortable. Instead of being dependent on their own capacities, they could transfer the responsibility to the alarm system, which seemed to be a liberating experience. The participants said, for example, that the alarm system reminded them that they had forgotten to turn off a hot plate, to close the door of the refrigerator, or had omitted to include the physical or occupational therapy sessions. It seemed as though the participants relied upon the computer’s memory rather than their own, which implies that the technology had ceased to be an obstacle and had become embodied as a tool to help them to remember things and to transform and expand their life-world experiences (cf. Merleau-Ponty, 1962).

Thus, despite the problems associated with their brain damage, the participants seemed to be able to adapt to the new highly technological and EADL-fitted environment. Their experiences within this safe environment seemed to enable adaptation during the week. During the week in the
training apartment, one participant regained her confidence in her own ability, which gave her the courage to take the step to live on her own:

It has been of great value for me because I was so afraid of living alone....It was very strange for me to be alone, it was the first time since I got ill. Thankfully I could feel secure because I knew that nothing particular could happen thanks to the alarm system....All week I've felt secure here.

I'm very happy that it has worked out so well.

**Structure Provided by the Computer.** The participants claimed that the computer became an important aspect of their adaptation process. Through learning how to use it, they acquired a structure for their everyday existence. In spite of their cognitive dysfunction and, for some of them, limited computer experience, all the participants learned how to use the computer passably in the time available. The computer became “a core” object for structuring and performing their daily activities (during the week): “I’ve programmed the computer with all rehabilitation sessions I need to attend and what will happen is that it will beep half an hour before the sessions.” Another example of the significance of the computer was related to the participants’ perceived memory problems: “I was just sitting there on the sofa doing something like reading a newspaper, and had completely forgotten the swimming bath, then the computer started to bleep; oh, what had I forgotten now?”

**Receiving Support for Adaptation Through the Aesthetic Environment.** The participants considered the environment in the EADL-equipped apartment to be aesthetically pleasing and attractive because of its design, the materials and colors chosen, and the furniture and plants, which together contributed to a harmonious impression. The participants were emphatic in stating that this environment created a sense of homeyness and a cozy atmosphere, which seemed to positively influence their feelings of satisfaction and security and provided them with a feeling of dignity. One participant exemplified the experience of homeyness and the cozy atmosphere: “The apartment is perfect, fine and clean, modern, beautifully decorated; you actually feel you are at home.”

**Incorporating “The New” in Daily Activities**

During the week, the participants seemed to manage to incorporate the new environment in their daily activities by adapting their occupational performance to it. It seemed as if the performance of household activities was the starting point for the adaptation process that occurred gradually over the week. This phase of the process was characterized by the participants’ experiences of increasing competence.

The adaptation process was characterized by experiences of increased autonomy when performing household activities such as preparing lunch or dinner in the training apartment. All the participants performed these activities on a daily basis with some level of support from the occupational therapists. Through the performance of household activities, the participants were confronted with their own limitations and seemed to learn how to differentiate between what was possible and what was no longer possible; such differentiation seemed to help them obtain a realistic understanding of the limitations of their everyday world. The past and future seemed to be bridged through their use of existing habits and strategies combined with new strategies that were associated with the new EADL. One example was the alarm system in the kitchen that seemed to be easily integrated with the household activities, such as when the participants prepared lunch or dinner.

The participants expressed the significance of gradually taking control of their daily activities in the EADL-equipped training apartment in many different ways. For example, they perceived and discovered their own capacities, and also gained the motivation to perform daily activities in the future at home. The participants’ previous experiences of performing household activities varied according to their previous lifestyles, interests, or their gender, all of which seemed to influence the perceived meaning of performing these activities in the training apartment. Some of the participants had never known how to prepare dinner and one participant stated: “This [preparing meals] has been my problem here because I do not know how to cook.” This man had to learn from scratch how to prepare lunch and dinner because he could not rely on any previous experiences or habits. He initially felt that the combination of having cognitive impairment and having to learn how to prepare meals was too challenging and represented an obstacle to his adaptation. During the week, however, he overcame this problem and discovered that he had the capacity and the motivation to perform some cooking in the future: “I could think of doing more cooking, it is something that I’ve never experienced before, but I’ve learned here that it was not so difficult, it was rather enjoyable.” This example illustrates how the experience of performing household activities in the training apartment could be associated with activities in the participants’ future life and how the ability to perform these activities could enrich and widen their future horizon.

All the participants described the experience of gaining competence during the week. Gradually learning to handle everyday activities in the challenging EADL-equipped environment contributed to an awareness of competence and ability to adapt. Participants with previous experience of performing household activities readily learned how to handle these situations spontaneously and expressed...
experiences of feeling safe in their everyday life in the training apartment. Compared to those with no prior experience, they seemed to have an existing frame of reference for how they would do things that could be integrated into this new situation.

“Taking-Off” for the Future

The participants’ experiences during the week in the training apartment instigated an adaptation to reality. The training apartment created an open horizon compared with the ward unit and, in that way, facilitated freedom of action. Regarding the end of the week (i.e., in the last phase), all participants expressed feelings of freedom, inspiration, and dignity. They also described positive experiences in terms of social interaction in the apartment, which served as a “take-off” for the future.

Regaining Dignity Through the Inspiring Environment. As previously mentioned, the participants commonly compared their stay in the EADL-equipped apartment with their experiences on the ward, making their feeling of relief associated with their stay in this dignifying and homelike environment evident: “It’s incredible, compared to the training apartment, the ward unit was awful and depressing.” The training apartment seemed to enable them to live ordinary lives that recalled their previous life patterns and habits in their own homes. This ordinariness contributed to their feelings of satisfaction, but also seemed to fulfill their need for freedom both mentally and physically: “I’m used to freedom and I am able to feel free here.” Another participant expressed it like this: “Being allowed to take care of myself was something that I needed, not only mentally, but also physically, it worked perfectly.” Sometimes they also expressed feelings of happiness in this new environment: “I start the music and I raise the volume. I’ve been feeling more fit and happier since I came here from the ward.” The meaning of this environment was also implicitly associated with the performance of activities linked to their life outside the clinic, which seemed to help them to visualize themselves in their future life in their homes. For example, one person said, “I’m really looking forward to being alone in my apartment. After being here I believe I can handle that, I’ve gotten self-confidence here.”

Incorporating Social Interaction—for the Future. All the participants mentioned the significance of the training apartment as a social meeting place. The environment inspired them to invite other people to visit, which also contributed to their “take-off” for their future life-world. Often the participants invited others for coffee, lunch, or dinner, which seemed to widen their self-confidence and the feeling of dignity: “One day I invited two of the staff for dinner.” Another person expressed it like this: “I also invoked my roommates [from the ward], I thought that if they were invited they wouldn’t have to be afraid if they were going to live here.” The participants proudly demonstrated the EADL-equipped environment for the visitors and, when they invited their relatives for dinner, they sometimes adopted a new social role in an environment they could control better than their relatives. As one man commented, “My wife was invited for dinner, then I didn’t have to eat alone. I cooked and she was the guest.” These kinds of experiences seemed to widen the participants’ views of the future and to inspire the development of new habits for the future: “After this, I want to do more.”

Discussion

This study identified four main characteristics that describe the nature of the occupational adaptation of persons with acquired brain damage during a 1-week stay in a training apartment equipped with EADL: plunging into an EADL-equipped environment, “landing” and feeling comfortable with the new environment, incorporating the “new” in daily activities, and “taking-off” for the future.

The participants in this study with acquired brain damage seemed to respond positively to rehabilitation within an environment containing an enriching combination of EADL, thereby enhancing their possibility for return to independent living. The findings indicate that the participants underwent a week-long adaptation process in the training apartment, during which they learned to handle the technical equipment and to incorporate its use in their daily activities. Despite their brain damage, which may have reduced their ability to learn (Neistadt, 1998), and their varied previous knowledge about computers, all participants surprisingly learned to handle the EADL in the training apartment.

In the initial phase, when they had to “plunge into” the EADL-equipped apartment, the environmental demand was considered to be high, yet the participants’ decision to undertake the challenge to stay there for 1 week. This decision is better understood when one considers that the traditional ward unit, from which most of the participants came, was felt to be a more restrictive environment than the training apartment; the apartment represented a widening of their “horizons” (Husserl, 1970). According to Husserl, the spatio-temporal frames in the physical and social environment define the boundaries of the “horizon.” The study participants’ experiences on the conventional ward could be one reason why the training apartment was found to provide “space” in their new world and to give the opportunities, support and freedom that the participants said they needed.
During the second phase of the adaptation process the participants began to feel that they could handle the technology and that they had “landed” and felt comfortable with the new environment. The alarm system and, in particular, the computer control gave a sense of security and enabled the participants to determine the structure of the week. It appears that despite their initial fears, the experiences of stress and frustration that they recounted, the participants appreciated the challenging environment. One reason could be that the occupational therapists adjusted the challenges to “provide the right challenge” (Yerxa, 1998b) for each individual, gradually decreasing the level of support across the week. According to Schultz and Schkade (1992), the occupational environment is as important as the client’s physical or mental condition and the occupational therapist “functions as the agent of the patient’s occupational environment” (p. 918). A previous study (Tham & Kiellhofner, 2003) showed that individuals with brain damage need to feel that there is a structure to their “chaotic world” (p. 406) before they can develop (skills) and adapt their occupational performance to enable them to perform the activities required in everyday life. According to Lange and Smith (2002), most EADL require good memory and sequencing skills. The participants in this study did, however, learn to handle the EADL, which could imply that the technical equipment was appropriately adjusted to support the participants’ ability to learn or that the occupational therapist’s explanation of how to use the equipment was suitably modified to meet each individual’s ability to learn. According to the participants, the computer became a core object for structuring and performing their daily activities during the week. The computer seemed to be integrated in the participants’ everyday life in the training apartment and could be used as an extension of their memory, which further supports the assumption that objects can be integrated as an extension of a person’s body (Merleau-Ponty, 1962). An implication from the present study might be that the EADL and teaching–learning situation should be individually adjusted to support the occupational adaptation process.

In the third phase of the process, the participants seemed to incorporate “the new” in their daily life and described the experience of improving their competence to perform daily activities. According to Schkade and Schultz (1992) and also to Kiellhofner (2002), experience of occupational competence is an important component of occupational adaptation. With support from the occupational therapists, the participants in this study performed all of their household tasks in the training apartment during the week. Obtaining occupational experience from situations that are meaningful to the individual seemed to facilitate the competence and adaptation, which is in agreement with previous phenomenological studies of the lived experience with unilateral neglect after stroke (Guidetti & Tham, 2002; Tham, Borell, & Gustavsson, 2000).

At the end of the week, during the final phase, the participants seemed to experience a sense of “taking-off” for their future lives outside the rehabilitation clinic. One probable explanation for the participants’ positive experience was the combination of the EADL and the aesthetic design of the apartment, which was described by the participants as being attractive and enriching. The physical environment may have helped to provide the participants with inspiration by creating an attractive meeting place for socialization with relatives (and others). Occupational therapists could play a crucial role in creating such therapeutic climates when planning new rehabilitation settings. This is in accord with Dilani (2001) who stated that the design of the physical environment within the health care system “must be part of a healing process and promote health outcomes” (p. 35). There is, however, a need for further empirical research focusing on how the environment in different kinds of rehabilitation settings may influence the outcome of rehabilitation. Lange (2002) adds that few studies have documented the empirical success of EADL in promoting independence in occupation.

The main limitations of this study were the small number of study participants and the limited amount of data from the sole interview conducted with each participant after a short period of intervention. These limitations weaken the credibility of the findings. However, more extensive data from several interviews with each participant during the studied process would probably have given a more varied and nuanced description including negative experiences like stress or frustration. The predominance of positive findings in the present study could be that the participants did not want to describe their initial negative feelings to a person they did not know (i.e., the researcher), or that they had forgotten some of their initial negative experiences by the end phase of their stay. A follow up of the participants’ experiences of adaptation in their own home environment, without EADL, could be of importance in a future study to better understand the long-term influences of their stay in the training apartment. Future studies should preferably use a longitudinal design to study both the experiences (qualitative data) and effects (quantitative data) of EADL-based intervention. For example, it would be interesting to study and compare the occupational adaptation process of clients participating in early and more extensive rehabilitation intervention in a training apartment, to training in their own home setting that is equipped with EADL.

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The present study shows that an aesthetically attractive training apartment equipped with EADL may contribute to a “taking off” for a future life of persons with acquired brain damage.

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References


