

Strategies for Solving Tasks by Blind

*Characteristics of Mental Images, thus
Strategies for handling Daily Tasks by
Blind Adults*



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Master's Thesis
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Abstract

The thesis is based on a research, which was held in Georgia in the autumn 2010. The research question is: what characterizes mental images, thus strategies for handling ADL by blind adults?

The thesis discusses various strategies used by blind adults to solve daily tasks. The study's main focuses are morning routine and personal hygiene. Three groups of blind adults and their use of mental images, thus strategies for solving daily tasks are compared to one another.

The results show, that congenitally blind persons use haptic mental imagery and their strategies are based on the haptic images. Whereas, newly blind persons use visual images and combine them with spatial images. However, adventitiously blind persons seem to be dealing with daily tasks by using both, haptic and spatial images in addition to the visual remembrance of objects and environment. Moreover, ones having had training in particular activities have better strategies for solving activities of daily living, than those without any training. Generally, all of the groups the most efficiently solve tasks, which naturally require touch. For example, describing texture of clothing and making bed. In contrast, shaving face, combing hair or brushing teeth seems more difficult for several of the participants, as one uses a mediator in such activities, e.g. hand does not necessarily touch face, hair or tooth paste in these activities. Hence, such tasks do not provide basis for having good haptic strategies for solving them. However, congenitally blind persons do not face such challenges, as they have been used to relying on touch since childhood. Similarly, adventitiously blind_ trained or haptically precued persons find strategies for handling activities of daily living.

The study further shows, that passage of years does not necessarily help late blind persons to adapt to blindness and acquire new skills for solving tasks, but training does.

Preface

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1 Introduction

1.1 Background

It is considered, that first three years are the most difficult ones for a person losing sight Monbeck (1972). There are several stages, that according to Holins (1989), every newly blinded person undergoes. Some of those are, as follows. Mourning: losing sight is a disaster, the sight-lost person is depressed and hopeless; second stage is isolation: nothing can make the person happy or sad. Everything is received emotionlessly; the third is shock: the person has a hope of regaining the sight, which often is wrong and slows down the process of recovery. Some people, who have some vision left, deny the loss; the next stage is, Depression: the person feels worthlessness and thinks that he or she is only a heavy, useless burden for the family or society. Length of stages may vary from person to person, due to one's personal traits, family members' and friends' attitudes doctor's approach towards the loss of sight and so on. Sometimes, family members of newly blinded person blame themselves for happening so, they recall their earlier actions, regret some of the things they have done and apologize to the person. Some start communicating with a blind person on a superficial level, others try to escape by ignoring the person or leaving them if married. Some become overprotective Bauman & Kropf (1979). Some blinded persons and their families postpone rehabilitation process as they wait for regaining sight, which is an unrealistic hope. Whereas, it is achievable to adjust to blindness so that the life becomes joyful and interesting Holins (1989). However, at a certain point, helplessness and dependence becomes tiring and person starts getting used to blindness. They begin doing things independently; try to accomplish things on their own.

Newly blinded persons often require new skills to support themselves. They need training to acquire additional knowledge and find new strategies of doing the same tasks as before Haymes, Johnston and Heyes (2002). Holins (1989) claims, that newly sight-lost person shall receive counseling in order to overcome depression, acquire new skills and find his or her place in the society. Therefore, the rehabilitation programs are of great importance. Nowadays, in many countries rehabilitation centers provide such service for newly blinded people. ***In this thesis, focus is placed on Activities of daily living (ADL).

Activities of daily living are the everyday, basic activities that most people must do as a necessity of living. They include:

- Personal hygiene
- Meal preparation

- Shopping
- Standard home maintenance activities

The Social Security Administration of USA (2000). Haymes (2002) divide Daily life activities into two major groups: instrumental and basic. Instrumental ADL covers activities, such as: reading, face recognition, etc. and basic or self-care activities include: personal hygiene, eating, dressing, ETC.

Human beings acquire most of ADL skills from early childhood Zimbardo (2000). Sometimes, after undergoing a serious sickness, patients have to relearn some of the skills or find new strategies for handling same tasks as before. For example, Liu and his colleagues conducted a research with people having had stroke. The research intervention lasted for three weeks, when patients were consistently receiving training in different ADL skills using mental imagery techniques. Their performance was measured before and after the training. Researchers helped patients to develop competence in using mental imagery as a learning tool. The research showed high and positive correlation between training using mental imagery and performance of daily living skills Liu, Chan, Lee, Hui-Chan (2004). Similar difficulties may be focused by a person developing a disability, for example, losing sight in adulthood. Total sight-loss or low vision can have a significant impact on a person's daily performance Haymes et al. (2002). Therefore, one may require relearning everyday skills or be in need of help to develop new strategies for handling ADL. With this in mind, what may characterize mental images, thus strategies for handling ADL when being newly blinded? The following thesis will indeed address this issue.

1.2 Personal Motivation for the Study

I myself am blind from two years of age and have been living in Georgia since birth. Therefore, the difficulties blind people face in that environment, are very obvious to me. However, I have had different opportunities to experience life of a blind person in developing countries. On the other hand, I have worked with raising awareness towards persons with disabilities, have attended a range of trainings about various special needs, among which blindness especially attracted my attention. Afterwards, I worked with school teachers, trained them in methodology of teaching children with special needs in inclusive setting. Thus I was always conscious of how my blind friends or I dealt with various activities and how my sighted friends and colleagues did them. I could see that there were some differences in how we managed things. I was realizing that we sometimes used different strategies for handling similar tasks, but my knowledge was not sufficient enough to explain everything.

After enrolment in the Master's program, I started to think more and more about similarities and differences in ways of living of blind and sighted people. Moreover, I realized that there was a difference between congenitally blind and newly blind persons handling same tasks. I started questioning myself, if there were activities, which were better manageable by newly or adventitiously blind people. My hypothesis was that there are affairs, especially when it comes to spatial tasks, which are done more effectively by adventitiously blind persons. I was basing this thought to an idea, that those, who lose sight in adulthood, have visual remembrance of environment, space, objects and so on. But there still were questions: Are they able to use mental images? Do they use them at all? If yes, how, when and how are they combined with touch? If not, what may be done for them to reactivate their visual knowledge and combine it with information perceived by other sense modalities? Maybe a rehabilitation program in Georgia could help them overcome depression and acquire new skills?

This way I ended up by having a broad field of interest which had to be narrowed down in order to apply a research for Master's thesis. While thinking and reading about blindness, I always bared in mind the situation of several friends' of mine. They lost sight in their twenties and are having hard time adjusting to blindness, finding out and relearning new strategies for handling everyday life independently. But before I was able to decide on the actual research question, spent some time in reading literature and finding out more about the topic.

1.3 Outline of the Thesis

This thesis is about characteristics of mental imagery, thus strategies for handling ADL by blind adults. It is written based on a research in Georgia and literature review. The thesis is divided into six chapters. Chapter one covers the background for the research.

In the second chapter one can read about current situation of blind people in Georgia and research-related information about the country.

Before proceeding to the fieldwork procedures and collected data, in the third chapter, reader will be able to look at the phenomenon from the same perspective, as the researcher. This chapter also highlights what types of research is done in the given and related fields, as well, as what is missing and which key words were used for literature search in online search engines. Some information about existing theories will also be given. However, the theories are explained and replicated more deeply in the discussion chapter (see "6 Discussion").

The fourth chapter deals with the research design, methodology, sampling procedures, administering interview guide, conducting interviews, reliability, validity and ethics.

The fifth chapter is devoted to the research findings, differences and similarities within the three groups of blind individuals. Procedures for analyzing and reporting the data will also be discussed here. The findings will be combined in topics according to the interview guide.

The sixth and the last chapter focuses on the main research findings and summarizes the issue of their compatibility with the existing theories and the results of previous research. This chapter also shows the limitations of the study, discusses possibilities for the future investigations and gives recommendations for improvement of the field.

Each chapter, apart from the introduction, starts with the chapter outline and ends with the summary of the key concepts or what is important for a reader to keep in mind, while reading the thesis.

2 Country Information

Due to the fact that the thesis is about blind people and their daily living, it is important to provide the reader with some country specific information. Because the rehabilitation programs highly vary from country to country and different cultures have unlike attitude towards persons with disabilities, I consider it to be important to describe the country of investigation. The research was held in Georgia.

2.1 Outline of the Chapter

This chapter provides information about Georgia. Subchapter 2.2 deals with the prevalence of blindness. 2.3 gives some recent facts about the country and its history. 2.4 provides information about the life of blind persons in Georgia. 2.5 describes the organizations and educational services offered to blind. 2.6 lists a few culturally specific details, which may be relevant to the thesis and finally, 2.7 is a short summary of the chapter.

2.2 Prevalence of Blindness in Georgia

There are 3500 blind and visually impaired members of Georgian Blind Union (GBU), Georgian Blind Union (2011). But they believe there are many more blind or visually impaired individuals in Georgia, who are not members of the union. It is difficult to say exactly how many they are, as there is no exact statistical information about this issue. When trying to obtain exact statistical information, I consulted WebPages of The Ministry of Labor, Health and Social affairs of Georgia, MOLHSA, The Social Service Agency SSA and Department of Statistics of Georgia GEOSTAT.

Since Georgia is still using the old, defectology-based classification of disability, the degrees of impairment are categorized in three groups. Here I will only explain the groups in terms of blindness. In the first group there are persons, who are totally blind or have very low vision, i.e. maximum of shape perception. The second group covers degrees between shape perception and being able to read magnified regular print. The third group unites visually impaired persons, who have vision, lower, than usual, but are able to function independently, without using technical devices.

Persons with I or II group disability receive monthly pension from the government SSA (2011) and they should be registered in the system of Social Service Agency, but when trying to get information from them, I found out that they do not have registered

differentiated groups of pension receiver persons with disabilities Social Service Agency (2010).

2.3 the Most Recent Facts

Difficulty with statistical information in Georgia started in 1990s. At that time Soviet Union fell apart and after 70 years, Georgia regained independence. There was collapsed political and economic system together with freedom. Soviet Union was organized so that all 15 countries in it were dependent on one another. For example, if one country was rich with any agricultural product or natural resources, another had processing factories for it. Thus most of the countries had trouble rebuilding own independent states. Especially because they no longer had stable economy. This was the case for Georgia as well. Statistical bureau was receiving very limited funds from the government and country's infrastructure was devastated. Such condition led to inaccurate statistical data. The country is still struggling with this.

2.4 The Life of Blind in Georgia

During Soviet era inclusion of persons with disabilities was not of great importance for communists. Therefore, most blind and visually impaired persons went to special schools, worked in separated factories especially organized for them and most of the, time were hidden from the society. Nobody could really see their needs or abilities. Even after Georgia's independence blind and visually impaired persons are viewed as worthless by large portion of the Georgian society. Thus the environment is not accessible for them, which again leads to limitations and segregation. This is a reversible process. When it is difficult to go out and get involved, many blind persons remain at home. The society again does not see them and does not know about them, therefore, nothing can be changed and so on.

Most of blind children still attend a special school for blind. Inclusive education has started in several public schools and there is a law saying, that children with special needs and their parents are allowed to choose between public and special schools. Moreover, schools are obliged to receive and accommodate any child with any kind of special needs. But the schools do not have sufficient budget for adapting the environment for them. Therefore, most of the blind pupils prefer to go to the special school. Parents even bring their children from the regions of Georgia, as there is only one school for blind children and it is in the capital_ Tbilisi. The school has boarding facilities; therefore, the children can stay there over night.

When planning the fieldwork, I thought, that it would be interesting to include how blind children are taught ADL. But unfortunately, there is neither a special guide for teaching ADL to blind children in Georgian, nor teachers have any curriculum for this. Mainly, older children help their younger pairs and the younger ones learn from their older friends. Alternatively, visually impaired teachers share their experience to the children and their parents, but this has a non-formal character.

However, the main difficulty comes in when a person loses sight in adulthood. Prejudice about worthlessness of blind people is so strong that newly blinded persons completely lose self-esteem. The family members also are not of great help to the newly blinded person. Nor they can see how to continue life and here is the role of rehabilitation centers. But they do not exist in Georgia. The only help blind person gets is from ophthalmologists or surgeons, who still base their approach on Vygotsky's "defectology theory". Defectology theory looks at a person with disability as anomalous and views disability as a defect The Great Soviet Encyclopedia (1979). This approach is based on a medical model, which considers persons with disabilities as patients, who need to be cured and while disabled, they are considered to be helpless. Family members often blame themselves, because it is considered that a sin in the family can have such consequences. They usually start looking for a reason of why the person lost sight and seek for treatment, even after they have been assured that one's blindness is permanent. Therefore, the stages of depression, which were described in the first chapter, may last longer, than usual.

Except for this, most newly sight-lost persons lose jobs, because employers are no longer willing to employ them. They are afraid that blind person will not be able to manage tasks like sighted. Nevertheless, they do not bother by adapting the work environment for a blind worker. They argue that this is an extra and most likely useless cost. Government neither provides any support or relief for an employer of a disabled person, nor is ready to employ them in the governmental sector. This way, many blind persons are dependent on their pension, which is 80 Georgian Lari SSA (2011) or approximately 250 Norwegian Crones. That is usually not sufficient for living and family members have to support them. Due to inaccessibility of the environment, most blind people live together with their nuclear families.

2.5 Organizations for Blind in Georgia

There are several non-governmental organizations working for blind persons in Georgia. The largest and oldest is The Georgian Blind Union, which has over 2500 members and covers the entire country. Some other organizations like Young Integration Center and

The Society of Blind also exist. But they are rather young and not well established yet. However, they provide various services for their members. The major educational programs are computer, English language and musical instrument courses. They do not provide any rehabilitation programs for newly blind individuals. Mobility training is not an issue there, as the environment will not allow a blind person to move around independently, even by using a device. However, The Blind Union has a monthly magazine, which is printed both, in Braille and regular print. It is published as audio and online versions as well.

There also is a settlement, where the majority of people are blind. There were quite a few building blocks built by The GBU during Soviet era. Thus many blind persons still live in those houses together with their families. The persons, who live in that community, have an easy access to one another and can empower each other. This is how mainly blind persons live in Georgia. However, I have been explaining a lot about the capital, but not about the regions. In the regions, there are even less services available. But on the other hand, blind persons are more included in their home communities there, as they get mixed up with them. While in Tbilisi they are more attached to the other blinds.

2.6 Cultural Specifics of Georgia

There were some culturally specific issues raised during the pilot study, which generally refers to Georgia, hence is relevant to the blind persons. One of the cultural characteristics I would like to discuss here is that house maintenance activities are supposed to be done by a woman in the family. Thus, for example, making a bed, washing clothes, cleaning, cooking are considered to be female business. Some man may sometimes help, but this is not very common.

Another matter, I would like to review, is more connected to people's financial condition. In Georgia it is very common that not married children live together with their parents. Sometimes, even after getting married, a couple settles in the husband's parent's house. This happens even more often, if a person is blind. Due to the inaccessibility of the environment, blind persons always require help. Thus, they remain in their parents' homes before getting married and this sometimes continues even after marriage.

I considered this information relevant and important for thesis, as there are several background questions in my interview guide. Since the answers may be somewhat surprising for the readers for the thesis, I considered explaining the situation in advance.

2.7 Summary

As Georgia was a part of the Soviet Union and regained its independence in 1990, there are several issues, which have had the influence of the Soviet era. Moreover, after the collapse of the Soviet Union, the political and socioeconomic systems were totally destroyed. This transformation era is still not quite finished for the country. For example, it is still very difficult to obtain exact statistical information about the prevalence of blindness.

Furthermore, the blind persons are rather alienated from the rest of the society. The blind children mainly go to the special school and there are no rehabilitation programs or institutions for late blind persons. Only training blind adults can receive, in terms of fulfilling their special needs, are: computer, English language and musical instruments. Independent mobility is not even a subject of discussion in Georgia. There are several organizations working for blind persons, but they are not being of much help.

In addition to this, there are several cultural factors, which have a negative influence on the inclusion of blind persons. Even the classification of disability is based on the Vygotsky's Defectology Theory. Because the majority of the Georgians do not get in touch with blind persons, they view them as helpless and worthless. Such attitude becomes painful for someone, who loses sight in adulthood. The lack of services, understanding and indifferent attitude makes the life of a blind person even more difficult.

3 Theoretical Framework

Although there is not much research done in the field of mental imagery and activities of daily living, before discussing the research question and fieldwork procedures, light will be thrown on some evidence from related literature and previous research.

3.1 Outline of the Chapter

This chapter creates a theoretical framework for the research. Two major theories are used together with previously conducted researches. Subchapters are distributed accordingly: 3.2 explains two different theories about the existing attitudes towards blindness. 3.2.1 describes the “lack of knowledge theory” and 3.2.2 deals with the “Symbolism Theory”. 3.3 explains how sensation and perception differ from one another. 3.4 describes various types of mental images. 3.5 deals with the discussion about what is missing in the previous research. 3.6 is a listing of key terms used for search of the related literature and the chapter is concluded by a brief summary_ 3.7.

3.2 Attitude towards Blindness

Vision is often considered to be a tool not only for seeing, but for influencing people and environment around. Many people understand vision as a main sense modality through which a lot of information is received. For example, Zimbardo (2000) argues that about two thirds of perceived information enters via eyes. See also Vygotsky (1982). Thus an average sighted person cannot think of him or herself being blind. That normally frightens them. They cannot imagine themselves managing number of activities without seeing. On the other hand, sighted people give out and receive a great deal of emotional information using vision. They can influence others, express violence, and send out other impulses. Hence, losing sight means losing power. See Holins (1989). Several theories explain attitudes towards blind persons. Some of them will be discussed here.

3.2.1 Lack of Knowledge Theory

According to the lack of knowledge theory it is considered that most sighted persons do not have sufficient, if any, knowledge about blind people. They look at them from their own perspective. Because it is difficult for them to imagine themselves blind, but still able to manage life independently, they feel pity for blind people. Sighted people usually view a blind person as generally unhappy and depressed. They do not see that together with the passage of time, blindness can be adjusted and a life of a person may become

very usual. Moreover, they don't see that congenitally blind individuals are not depressed and do not mourn because of their blindness. They simply know that there are people who can see and it may be more convenient to be able to see, but they do not worry about it. Adventitiously blind persons forget about their stresses and think of the time when they could see, like every sighted individual recalls the past.

When sighted people see a blind person doing something independently, they attribute this to an extraordinary capacity or heightened sensitivity of a blind person (Monbeck 1973). Such attitude if strong can be referred to as a prejudice_ a strongly held, not evidence-based attitude (Holins (1989). Prejudices are very hard to change.

Furthermore, due to lack of knowledge, sighted part of society often feel fear or anxiety when meeting a blind person, because they are confused. At first it is difficult for them to interact with a blind person, only feeling that comes to their mind is feeling of pity and sympathy. Which unconsciously is caused by fear of one day becoming blind? Lack of knowledge about blind persons and thinking of blindness evokes fear alike of death in many sighted people (Monbek (1973).

3.2.2 Symbolism Theory of Attitudes

Another theory that explains some of the prejudices is a symbolism theory. Symbolists view everything as symbols of something. In this case, eye is viewed a symbol of a window to a person's spirit. Thus lacking of vision is considered being a barrier between one's spirit and outer world. Blindness is understood as a consequence of a sin. Whereas, blindness itself means losing power of control. As people normally consider eyes being tools of influence (Bauman et al., 1979). However, this is no longer used in many countries, but is still valid for Georgia. This theory explains sighted people being afraid of blind folks. They again feel anxiety, because losing eyes mean losing a powerful instrument.

Thus, if lack of knowledge theory explains the mild fear when meeting a blind person, symbolism theory explains stronger manifestations of attitudes. There are many more theories explaining attitudes towards blind persons, but as this is not the purpose of the thesis, we will leave it there. Given examples illustrate the barriers in having blind persons included in the society. They also tell us, how little is understood about blindness and this is where the interest of the researcher lies.

3.3 Sensation and Perception of blind

Vision and touch are two different sense modalities, thus, they may perceive information in a different pace. Never-the-less, it may be difficult to shift from one sense modality to another. Holins (1989) argues that regaining vision may be as disturbing, as losing it. Newly sight lost people cannot recognize many things, but it does not mean that blind people do not have spatial sensitivity Lederman and Klatzky (1987). This only manifests, that sense modalities differ. For example, vision can examine whole object at once, while touch examines only smaller parts at a time. Also reading by touch may be slower, than by vision. The quality of information perceived by touch or vision does not differ. But blind persons cannot examine far away objects Holins (1989). Yet they can learn about visually perceptible things, but not by looking at them.

In earlier days, it was considered that someone, who was experiencing impairment of a sense modality, had developed heightened sensitivity in other modalities Vygotsky (1929). For example, if one was blind, would have extra sharp sense of hearing, smell and touch. Nowadays research proves that this was not correct and sharpening comes together with practice. In fact, they are not sharper than normal, but blind persons pay more attention to information coming through them. Every average person can be able to use senses other than vision as effectively as blind ones do, when trained so Holins (1989). Heller (1987) argues, that Blind people use the sense of touch more and may not be as limited as sighted persons, when obliged to rely on touch. His research also shows that sighted people may be disoriented by the number of tactual tasks. But heller stands against the idea that blind people have improved haptic abilities, because they had to compensate for the loss of vision. He rather claims that blind people may have increased practice with use of other sensory modalities to percept stimuli Heller (1994). Sighted people have increased familiarity with visual pictures and this explains their high performance on the research of two-dimensional object recognition Heller (1989). Millar and Al-Attar (2005) found that adventitiously blind subjects showed the best results on raised line drawing recognition experiment. Their investigation shows that subjects, who have some vision left, could perform task significantly better, than blind subjects. This finding manifests, that vision improves sense of touch, when adding relevant cues to it. Millar and Al-Attar did their research on subjects with some vision, light projection and total blindness. Where persons having light projection did no better, than totally blind ones. But this is a research about recognition of two dimensional objects. Where is the actual life here? How do blind persons use their strategies for solving tasks?

For their research Australian researchers developed a new highly valid and reliable test: the Melbourne Low Vision ADL Index (MLVAI). They focused on relationship between clinical measures of vision and performance of ADL. Complex instrumental ADL items: reading, writing and using the telephone, as well, as basic ADL items: eating and dressing were examined. In comparison of instrumental and basic ADL, the results showed clear difference in correlation to vision measures. Instrumental activities were

highly correlated to the degree of vision, while basic daily living activities showed significantly low correlation Haymes et al. (2002).

Lederman and Klatzky (1987) have suggested that two-dimensional drawings are more difficult to recognize and interpret, as they lack other substance related cues, such as: texture, mass, shape. Drawings lack these characteristics and congenitally blind persons, who have never been able to see, have difficulties recognizing haptically transformed visual stimuli. Ability to translate tactile-kinesthetic impressions into visual images gives significantly better scores in all of the tests of form perception except recognition Heller (2003).

3.4 Mental Imagery in Blind

One proof that late blind persons remember visual images is, that they report having imagery dreams Sheperd (1978. Ed. In Holins 1989). Whereas, congenitally blind people have non-visual dreams. But it is not true to say, that congenitally blind persons do not have mental imagery. Their imagery is more haptic. An average sighted person, when asked to think of a not present object, recalls a pictorial image of an object and looks at it using mind eye, Kosslyn (1980). Many adventitiously blind persons report that decades after losing sight, they can recall mental images of seen objects. They can even form mental images of things they have never seen to some degree, but they have touched it or examined, or others have described it. However, mental images decay as person picks up more and more information through auditory and haptic channels Holins (1985). We can be sure that congenitally blind persons do not have visual mental images. But they can have haptic imagery, as hearing provides very little information about object's shape, it is perceived by touch. Although smell, location, size, etc, are part of imagery Kosslyn (1980). Congenitally blind persons when asked to recall objects, they tell that objects in mind have clear shape, as if they were present. When imagining objects, they are not explicitly haptic, congenitally blind person does not feel the object or touch it, when thinking about it, whereas, adventitiously blind or sighted individuals almost see the object. Congenitally blind persons remember the object's location, size, shape, etc. Psychologists found out that imagery not only helps people to recall items, but help them to plan activities and do them. Sheperd (1978). Haptic mental images cannot be manipulated as quickly as visual ones can Heller (2000).

There were several groups of blind and sighted persons in the experiment of pictorial and stereoplastic imagery see Holins (1985). Blindfolded sighted, congenitally blind and adventitiously blind participants were asked to recognize various haptic images. The experiment showed that visual imagery decays together with the passage of time. In addition, visual experience of participants mattered in their scores. Adventitiously blind and blindfolded sighted did better on pictorial imagery, while congenitally blind

individuals scored higher on the stereoplastic imagery test. “The results are consistent with the idea that mental imagery becomes more visual in character as visual experience accrues, but remains static after the loss of sight.” Holins (1985, P.165). The nature of mental imagery in blind adults is influenced by the nature of their accumulated perceptual experience. It is a result of the different ways in which the visual system and the haptic system normally acquire information Holins (2004).

Graven (2005) found, that vision and touch link can improve object recognition and furthermore, decrease the redundancy of shape cues. However, she found, that this link disappears soon after total loss of sight. Graven (2003) argues, that reactivation of vision-touch link, when perceiving shape, e.g. modality irrelevant cue, seems to improve the proficiency in recognizing tactile representations of familiar objects. ” The present results suggest that both visual and tactual preliminary training influence the proficiency not only in recognizing tactile representations of familiar objects, but also in mental (unfamiliar shape) manipulation, and thus the recognition of familiar shapes.” Graven (2005, P.68).

Another research by Heller (2003) further shows that late blind subjects do better in feeling raised line drawings than congenitally, newly blind or sighted. They remember how things look and combine it with haptic information. However, high performance in a spatial task depends on perceptual skills, and these skills often improve with familiarity and practice. Some late blind individuals, in the research, reported using visual images, but some did not. Of course, there is no reason to believe that imagery is specifically visual.

3.5 What is missing in the previous research?

The reader would have noted that a lot of research is done in the field of recognition, whether or not blind people have mental images and how they deal with activities of daily living. But I would like to criticize some of them, as they have often used blindfolded sighted participants instead of newly blind, which may have influenced the results. As blindfolded sighted persons have not undergone stress caused by the loss of vision and furthermore, they have become “blinded” right before the experiment. Moreover, scientists have not focused much on how blind people use mental images in their daily lives. Neither have looked at what strategies newly blind persons use to deal with everyday life, when it comes to mental imagery and how congenitally blind, newly blind and adventitiously blind individuals are different or similar, in using mentally determined strategies for handling daily life activities. This thesis is an investigation about this matter.

3.6 Key Words Used for Literature Search

Since the field of investigation is not widely researched, there is not a lot of literature available for preparatory review. Most information is available about elderly people and relearning skills after serious illnesses. On the other hand, there is a lot of literature about attitudes towards blindness. One can find material about visual mental imagery and so on. To make this argument clearer for the reader, I would like to provide the words and phrases; I used to search in online scientific databases and search engines. Search engines used were:

<http://www.google.com>

<http://www.google.no>

<http://www.google.ru>

<http://www.google.no/#hl=no&source=hp&biw=968&bih=564&q=Scholar&aq=f&aqi=g10&aql=&oq=&fp=af2c3521476bfd8c>

<http://www.sciencedirect.com/>

<http://www.ub.uio.no/#globalnav>

I was sometimes putting time limits, where possible, usually searched articles published since 1980 until 2011. In other cases, when I needed older information, for example, Vygotsky's work, I did not specify the time.

Activities of daily living;

Daily life activities,

Daily living activities;

Haptic processing;

Lederman and Klatzky;

Mental imagery in blind adults;

Mental imagery of adventitiously blind;

Mental imagery of congenitally blind;

Mental imagery of newly blind;

Mental images;

Object and pattern perception;

Psychological condition of newly blinded;

Rehabilitation;

Rehabilitation process;

Relearning of acquired ADL skills;

Retrieval strategies;

Strategies for handling daily life activities;

Training in ADL;

Using mental imagery in activities of daily living;

3.7 Summary

This chapter provided a basis for the present study. The main theories used are the lack of knowledge and symbolist theories. They rather explain the attitudes towards blindness, than the blind persons' activities, but are closely related to the ongoing situation of the country, where the research took place. Thus, they explain the authenticity of the research. Furthermore, the previous researches were reviewed. Most of the research deals with recognition of familiar or unfamiliar objects. Mainly, two dimensional ones. Whereby, there is a lack of information about how blind people solve certain tasks. However, the researches provide basis for the discussion of the following study. It is important to keep in mind, that touch, as a sense modality is slower, than vision, but information quality does not depend on a sense modality. Though, precuing improves recognition. Thus, adding visual cues and/or precuing improves recognition of familiar objects.

4 Study design And Methodological Framework

4.1 Outline of the Chapter

This chapter deals with methodological framework for the research. First, the research question is formulated, as 2.2, afterwards; the major terms in the research question are defined operationally, as well, as lexically, 2.3. 2.4 is a description and justification of the chosen study design. 2.5 gives information about sampling procedures and contacting respondents. 2.6 explains the used method, describes interview guide and gives information about fieldwork preparation. 2.7 is devoted to the pilot study and data collection. 2.8 Covers issues about validity, reliability and ethics. Finally, the chapter will be summed up by a short summary, 2.9.

4.2 Research question

The research question of the study is:

What characterizes mental images, thus strategies for handling ADL by blind adults?

4.3 Definition of Key Terms

In order to make the research findings well comprehensible for the readers of the thesis, some essential terms should be defined.

Blindness: various sources use this term differently. For example, International Classification of Function, Disability and Health (ICF) (2005) provides measurement in terms of both, medical and social perspective, where medical part measures degree of vision: visual field and acuity, e.g. How much a person can see and social measurement gives information about to what degree existing sight hinders the social functioning of the person ICD10 (2007).

From the social perspective, loss of sight can be determined accordingly: legal and total blindness. Someone is legally blind, when has visual impairment, e.g. has difficulties reading normal print and/or orientation and mobility. While total blindness is referred to a condition, when a person can't see at all or is only able to see light ICD10 (2007).

However, there are other degrees of vision loss, for example, total blindness: no vision at

all; light perception: a person sees light, when looking to the direction, where it comes from; light projection: one can detect where the light is coming from, even when not looking at the window; color perception: being able to detect colors; shape perception: one can see shadows and contours, but not features of people and objects; visual impairment: person has vision less, than normal, but can see and detect objects at a certain distance World Health Organization (2000).

According to the length of sight-loss, there are three groups of blind people: Congenitally blind_ sightless from birth or within the first three years of life; newly/recently blind_ sight-lost for less, than three years; adventitiously blind/late blind_ persons, who lost sight in adulthood and more, than ten years ago. To make this connected to the thesis, congenitally blind people have never seen, and it is assumed, they cannot think about the world in terms of visual representations. Adventitiously blind (late blind) people have seen, but lost their sight at some time in their lives. Presumably, these individuals have been influenced by their past visual experiences. In addition to the effects of visual learning, late blind may remember how things look and use visual imagery combined with tactual information, when they are ought to complete daily tasks. Newly blinded have the least experience of being blind, thus are least used to using tactual information, but they have visual mental imagery of everything. In this thesis, word “blind” will be used to refer to persons, who are totally blind, have light perception or light projection. Others, with low vision will be called, visually impaired, while persons with normal vision will be mentioned, as sighted.

To remind the reader what ADL means, the definition will be briefly repeated. Activities of daily life “ADL” are mainly split into two major groups: instrumental and basic see Haymes et.al. (2002). Where instrumental ADL covers reading, face recognition and so on, hence basic ADL consists of: self-caring, bathing, dressing, eating, shopping, house maintenance activities see Haymes et al. (2002), Social Security Administration of USA (2000). In the following thesis, ADL in focus is personal hygiene, specifically, morning activities, including: washing face and hands, combing hair, bathing, recognizing and matching clothes to one another, dressing, making bed.

Mental imagery: is *quasi-perceptual experience*; it resembles perceptual experience, but occurs in the absence of the appropriate external stimuli. Mental images are always images *of* something and thereby function as a form of mental representation Stanford Encyclopedia of Philosophy “SEP” (2010). According to SEP, There seem to be fewer ways to talk about imagery in other sensory modalities, but it occurs. The experiencing of imagery in any sensory mode is often referred to as “imagining” (the appearance, feel, smell, sound, or flavor of something). In this thesis we will discuss visual and haptic mental images. Where visual image is a representation of object, which was seen and haptic image, is a representation of an object that was touched.

Strategy: It is important to define strategy, as strategies for handling daily life activities will be widely discussed in the research findings. As it is given in Merriam-Webster Dictionary, strategy is: The skill of making or carrying out plans to achieve a goal; a careful plan or method for achieving a particular goal. We will look at the strategies as plans and tools to achieve goals of daily living.

4.4 Study Design

The study is qualitative. The data was gathered qualitatively, using semi structured interviews and data was analyzed qualitatively, using method of cross analysis. Qualitative design was chosen due to the fact, that it provides in depth perspective of a field of investigation, see Gall, Gall and Borg (2007). Qualitative, in other words, phenomenological approach provided the researcher with an opportunity to have a closer look to the participants' lives and views of their daily living. Furthermore, qualitative design gives a researcher an opportunity to make analytic inductions based on the participants' views (Gall et al., 2007). The study has a descriptive character. It describes characteristics of mental images, thus strategies used by blind adults when handling activities of daily living. Qualitative design in contrast to quantitative, does not quantify the results, but provides deep, phenomenological explanations of the field of investigation (Gall et al., 2007). It provides framework for analyzing verbal data. The study is descriptive and qualitative research design enabled the researcher to receive information about participants' own perspectives, as well, as was able to reflect upon their views, while analyzing the data. This was achieved regarded the fact, that the qualitative study does not need to have a lot of participants, therefore, the researcher was able to conduct all the interviews by herself.

4.5 Sampling

Purposeful sampling procedure was chosen for the study. The main idea of this type of sampling is to provide researcher with the cases, who will give rich information concerning the purpose of the study (Gall et al. 2007). Purposeful sampling has many subcategories, which may be used for sampling to help researchers to have an appropriate sample Maxwell (2005). Criterion sampling method was selected for this study. The main criteria were: age, length of loss of sight and degree of vision. Gender balance was desirable, but not necessary. However, the study had 7 respondents, out of which, 4 were male and 3 were female. One more respondent was interviewed for pilot study purposes. In terms of the degree of vision, only persons, who were either totally blind, had light perception or light projection were looked for. Another two criteria were the length of sight loss and age, according to which, three groups were derived. They were:

congenitally blind_ blind from birth or within the first three years of life, who now are in their twenties or older; adventitiously blind_ those, who lost sight after their twenties and have lost it at least ten years ago; newly blind_ persons, who lost sight after twenty years of age and have been blind maximum for three years at the time of interview. The maximum age limit was not predefined. Most of the participants ended up being totally blind, even though, ones with light perception or light projection could be included. There were two participants, who had light projection for some time after losing vision, but are totally blind now.

4.5.1 Procedures for Selecting the Participants

There are several organizations working for blind and visually impaired citizens in Georgia. I contacted two of them and asked for help. They are: Young Integration Centre of Georgia “YIC” and The Georgian Blind Union “GBU”. In GBU I contacted the #2 branch of Tbilisi and the magazine for blind “Sinatle”. Because the research was conducted only in the capital of Georgia and GBU covers the whole country, I did not take contact to the head quarter of it, but went directly to the branches of my interest. The involvement of the magazine may be surprising for the reader and I should reflect upon this. The persons working in the magazine have information about blind persons, as they prepare articles about lives of blind persons in Georgia. Moreover, “Sinatle” is a subquarter of the GBU.

Letters of request for help were sent to all of the above mentioned organizations. They included information about criterions for desired sample. The research question, goals, data collection procedures, intended use of data and rights of participants were explained thoroughly. The organizations contacted the future participants and a list of possible informants was given to me. The list included: names, telephone numbers and addresses of willing future participants. However, I ended up having contact information of about thirty persons. Afterwards, I called the people on the list and double checked the information we had of one another. Thus, made appointments for interviews.

Unfortunately, not all of the listed persons fitted in the predefined criterions, thus some of them were only thanked for their good will. The letter, which was sent to YIC and GBU are attached in appendices together with the letter of consent and interview guide. The documents are both, in English and Georgian. The list of participants is omitted to ensure the confidentiality of the respondents.

4.5.2 Introduction of Participants

In total eight blind persons were interviewed. Two were used for the pilot study. However, an interview of one pilot study participant was analyzed together with the rest of the participants. Only one interview was used to improve the interview guide. The participant for the pilot study had lost sight five years ago and had shape perception, which did not exactly fit the criteria for sampling. However, he could be used for piloting. Out of the seven participants, 4 were male and 3 were female. They will be referred by randomly assigned Latin letters to ensure confidentiality. The respondents were recruited so, that they made three groups according to the length of vision loss. In the group of congenitally blind, there were two participants, Mr. D and Ms. J. The male participant (58 years old) had lost sight at the age of two, but had light perception until the age of twenty-nine. The female, (37 years old), lost sight at 1.5 years of age. Both of them are totally blind. In the next group of adventitiously blind, there were three participants. One respondent, Mr. G, has lost sight twelve years ago, is 39 years old and is totally blind, but he had light perception for two years after sight loss, e.g. is totally blind for ten years now. There was interviewed one more male respondent, Mr. M, who has lost sight twelve years ago. He is 35 years old and is totally blind as well. The last adventitiously blind respondent, Mrs. K, was 47 years old. She has light perception and became blind 10 years ago. There were two newly blind interviewees. Mr. Z is 26 years old and has lost sight two years ago. He is totally blind. The last participant was also newly blind. Ms. N is 23 years old. She is also totally blind. Only congenitally blind participant, Ms. J, had genetically spread disability. Mrs. K, Mrs. N, Mr. M and Mr. Z lost sight rather suddenly, due to accidents. Mr. G has diabetes, but his loss of vision was quite sudden, over half a year. Finally, Mr. D also lost sight at once, but the cause is not clear.

4.6 Method of the Study and Preparation for the Fieldwork

4.6.1 The Used Method

Interview and observation are mainly used methods in qualitative research design (Gall et al. 2007). There are two major types of interviews_ unstructured and semi structured, that can be administered for qualitative data collection Maxwell (2005). The most suitable method of data collection for the study was interview. However, as the participants are experts of the field and their own situation, a lot of information could be gathered by using unstructured interviews. But due to the nature of the thesis and time limits, the

topic was narrowed down so, that it would be possible to meet the deadlines. Therefore, semi structured interviews were more appropriate. This method provided the researcher with deep knowledge about the topic of study. Topics and questions could be slightly varied from participant to participant to ensure a nice flow of the interview, to make participants feel comfortable, to establish a friendly, meaningful and open relationship between the respondents and the researcher. As the researcher was the one interviewing the respondents, she was able to write memos after interviewing. Also some comments were made during the interviews. That helped the researcher to have closer look to and deeper understanding of the phenomenon. The researcher's perspectives were analyzed together with the interviews and will be summarized in the results' chapter.

4.6.2 Developing the Interview Guide

The interview guide was developed by the researcher, using existing literature about ADL, mental imagery and blind adults. The researcher tried to observe her own morning routines In order to make the interview guide more efficient and to include practical questions about respondents' morning routines. The questions were in a way divided into two parts. Some of the questions were closed, i.e. had multiple choices. Those mainly were background questions, asking about, for example, gender, remaining vision, length of sight loss, members in the family, etc. There were 11 closed and 6 open ended questions. The open ended questions covered topics, such as: washing face and hands, brushing teeth, selecting and matching clothes to one another, getting dressed, combing hair, making bed. The questions were formulated so, that information about used strategies and types of mental imagery could be obtained. The interview guide was piloted, procedures of which will be discussed below, in the paragraph 2.7.1. As a weakness of the interview guide may be considered the fact, that it was first written in English and then translated into Georgian by the investigator. Since the researcher is not a language specialist, some inaccuracies could have occurred. However, this was solved by the help of the pilot study, (see paragraph 2.7.1). Readers can find the interview guide both, in English and Georgian in the Appendix 1A and 1B.

4.7 Pilot Study and Data Collection

4.7.1 Pilot study

Two respondents were interviewed for a pilot study. Information given by one of them was later analyzed together with main data collection participants, as there was no change

made to the interview guide afterwards. Only the first participant of the pilot study remained as a pilot respondent and the data was not analyzed for the final report. His answers were mainly used to improve the interview guide. One important factor about the pilot study should be underlined here. As the researcher is a female, there was a possibility, that the questions would be biased. Because the study is about personal hygiene and morning routines, there could be some differences in women's and men's routines. This was solved by having a male pilot respondent. The respondent was also asked some additional questions, in order to receive feedback about the structure and clarity of the interview guide. His answers were transcribed and checked if the questions in the interview guide could obtain information, corresponding the research question. Some changes were made after the transcription. Several of the questions were rephrased and some words were replaced with simpler words, which are of everyday use. This was especially important, since the interview guide was written in English and then translated into Georgian.

4.7.2 Data Collection

The interviews took place in the homes of the participants. This was arranged so, due to the inaccessible environment in Georgia. E.G. if the respondents were asked to come to any place for interviewing, they would require a guide. However, each of them was asked where they preferred to be interviewed. The choices were: respondent's home, researcher's home and the GBU. All (seven) of them chose their homes. The interviews lasted for approximately, 45 to 60 minutes. The respondents were asked to answer the questions freely and include all information, that they thought, could be important for the interviewer. The interviewer tried to establish a positive, friendly environment and gave verbal and paralinguistic encouragements to the respondents. The interviews started with simple background questions and were ended by "would you like to add anything to what we have already discussed?" or "Is there anything else, you would like to mention before we finish up our interview?"

In the main phase of the interview, the participants were asked to describe: how they deal with one or the other activity in their morning routines and what they pay special attention to. They were also asked to explain, what they receive help at, what seems the easiest or the most difficult for them and why, considering personal hygiene or morning activities.

As the interviewer is one planning the study as well, it enabled the interview process to be more flexible and supplementary questions could be asked, when needed. For the reason that the interviews had to do with respondents' lives, there was a lot, they wished to share. Thus, supplementary questions or prompting phrases were used to get the

respondents answer questions, regarding the study goals. The prompts differed from participant to participant; they varied according to a particular situation.

The data was typed up on a laptop and saved there until the analysis was finished. The directly identifiable data, such as, name, personal security number, etc., was not stored at all. A password was set to the laptop in order to ensure the safety of the data and confidentiality of the participants.

The interviewees had been promised that they will receive a final report of the results by the end of June 2011. They will be provided with the complete thesis if wanted. But as the thesis is going to be only in English and the interviewees, apart from two of them, do not speak English, we have agreed on getting the report. The two English-speaking participants will be able to read the full thesis. Electronic version of it will be made available for them, as promised.

4.8 Validity, Reliability and Ethics

“Educational research is a very human process and, therefore, is prone to error and bias” (Gall et al., 2007 P.11). Thus, this research has faced some reliability and validity issues, which were tried to be handled in a way, that it would not have influenced the results. They will be discussed below together with ethical challenges, which were not too many in this case.

4.8.1 Validity

Researchers claim, that too many validity threats may influence the results of the study Maxwell (2005). Several factors may have had effected the findings of the research. Maxwell (2005) further argues that “qualitative researchers generally deal with validity threats as particular events or processes that could lead to invalid conclusions”, (p.105). The validity issues were raised while planning, conducting and analyzing the data. In this paragraph, the raised threats and their solutions will be discussed.

Maxwell (1992) describes five types of validities: Descriptive validity, interpretive validity, theoretical validity, generalizability and evaluative validity. Some of them are crucial for this particular study, therefore, they are addressed here. Descriptive validity could be of an issue for the study, but all the terms used were explained as clearly, as possible, the participants, as well, as the readers of this thesis, had exact information about what was going on. Never-the-less, the participant’s answers were transcribed very

precisely, tone and pitch of their voice was noted during the interviews. This information was used in the analysis.

The issue of interpretive validity was also taken into consideration during the investigation process. Since the research is qualitative and there were open ended questions used for the interviews, all the answers were typed up word by word. Afterwards, the interviews were read back to the participants and all the misunderstandings were corrected right away. In the analysis and presentation of the results, some quotations are used to justify the findings. Furthermore, as the research has descriptive character, much interpretations are not needed in the presentation of the results. However, where needed, previous researches and theories are used for comparison.

Theoretical validity was dealt by carefully selecting theories to use for the discussion part of the thesis. The theories were scrupulously studied before starting the investigation and were introduced in the first chapter of the thesis.

Another issue I would like to address is generalizability of the findings. Because the study was qualitative, external generalizability is not a very crucial part of the research. However, the research findings may well be generalized to the other countries and settings, as the research question does not include any site-related issues. The topic is more general and is not connected to any particular place or time. On the other hand, the study did not have many participants, which may be criticized in terms of validity, but qualitative study does not put much pressure on the quantity, but the quality and depth of the findings (Gall et al., 2007).

The last validity issue, I would like to discuss, was the language barrier. The interview guide was first written in English, as it was supposed to be proven by the project advisor and Norwegian Social Science Data Service (see 2.8.1). The interview guide was translated into Georgian and some of the phrases could not be overtaken directly. Thus, closest possibilities were used. However, this issue was solved by having the pilot study. Readers can find the interview guide both, in English and Georgian in the appendices.

4.8.2 Reliability

I would like to point out two major reliability issues. Since this research was planned, conducted and analyzed by the same person, the researcher's bias and reactivity or in other words, researcher's influence on the participants could not be avoided, however, it was tried to be minimized. The reactivity was opposed by so called, respondents' validation. The respondents were asked questions to ensure correct understanding of their ideas. If there was anything unclear, participants were requested to explain or describe the case more thoroughly. In addition, the interviews were held in the participants'

homes, thus, they were more familiar to the setting, than the researcher. Non-the-less, the interview was a combination of close and open ended questions, which ensured the quality of the gathered data.

The researcher's bias may be argued as being the most difficult challenge for this particular research. This is caused by the fact, that the researcher has personal relationship and very close contact to the field of investigation. But during the process of planning, conducting and analyzing the data, professional advice was received and the investigator herself tried to step back and look at the phenomenon from a stranger's viewpoint. Also the data was analyzed very accurately and accurate transcriptions provided a strong basis for positive validation.

4.8.3 Ethical Considerations

The research was not very ethically concerning, yet some ethical issues were raised. One of the concerns was participants' confidentiality. First, when I contacted the two organizations and asked for help for recruiting respondents, I made sure, that I would not be involved in the selection of future participants. Thus, provided GBU and YIC with all necessary information in advance, including letter of request for research participants and informed consent. Both letters included information about the research question, goals and use of the results. Also the letters contained a paragraph about the length and type of the interviews. The possible participants were ensured of confidentiality via the letter of consent. No personal data was collected and/or will be used while reporting the results. The only information, that may be considered as personal, was interviewees' degree of vision and period, they have been blind. However, such data is handled in a way, that readers will not be able to identify study informants, even if they know them in person. This is achieved by slight changes in the background information. Moreover, the respondents are referred by randomly assigned Latin letters in the presentation and discussion of the results. Never-the-less, they had the right to withdraw from the research at any time before, during or after interview, until the data analysis had started. The planned date for beginning of analysis was the first of January and the fieldwork took place in December. The participants of the study were asked to sign the letter of consent before the interviews.

Getting Permission for the Fieldwork

According to the new regulations of 2010, regardless where the research is going to take place, all students in Norwegian higher educational institutions are required to obtain a permission for the fieldwork from The Norwegian Social Science Data Service “NSD”, NSD (2010). (For more information, please, visit the webpage of NSD at:

<http://www.nsd.no>).

Thus after completing the interview guide, preparing a letter of consent and a letter of request for participants, (see Appendices 1A, 2A, 3A), an application was filled in and sent to NSD, (see the Appendix 4A), together with the attachments, for approval. The application included precise information about: researcher’s and project advisor’s background and affiliations; procedures for recruiting of the participants; rights and obligations of participants and investigator; ethical issues; confidentiality; recording, storing and use of collected personal and non-personal data; data collection procedures; analysis and final report of results. As the sampling procedures, preparing interview guide, data collection, ethical considerations, analysis and final report are described in the relevant subchapters, only some of the given information will be reviewed here. The completed application form can also be found in the Appendix 4A.

NSD took about six weeks to reply to my application and a letter of approval was sent to me. However, there was misunderstanding of recording and storing the collected data. It was not very clear how they required the data to be recorded and stored. A question about this issue was sent to them, explaining how the data would be handled. It was planned, that I would use an audio recorder and transcribe the data to the computer after each interview. I waited until the beginning of December and since they had not replied, decided not to use the tape-recorder, but type up exactly what the respondents would tell me. This was caused by the fact, that the thesis had a deadline and I was supposed to return to Norway at the beginning of January to complete the degree. However, this was handled in a proper way. The typed material was read back to the participants to make sure, that everything was understood correctly. A few misunderstandings were discovered, which were corrected at the very moment.

(All the letters received from NSD can be found in the Appendix 4). They are given in the original language, which in most cases is Norwegian. Only the application, which was sent to them by the researcher, is combined, Meaning, that the questions are in Norwegian, but answers are filled in English. This was decided in cooperation with NSD in advance.

4.9 Summary

Before proceeding to the results, key issues from this chapter will be summarized. The research question of the study was: What characterizes mental images, thus strategies for handling ADL by blind adults?

In this thesis, word “blind” will be used to refer to persons, who are totally blind, have light perception or light projection. ADL in focus is personal hygiene, specifically, morning activities, including: washing face and hands, combing hair, bathing, recognizing and matching clothes to one another, dressing, making bed. Visual and haptic mental images are essential terms in this study. Visual image is a representation of object, which was seen and haptic image, is a representation of an object that was touched. It is important for the reader to keep in mind how “strategy” is used in this thesis. We will look at the strategies as plans and tools to achieve goals of daily living.

The study design is qualitative, I.E. qualitative methods were used throughout the planning, conducting, analyzing and reporting the data. The study has a descriptive character, thus, much interpretations are not made in the end. To recruit the participants, method of purposeful criterion sampling was used. The main criterions were: age, length of loss of sight and degree of vision. The study had seven respondents. All of them were adults, had light perception or were totally blind. Three participants of the research were female and four were male. There were two participants, who were congenitally blind, two were newly blind and three were adventitiously blind. They were recruited by the help of The Georgian Blind Union and Young Integration Centre of Georgia. The letters were sent to them explaining the goals and needs of the research, according to which, the future participants were selected. After receiving the list of willing participants, including their contact information, the researcher contacted them, double-checked if they really were suited for the research and appointed times for interviews. Semi structured interviews were used for collecting the data. The interview consisted of both closed and open questions, which ensured the correctness and deepness of given information. Nevertheless, closed questions helped the participants to open up and open ended questions provided the research with thick information. Before collecting the data, pilot study was conducted with one male respondent. This ensured the validity of the interview guide and improved questions. As the interview was written in English and the data was collected in Georgian, the interview guide was translated in advance. The pilot study helped the researcher to make questions clearer and more practical. The interviews were conducted in the respondents' homes, considering their desire. The data was typed up on a laptop and saved there until the analysis was finished. The directly identifiable data, such as, name, personal security number, etc., was not stored at all. A password was set to the laptop, in order to ensure the safety of the data and confidentiality of the participants.

However, the study may have had been facing some validity and reliability issues, which were solved by accurate and careful attitude towards the whole process and research

participants. The researcher's perspectives are only used, when justified by the participants' views. Ethical concerns were also solved by being very honest towards the gatekeeper organizations, research participants and the readers of the thesis. Participants' confidentiality was ensured from the beginning and they were well informed about the study before the interviews took place. The ethical issues were reported to The Norwegian Social Science Data Service, who gave permission for the study.

5 Presentation of the Results

5.1 Outline of the Chapter

This chapter deals with the results of the study. The main findings will be presented and important answers will be quoted, as translated from Georgian into English. The subchapters will be distributed in the following order. 3.2 describes the method used for analyzing and presenting the data. 3.3 is actual presentation of the results. It is divided into six subchapters, as six major topics were derived from the interviews. The final paragraph of the chapter, 3.4 summarizes the most important findings and prepares basis for the discussion.

5.2 Method Used for Presenting the Data

Qualitative research design was followed from the beginning to the end of the fieldwork. Therefore, method of qualitative analyzing was chosen. Cross analysis seemed to be the most appropriate method for the given type of research. This method provided an opportunity to describe what was said by the participants of the research, which similarities and differences were found in their answers and how certain topics relate to one another. In cross analysis, it is not important to mention, who said what, but the actual information regarding the research question Maxwell (2005). Thus, the respondents will remain confidential. Cross analysis also enables readers to understand and follow the findings better, as they are shown in relationship to one another, not one by one.

Topics for analysis were derived according to the interview guide. Several questions were combined under each topic and answers were split into categories, according to the topics. Finally, the topics were related to each other, in order to find out the influence of visual and haptic mental imagery on strategies for handling activities of daily living. Thus, the results are presented below.

5.3 Presentation of the Results

This subchapter will present the results of the study, divided into topics, which are relevant to the research question. The topics were derived according to the interview guide and they are: Background; Self-care; Personal hygiene; matching clothes to one

another and getting dressed; Making the bed; strategies for recognition of personal belongings using mental images.

5.3.1 Background

Once again the background of the research participants will be reviewed. There were seven respondents, out of which, two were congenitally blind, three were adventitiously blind and two were newly blind. In every group there was one male and one female, only in the group of adventitiously blind, there was one additional male. The age range was between 23 and 59. The newly and adventitiously blind participants had lost sight in their twenties or thirties. The congenitally blind participants had lost sight before the age of two. All of the participants live together with their family members. From the females' group, only one_ adventitiously blind respondent was married, but had divorced some 15 or 20 years ago. She lives with her son. The other two female respondents live together with parents and siblings/relatives. In the males' group, one adventitiously blind and one congenitally blind persons are married_ living with their wives, children/grandchildren, while other adventitiously and newly blind persons are single_ living with their parents and siblings. To ensure the variety of backgrounds, in each group of blind persons, there were one single and one married person. In the group of adventitiously blind, two are married and one is single. The participants' degree of vision is like this: only one, adventitiously blind person has light perception, the others are totally blind. However, the congenitally blind male had light projection, but lost it after an accident, 30 years ago. One adventitiously blind male respondent had left light projection for two years after sight loss, thus, it has been ten years, since he is totally blind. One congenitally blind participant has a genetically spread disability, while the reason for the other congenitally blind respondent's loss of sight is not clear. The two newly and one adventitiously blind respondents have lost vision due to accidents. One adventitiously blind male became blind because of diabetes and the adventitiously blind female got the disability after intoxication. Some background information came up unintentionally, which turned to be important for the results. Thus, I would like to include it here. First, marital status turned out to be important and one adventitiously blind, Mr. M is a painter. He also curves in wood. This issue is quite significant to the study. Also Mrs. K has received some non-professional training from his son after losing sight and she has tried to train herself in doing variety of daily living activities. While both congenitally blind respondents have learned most of their daily skills at school and in families in early childhood. Two newly blind participants have not been trained at all, similarly to Mr. G, who is single, adventitiously blind man.

5.3.2 Self-Care

Both congenitally blind respondents reported that they do not require help in personal hygiene. They take care of themselves completely independently. Although, they live with family members, never ask for help in self-care activities. The only difficulty they reported, is cutting nails, however, they deal with this on their own. The issue is that it is not a pleasant process. Especially cutting nails on feet. “You have to bend down and remain so for some time, plus the nails are hard and it is not easy to cut them”

(Mr. D).

Another congenitally blind respondent reported:

I prefer that somebody else cuts my nails, as I can't cut them properly and it is not a pleasant process, but I have done it a lot. Nowadays, I usually go to a salon to get it done (Ms. J).

The adventitiously blind participants similarly report cutting feet nails being difficult. One male and one female respondents say that they do not get help at it. However, in this group there is a little more variety of answers. One male participant reported that he gets help from his mother every day, several times a day. He reported several activities, which he permanently receives help at. They will be mentioned in the next subchapter. “I want to do things independently at least in the house, but am not able to manage and ask for help” (Mr. G).

The two newly blinded participants' answers are somewhat different from one another, but they both receive a lot of help. The female respondent, who has been blind for three years, is more dependent but is getting used to blindness. She said:

Now I do more things independently, than I did before. At first, it was very difficult to adjust to doing things by touch. I still have difficulties, but can do more now. For example, I at all could not find my hair comb and could not comb my hair. Now, in most cases, I find my comb, I remember where it is put. Then I fix my hair and only ask my mother afterwards, if it is done in a proper way or not. I can't see it; therefore, I don't know how well it is done. I ask her to fix my hair only if we are going for a visit or if we have visitors. In the special cases. (Ms. N).

The newly blind male respondent said, that he is dependent on his mother's or sister's help. He can do

Some of the tasks independently, but others he requires help at. Main issue for him is to know, where the things are placed and then he can find his belongings and use them. Some of the tasks he gets help at; will be listed in the next subchapter.

When asked to scale (from one to seven) how much they care for their appearance, The three adventitiously blind participants said, that they pay attention to how they look, the female congenitally blind respondent agreed to them but male put more pressure on cleanness and tidy appearance. The two newly blind participants also said that they care a

lot about how they look and always try to look nice. Ms. J and Mr. M scaled their self-caring by seven points. Ms. N and Ms. K scaled their answers by six points, Mr. G and Mr. Z gave five points to their caring.

5.3.3 Personal Hygiene

In the personal hygiene section, some adventitiously and newly blind participants reported the same difficulties. Two adventitiously blind and both newly blind respondents said that they have difficulty putting tooth-paste on the tooth-brush. Ms. N said, that her mother helps her with the tooth-paste, Similarly, Mr. Z reported, that he finds doing it difficult, thus, gets help at it. It is difficult for him as well and in addition, does not like doing it any more. “I don’t like to brush teeth. First, I feel lazy and I have no interest in it, since I can’t see the white teeth” (Mr. Z). The adventitiously blind female, Mrs. K reported that she has developed a strategy of doing the task. She mentioned brushing teeth being not an easy task, because it is difficult to put the tooth-paste on the tooth-brush, as it sometimes falls down. Thus, she puts the paste on her finger, and then puts the paste on her teeth with the finger. Afterwards, uses the tooth-brush to spread the paste all over the teeth and brushes them. However, when asked a question about the easiest activity in her morning routine, she mentioned washing face and brushing teeth. Having a strategy to handle the task makes it not so difficult.

The second most difficult task seemed to be brushing hair, as one newly blind female and one adventitiously blind male reported this. They both said that they get help at it. However, Ms. N is trying to do it by herself and asks her mother to check how well she has done it, afterwards. But Mr. G always gets help with combing his hair, as he reported not having any strategy to divide his hair in a straight manner. “I can’t see how to divide my hair into two halves, thus, I can’t do it” (Mr. G). Furthermore, he and Mr. Z said, that they face difficulty, when shaving beard and moustache. They both get help at it. Mr. G said that he needs help to put the soap on his face.

They help me to put soap on the face before shaving. It needs to be distributed well, so that I don’t cut my face. Then I shave myself and ask for help, when shaving hear around ears, since I would like the line to be straight (Mr. G).

All three females reported that they shave by themselves and one adventitiously blind male, Mr. M also answered, that he even shaves now better, than before, when he could see. “I used to sometimes cut my face while shaving or some hair remained unshaved. This does not happen anymore. I have gotten used to doing things by touch” Mr. M). He says that his haptic sensation is fairly sharp and good. Also he has gotten used to doing

everything by using hands. Never-the-less, the congenitally blind, Mr. D said, that he is very well used to using hands and touch for doing everything, thus he never requires any help from anyone in solving ADL tasks.

Both congenitally blind participants answered, that they do not require any help, when taking care of their personal hygiene. They have developed strategies for doing everything, which will be discussed later in the chapter.

On the question, what is the easiest part of their personal hygiene, concerning morning routines, most of the answers were similar to one another. Washing face and taking shower were mentioned to be the easiest and the most pleasant activities. In contrast to the majority, Mr. M reported brushing hair as the easiest thing to do for him. Even though he has difficulties selecting a good hair comb, since his hair is curly and not every hair comb works well for him. Then again, good sense of touch and being used to using haptics is of help.

By profession I am a painter and now am working a lot on wood. I curve furniture in wood and make many nice designs, some of which are not easy. They require very careful and accurate motions. This may be the reason, why I don't have problems in doing anything by using hands (Mr. M).

Ms. N said that she remembers how to put make up on her face and enjoys it a lot. She uses visual remembrance of colors in her cosmetics and matches them with her clothes. To make sure, that the makeup is put correctly, she pays attention to her hand movements and this ensures the proper make up.

5.3.4 Getting Dressed and Matching Clothes to One Another

All of the respondents said, that they dress without help, except for Ms. N. She reported that her mother helps her with dressing. She passes her the clothes in the right way, so that she only needs to put it on. "Mother helps me to dress, so that I don't mix the front and the back" (Ms. N). The others reported that they do not need help with this task as long, as they have something to put on.

All of the research participants select clothes by themselves. However, some receive help at finding the wanted pieces. Mr. G and Mr. Z, similarly to Ms. N said, that they ask their family members to pass them wanted clothes. They find it difficult to recognize appropriate ones when there are many clothes together. The two adventitiously and two congenitally blind respondents said, that they know what kind of clothes they have and can always find what they are looking for. They said that when touching one or the other piece of clothing, they can recognize what it is and remember color of it. Moreover, adventitiously blind participants remember colors of clothes, which they have been having since they are blind and before. The rest, they just ask about colors when

purchasing them and remember. They remember which color goes well with which. Congenitally blind participants also reported remembering colors of clothes they have. They ask what they can wear them with, while getting a new piece and do it next time on their own. The two newly blind participants said, that they can recognize clothes, which they had before losing sight, but it is more difficult for them to recognize ones, they have bought after losing sight. However, they remember colors of everything; they have and think in terms of colors when willing to match one with the other.

The respondents were asked to describe their favorite piece of clothing. This question gave quite a variety of answers. The groups differed from each other a lot. Mr. D and Ms. J described their favorite clothes very precisely in terms of texture, shape, style and other haptic cues, but none of them was sure of the color of the clothes. However, they exactly know what to wear it with.

I have a summer skirt, bought it last summer. It is long and wide. Goes down to my ankles, but is not straight, but wider. It has a thin belt on the waist. It is very light and soft, the material is cambric. I don't remember the color. Perhaps, colorful. I can wear many things with it; almost everything goes well, (Ms. J).

Two other females described their favorite pieces of clothing very well. They used both, visual and tactile cues for description.

It is a summer dress with tiny, one centimeter embroideries on it. It is black with very short sleeves. You can't see armpits under it. Goes down to the knees. It has a little opening on the chest, the line is straight and with kind of angles on the sides. The material is very light and thin satin. The dress sits on the body above waist, has a thin stripe-like belt on the back side and is little wider from the waist down, (Mrs. K).

Ms. N even described a skirt and a shirt, which go well with one another. She used both, visual and tactile descriptions. All males explained their clothes very exactly. They used both, visual and haptic cues, like Mrs. K and Ms. N.

However, Mr. Z said that by touch he easily recognizes the clothes, which he had before losing vision, but it is difficult to recognize ones, he has gotten after loss of sight.

All the participants reported that they select clothing according to what kind of weather it is and where they are going that day. They recall what they have and decide what to wear.

5.3.5 Making the Bed

Questions about making the bed turned out to be somewhat strange to the respondents. This was due to the nature of the task and the traditional character of Georgian men, which was discussed in the introductory part of the thesis. However, every participant

answered the question and all of them had at least tried to make their beds, although some reported being unsuccessful.

All three women said that they make their beds and are doing it very well. They scaled their ability of making the bed on a scale from one to seven and gave seven points to themselves. While both adventitiously blind males reported, that they don't usually make their beds, but when needed, they can do it and scaled their abilities by 7 points as well. Mr. D said, that he has been used to making his bed from school. He scaled his ability by 7 points, like others. But Mr. Z said that he never needed to do this task, even then, when he was sighted. Therefore, he is not used to it. "I have tried to make my bed, when I was on a vacation without my mother and sister, but no luck" (Mr. Z).

When describing how they handle the activity, congenitally blind respondents very much used haptic cues. "I don't know how my made bed looks, but when I feel it, it is nice and would scale it by seven points" (Ms. J). But newly blind participants used more visual cues. Ms. N used a lot of visual information, when telling how she makes her bed, while Ms. J was very concerned about the haptically perceptible part of it. But she was not sure of how her made bed looks.

I first make sure, that the mattress is put on the bed correctly, and then use my hands to correct the mattress cover, so that it is clean and straight. Then I put the duvet on the bed, I fold the sides up and make sure, that they are proportionately done and are exactly straightened across the mattress. I don't use a pillow, thus, put the blanket on top and that's it. I can feel the sowing of the blanket and put it correctly. Outer side is sowed more accurately and inner is rougher. (Ms. N).

I have made my bed myself, when needed. I remember visually, how it is supposed to be done and can feel it by hands too. I first straighten the mattress cover, then put a pillow on it and make sure, that it is not squashed. Then put the duvet upon and fold the sides up so, that they are lined across the bed. I put the blanket over the bed with the nicer side up. I can feel the angles of the blanket and differentiate which is supposed to be up and which down, as the material is folded in and that has to be facing downwards. (Mr. G).

5.3.6 Strategies for Recognizing Personal Belongings Using Mental Images

All respondents said that they like buying new things. However, they use different strategies to recognize them. Furthermore, they have diverse reasons for keeping their belongings separately from others'. Yet, some of them have several of their things together with other family members' stuff. For example, Mr. D said that he puts his tooth-brush, shampoo, towel next to others in the bathroom, but this does not cause any problems for him. When touching the objects, he can recognize his ones. He always selects tooth-brushes by shape, so, that they differ from the ones his family members use.

Then he knows on which hanger his towel is hanging and the shampoo bottle is also easy to recognize, because he touches it, when buying and remembers how it feels.

I like my personal belongings to have permanent places, but I don't care if they are replaced from one corner of the shelf to the other, as I can always feel which is mine and will never be mistaken in this, (Mr. D).

Ms. J agrees to him and adds, that as long, as she has touched an object once and remembers that this was the one; she can always recognize it or find it among others.

In contrast to the congenitally blind participants, Mr. G and both newly blind respondents use spatial orientation to find and recognize their belongings.

I don't require any help when bathing. Only ask if everything is put on their places and then can find everything. I remember where my shampoo, soap and other things are. Also I know which is mine, when I touch it. However, I prefer everything to have its permanent place. If I am not sure, I can ask, whether this is my tooth-brush or not

(Mr. G).

"I keep my things in my room, as it is easier this way. I always know where each thing is put and then can find it" (Ms. N). Mr. Z added: "My family members are very cooperative in this and they do not replace my belongings. If they do so, always tell me, where they have placed them" (Mr. Z).

Mrs. K said: "I used to keep each piece of my belongings separately from my son's. But am no longer doing this. I only use a tooth-brush, which has a different handle, it is thinner". Mr. M agreed to her statement and said that the soap he uses differs from the one, his family members use, but they have still placed both together. "I have no difficulty in finding my soap. Its shape is different and I always find it" (Mr. M).

5.4 Summary

The results of the study showed, that the participants, who had received some training in solving tasks by using hands, were significantly better, than the others. Also those, who had some experience of doing things using touch, have better adjusted strategies for handling ADL. Moreover, all of the late and newly blind participants reported having well adapted strategies for doing tasks, which they had been doing when sighted. Those

mostly were tasks, for which persons used haptics even when being able to see. Having a certain strategy to handle an activity turned out to be the most crucial for all the respondents. However, whether they have a strategy or not is depended on how much training they have had in doing a particular activity. It is less important whether they have had the training before or after losing sight. Moreover, the activities, which always used to be done by using touch, are being performed better after losing sight, than the activities, which the participants used vision for. For example, Mr. G has difficulty dividing his hair into two halves, but makes his bed rather well. Also all of the participants reported being quite successful in making their beds and explained the strategies very accurately. But Mr. Z, who was never able to do it, still can't manage making his bed.

Furthermore, it is important to take into consideration, which types of mental images different groups of blind persons use. Congenitally blind respondents mainly use haptic mental images. They combine it with spatial images and add visual characteristics, only when describing something to others. While newly blinded persons mainly use visual mental images and combine them with spatial ones, although hardly. Haptic images are usually not used much. In addition, the strategies of newly blind persons are based on spatial images and visual remembrance. Adventitiously blind participants show a variety of answers and it again depends on their experiences of using touch. In general, they remember things visually, but no longer use their visual images very much. They, similarly to congenitally blind persons, combine spatial and haptic mental images and use both, as needed. Their strategies for handling activities of daily living are depended on the situation. If haptic strategy is more suitable for a particular situation, they use it, if not, then use spatial strategies.

However, some, who do not have a need of being active and supportive, are more helpless and similar to the newly blind participants, than those, who have families and/or have been using touch a lot before losing sight.

The research participants reported that washing hands and taking shower were the easiest activities. While the most difficult tasks seemed to be brushing teeth and combing hair, but the answers for these tasks were diverse. If the participants agreed on what was the easiest task, they thought differently of the difficult activities. Brushing hair was difficult for newly blind persons, but not for adventitiously and congenitally blind ones. Moreover, some had difficulties in recognizing their belongings, when misplaced. This replicates the other argument, that newly blind persons are better at spatial tasks, than tactual ones. Whereby, congenitally blind always prioritize haptic strategies. When

describing clothes, respondents use haptic cues. However, newly and adventitiously blind participants use visual cues as well. Never-the-less, they are good at describing them in terms of texture, shape, etc. But recognition of objects for newly and adventitiously blind totally depend on if the persons have seen them or not. Seen objects are easier to recognize and find, than not seen ones. In addition, they find their belongings easily, when they know the location of them. Thus, spatial imagery works well for them. In contrast, congenitally blind participants are very conscious of the shape of each object; they touch and remember them by shape, size, material and so on.

To sum up the main findings, The most importa

Nt difference between the three groups of blind is that they use different types of mental images, while andling activities of daily living. Adventitiously blind persons are able to use all, haptic, spatial and visual images, as needed, but congenitally blind mainly use haptic and add some spatial, newly blind mainly use visual and add spatial to it. Another very important finding was, that the tasks, which require touch by its character, were significantly better solved by every group, than tasks, which sighted persons mainly use vision for. The third finding is the importance of training or precuing. Newly and adventitiously blind persons perform much better, when trained in a certain activity or in using touch.

6 Discussion

6.1 Application of the Results to the Existing Theories

This chapter will review and discuss the main findings of the study. The results will be discussed in relation with the existing theories and previous research, which have been mentioned in the theoretical framework of the thesis. Only the main findings, which are significant to the research question will be discussed here. To remind the reader the research question of the study, it was: what characterizes mental images, thus strategies for handling ADL by blind adults?

The adventitiously blind persons use haptic as well as spatial mental images when solving or describing activities and objects. They have visual memories, but do not use them in daily activities. Whereas, newly blind participants tend to use visual memories more, than haptic sensation. They also use spatial cues for finding objects and handling activities. Congenitally blind persons use haptic cues and haptic mental images together with spatial ones. But if for a newly blind person it is important to know where his/her belonging is placed, to be able to find it, congenitally and late blind persons do not necessarily require such information. Furthermore, congenitally and adventitiously blind persons use sense of touch to solve a task and do not always think about the visual side of the activity. Whereas, newly blind persons certainly use touch for solving tasks, but do not have certain strategies for doing things. Their strategies are more indifferentiated and they are depended on their visual images. However, adventitiously blind persons do not always differentiate between using visual imagery, haptic imagery, spatial or tactual sensation of the certain object. But they still have strategies for solving tasks, if trained to use touch for activities.

6.1.1 Solving Naturally haptic and non-haptic Activities

The study showed, that all three groups have strategies for handling activities, which are more haptic by its character. For example, every participant could describe the texture of their clothes, could very precisely explain how they make their bed, but some had difficulty with putting tooth paste on a tooth-brush. Moreover, congenitally blind persons had strategies for solving every task. They were able to exactly explain how they do a particular activity.

This finding is very similar to the finding of Millar (1997), who claims, that the activities, which are haptic, can be solved more easily by a recently blind person, than activities, which they have been using vision for. He discusses, that sighted people can recognize texture by touch quite easily. But is this because they only use touch for feeling texture and temperature of an object? Thus shall having visual mental imagery improve performance in certain activities? Well it improves for newly blind persons, as they use visual images a lot. They also say, that they find and recognize objects, which they had before losing sight.

6.1.2 Characteristics of Mental Images

Adventitiously blind participants of the research reported that they use spatial cues when trying to find an object. They prefer to know where their belongings exactly are placed and they will be able to find them. In contrast to this, congenitally blind persons need to be aware of shape of an object, in order to feel comfortable to find it without help. But does this mean, that congenitally blind persons have worse orientation or spatial images, than adventitiously blind? This particular study does not prove this, but better demonstrates that adventitiously blind and newly blind do not use haptic information as much, as congenitally blinds do. However, adventitiously blind are better in using touch and haptic images, while solving daily tasks, than newly blind are. This replicates to Heller's picture and pattern recognition test, where adventitiously blind participants performed the best.

But these results may also be looked at differently. Newly blind persons are talking in terms of visual cues. They explain everything in the visual sense. Whereas, congenitally blind mainly use haptic information for recognizing objects and solving tasks, but when talking about something, describe them in terms of visual cues, as it is more understandable for the majority of the sighted people. Adventitiously blind again are the most skilled and use both, visual and tactile cues similarly, as they both are important for them. However, it is proven, that visual mental images decay together with the passage of time. Especially the visual images, which may be replaced by tactual information. For example, one may be able to describe a photo, which he last saw ten years ago, but not be able to describe wives face or his favorite shirt, in terms of color and other visual characteristics Holins (1989).

6.1.3 The role of Training and Precuing

The adventitiously blind participants, who had been trained in using touch had significantly better strategies, than others, without any training. The participant, who curves on wood and another participant, who has been training herself by the help of her

son, reported having strategies for solving every activity of daily living. While the third adventitiously blind participant, who has never received any training, seemed to stand closer to the newly blind respondents. In addition, congenitally blind persons had strategies for solving every activity. This corresponds to Graven (2003), & Graven (2005), where precuing improved recognition of objects. This study further proves, that not only recognition, but also solving tasks becomes easier, when trained before or after the loss of sight.

6.1.4 Closures

The most important outcome of the study was, that the training improves performance in the activities of daily living. Furthermore, adventitiously blind persons use all kinds of strategies, based to the variety of mental images,. They select a strategy according to the given situation. While newly blind persons tend to rely on visual images and use spatial cues for acting. In contrast, for congenitally blind persons it is very important to have haptic cues, when solving tasks. However, they similarly use spatial images, when needed.

6.2 The importance of the Study for the Field of Education

The two theories, which were described in the third chapter of the thesis, the lack of knowledge and symbolism theories are rather relevant to the situation in Georgia. Such attitude towards blind persons provides basis for alienations and thus, creates foundation for newly blind persons to be extremely depressed and helpless. Therefore, this research can provide some tips for making a rehabilitation center or a program for newly blind persons. Some of the findings may be useful to the field of education. The research is particularly important in Georgia, as it can provide a basis for future research, which is not very popular in this country. Furthermore, it can prepare a foundation for an innovation. A program for training newly blind persons may be designed.

It would be essential to design a course for teaching recently blind persons how to solve certain activities using mental images in addition to what they can feel at the moment. A test could be administered, which will show the level, which a person is at in terms of using mental images. Then the images may be used for relearning strategies for solving tasks. To illustrate this argument, I would like to give an example. If a person used to be strongly visual, when being able to see, is likely to have strong visual images of

everything seen in the past. Thus, recalling the images, trying to describe them very accurately, step by step and then converting this image into a real activity could be of help. A person could imagine himself doing an activity and then try to describe the image. The description may be taped and then the steps may be followed, first together with the use of the recorder, then independently. In training, naturally haptic information may be used very effectively, together with the visual memories. A newly blinded person can feel texture, temperature, size, weight of objects, thus may be able to relate the haptically received information with the visual images of various objects and be able to recognize, hence use the object. Similarly when doing activities, such, as dressing, finding clothes, combing hair, etc., precise description of the haptic characteristics of objects and/or activities can lead to reactivation of visual mental images.

Otherwise, congenitally blind and newly blind may empower each other. They may plan several activities together, in which each will have their part and then switch the tasks or help each other in doing things. Adventitiously blind persons may similarly be involved in the rehabilitation process. They are the ones, who have started to use haptic images and strategies for solving daily tasks. But they had been using vision a lot before. Also this cooperation will help each of the participant realize own strengths and weaknesses, thus overcome the difficulties.

6.3 Recommendations for the Future Research

This study had some limitations, which may well be overcome with further research. Since the field is not researched much and there is a great lack of literature, the background for the thesis is rather short. Thus research is definitely needed. An innovation study could be of help. This could be done in Georgia in terms of creating a rehabilitation program. But could also be done in another countries to examine how well relearning using mental images works.

Also a deeper investigation of using strategies in solving adl by blind would be important.

Similarly, may be researched using strategies in solving other tasks, not only morning routines.

Further research could also include more complex activities, as eating, doing house chores and outdoor activities.

Research about mental images would be quite helpful for the field. Investigation of what kind of mental images do blind persons use for solving variety of activities.

Never-the-less, comparison of blind and sighted persons in using mentally manipulated strategies.

A research could compare newly blind and sighted persons in using mental images and strategies for solving tasks, also compare them with adventitiously blind persons. This could give an idea about the decaying of mental images.

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Appendix

1A. Interview Guide in English

Strategies for Solving Tasks by Blind

Characteristics of Mental Images, thus Strategies for handling Daily Tasks by Blind Adults

1B. Your age;

2B. Your gender A) Male; B) Female.

3B. How long ago have you lost sight?

4B. Did you lose sight A); B) progressively suddenly, due to an accident; C) I am congenitally blind; D) Other, please specify.

5B. How much can you see? A) I am totally blind, I can't see at all. B) I have only light perception. C) I have only light projection.

6B. Do you live alone or with other people? A) Alone; B) Together with parents; C) Together with siblings;

D) Together with parents and siblings; E) Together with spouse and children; F) Together with spouse;

G) Together with children; H) Together with extended family; I) Together with friends.

7B. How much help do you get from family members and friends at daily living activities such as: bathing, getting dressed, and taking care of your personal hygiene? For example, once a day, every hour, a few times a week... Please, name a few activities which you usually get help at.

8B. Could you describe your morning routine? What do you usually do and how much time do you spend in the bathroom each morning?

9B. How much do you care for your appearance? Please, scale your answer on a scale from 1 to 7, where 1 is the least and 7 is the most care.

10B. Could you explain how you select appropriate clothes every morning? How do you match your clothes to one another when you want to put them on?

11B. How open are you towards new acquisitions when it comes to your personal belongings used during the morning routine? A) I like to buy new things quite often. B) I sometimes need to renew my belongings so I don't get bored of them; C) I only renew my belongings when they are out of order and there is no other way unless doing so; D) I hate new objects, it is difficult to get used to them and recognize them easily.

Could you describe your favorite piece of clothing, how does it look? How do you recognize this clothing when you want to put it on? What color is it? Please, describe shape, size, texture and other characteristics of it.

What is the most difficult part of your everyday hygiene and why?

What is the easiest part of your everyday hygiene and why?

In the morning do you usually make your bed by yourself or do you prefer to get help at it? If you do it yourself, please, describe how you do it. If you don't like to make your bed, please, explain why, what is difficult? Please scale your ability of doing it on a scale from 1 to 7, where 1 is the worst and 7 is the best made bed.

Do you mind having your personal belongings (like towel, tooth-brush, hair cone), placed next to others' things or do you usually put them separately and why?

Please recall the time when you had bought a new hygienic product. What was it, how did it differ from the previous product of the same type? How did you find and recognize it in the first days when you were willing to use it?

1B. Interview Guide in Georgian

უსინათლოების მიერ ყოველდღიურ ცხოვრებაში გამოყენებულ სტრატეგიები:

მენტალური ხატების მახასიათებლები და მათგან გამომდინარე სტრატეგიები რომელთაც იყენებენ ზრდასრულ უსინათლოები ყოველდღიურ ცხოვრებაში?

1B. თქვენი ასაკი:

2B. თქვენი სქესი: ა) მამრობითი; ბ) მდედრობითი.

3B. რამდენი ხნის წინ დაკარგეთ მხედველობა?

4B. როგორ დაკარგეთ მხედველობა ა) თანდათანობით ბ) უცნაურად გ) ვარდ ბალებიდან ან ბავშვობიდან უსინათლო; დ) სხვა, გთხოვთ მიუთითოთ

5B. რისი დანახვა შეგიძლიათ ა) მე ვარსრულად უსინათლო და საერთოდ ვერ ვხედავ. ბ) მე მხოლოდ სინათლს აღქმა შემიძლია. გ) მაქვს სინათლს პროექციის უნარი.

6B. მარტო ცხოვრობთ თუ ვინმესთან ერთად ა) მარტო ბ) მშობლებთან ერთად გ) დედამიშვილებთან ერთად

დ) მშობლებთან და დ-მმასთან ერთად ე) მეუღლესთან და შვილებთან ერთად ვ) მეუღლესთან ერთად

ზ) შვილებთან ერთად თ) ნათესავებთან ერთად ი) მეგობრებთან ერთად

7B. რამდენად გეხმარებიან ოჯახის წევრები და მეგობრები, მაგალითად ბანაობაში, ჩაცმაში და პირად ჰიგიენის მოწესრიგებაში? (დეეში ერთხელ საათში ერთხელ კვირაში რამდენჯერმე)... გთხოვთ დაასახელოთ რამდენიმე ყოველდღიური ქმედება, რომელშიც თქვენ ჩვეულებრივ გეხმარებიან ხოლმე.

8B. თუ შეიძლება, აღმიწერეთ თქვენი დღის რუტინა. ჩვეულებრივ რას აკეთებთ დღის მთელი რამდენ დროს ხარჯავთ დღის პროცედურებზე ყოველ დღით?

9B. რამდენად ზრუნავთ საკუთარ გარეგნობაზე? გთხოვთ შეაფასოთ თქვენი პასუხი 1-დან 7-მდე სკალაზე, სადაც 1 არის მინიმალური და 7

მაქსიმალური ზრუნვა.

10B. თუ შეიძლება ახსენით როგორ ირჩევთ შესაფერის ტანსაცმელს ყოველ დღის? როგორ უნამებთ ტანსაცმელს ერთმანეთს როცა მათ ჩაცმა გასურთ?

11B. რამდენად გიყვართ პირად ჰიგიენის საჭირო ახალ ნივთების შეძენა ა) ძალიან მიყვარს ახალ ნივთების შეძენა. ბ) ზოგჯერ მჭირდება მათ განახლება მრავალჯეროვნებისთვის ვიძენ როცა მჭირდება; C) მხოლოდ მაშინ ვყიდულობ ახალს, როცა ძველს მწყობრიდან გამოდის და

განახლება გარდ უვალა დ არმიყვარს ახალ ნივთების, ძნელა მათ ცნობა დ მათთან შეეგუება.

1) თუ შეიძლება აღწემირეთ თქვენი საყვარელ ტანსაცმელ, როგორ გამოიყურება ის? როგორ პოულობთ ამ ტანსაცმელს, როდესაც მისი ჩაცმა გასწრთ? რა ფერისაა ის? გთხოვთ აღწეროთ ფორმა, ზომა, ფაქტურა დ სხვა მახასიათებლები.

2) რა არის თქვენი ყოველდღიურ ჰიგიენის ყველაზე რთულ ნაწილ?

3) რა არის თქვენი ყოველდღიურ ჰიგიენის ყველაზე ადვილ ნაწილ?

4) დღობით თვადასწორებთ ხოლმე საწოლს თუ ვინმე გეხმარება თუ თქვენ თვადასწორებთ გთხოვთ აღმწეროთ თუ როგორ აკეთებთ მას? თუ თქვენ არ გიყვართ ლოინის გასწორება, გთხოვთ მიხრათ რატომ? თუ შეიძლება შეაფასეთ 1-დან 7-მდე სკალაზე, თქვენს მიერ გასწორებულ საწოლს. 1 არის ძალან ცუდი, 7-ძალან კარგი.

5) მნიშვნელოვანია თუ არა თქვენთვის თქვენი პირად ნივთები (როგორცაა პირსახოცი, კბილს ჯაგრისი, სავარცხელ). ცალკე ინახავთ მათ თუ სხვების ნივთებთან ერთად

6) გთხოვთ გაიხსენოთ თქვენს მიერ ბოლოდროს სემენილ ჰიგიენის საშუალება. რა იყო ეს, რით განსხვავდებოდა ამ ტიპის წინა შენაძენისგან? როგორ ცნობდით მას პირველ დღეებში?

2A. The letters of Request to The Georgian Blind Union and The Young Integration Center in English

A letter to The Georgian Blind Union, Tbilisi branch#2/Young Integration Center of Georgia

To whom it may concern,

I am Mariam Mikiashvili a member of your organization. I am currently studying at the University of Oslo in Oslo, Norway at master's level. I am studying at the department of Special Needs Education and I am entitled to conduct a research as a final Master's thesis until the spring 2011. I have chosen the following research question: what characterizes mental images thus strategies for handling ADL by blind adults? I have already received permission from The Norwegian Social Science data service (NSD). To conduct a not biased quality research I require some help from GBU for sampling. In order to gather data, I shall interview 8 persons.

Research participants should be between the age of 20 and 70. I would like to interview:

- A) 2 adventitiously blinded persons, who are over thirty years of age and have lost sight more than ten years ago;
- B) Four newly blinded persons, over twenty years of age, who have lost sight less than three years ago; C) two congenitally blinded persons over 25 years old. Balance between the two genders is desired and will be appreciated.

The gathered information will be stored privately, accessible only for the researcher and will be destroyed as soon as the data analysis is finished. The respondents will stay confidential for readers of the research, i.e. names, addresses or any other personal information will not be mentioned in the final account of the research. The respondents can withdraw themselves from the research at any time during the process. They and GBU will be notified when the analysis is over and will be provided with a brief account of the research.

Would the GBU be willing to help me with the research? Your help will certainly be appreciated. I am hoping at your kindness and helpfulness.

Sincerely yours,

Mariam Mikiashvili

2B. the letters of Request to The Georgian Blind Union and The Young Integration Center in Georgian

წერილ საქართველოს უსინათლოთ კავშირის თბილისის # 2 ფილა ლ

მე ვარ მარიამ მიქიაშვილი, საქართველოს უსინათლოთ კავშირის თბილისის #2 ფილა ლს წევრი. მე ვსწავლობ ნორვეგიაში, ოსლოს სპეციალური გოგონების მაგისტრატურაში. ჩემი სამაგისტრონაშრომი მოიცავს კვლევას, რომელიც უნდა ჩავატარო 2011 წელს გაზაფხულში. ჩემი კვლევის მთავარი შეკითხვაა: რითხასიათება მენტალური ხატები მე ავირჩიე შემდეგი კვლევითი შეკითხვა: რა მენტალური ხატებსა და მათგან გამომდინარე სტრატეგიებს იყენებენ ზრდასრულ უსინათლოები ყოველდღიურ ცხოვრებაში? უკვე მივიღე ნებართვა ნორვეგიის სოციალური მეცნიერებების კვლევითი სამსახურისგან (NSD). მიუხედავად ამისა კვლევის ჩასატარებლად დამსაჭიროება თქვენი დახმარება რესპონდენტების შერჩევაში. კვლევა მოიცავს ინტერვიუს 8 უსინათლოსთან.

კვლევის მონაწილეები შეიძლება იყვნენ 20-დან 70-წლამდე, რომელთაგან უნდა იყოს

- ა) 2 გვიან და უსინათლოებულად დამიანი, რომელთაც შეუძრულად თოვდათ წელ და მხედველობა დაკარგეს 10 წელზე მეტი ხნის წინ.
- ბ) ოთხი 20 წელზე მეტი ასაკის ახლადდა უსინათლოებულ პირი, რომლებმაც მხედველობა დაკარგეს მაქსიმუმ 3 წელს წინ
- გ) ორი დაბადებიდან ან ადრეულ ბავშვობიდან უსინათლოად დამიანი, რომლებსაც შეუძრულად თ 25 წელ.

სასურველად დცულ იყოს სქესთ შორის ბალანსი.

შეგროვებულ ინფორმაცია ხელისაწვდომი იქნება მხოლოდ მკვლევარისათვის და განადგურდება მონაცემთა ანალიზის დასრულებისთანავე. რესპონდენტების კონფიდენციალობა სრულ დიქნება დცულ და მათი სახელები, მისამართები, ან სხვა პირადი ინფორმაცია არგახდება ცნობილ კვლევის მკითხველთათვის. რესპონდენტებს შეუძლათ გამოეთიშონ კვლევას ნებისმიერ დროს, მონაცემთა შეგროვების პროცესში. მათეცნობება თკვლევის შედეგები ანალიზის დასრულებისთანავე, ასევე ექნებათ საშუალება გაეცნონ დასრულებულ სადოკუმენტაციას და კვლევის მოკლე ანგარიშს.

შეგიძლათ მეხმაროთ რესპოდენტთა მოძიებაში? ჩემთვის ძალიან მნიშვნელოვანია თქვენი დახმარება.

წინასწარ გიხდით დმა დლობას .

პატვისცემით
მარიამ მიქიაშვილ

წერილი ახალგაზრდულ საინტეგრაციო ცენტრს

მოგმართავთ, “ახალგაზრდული საინტეგრაციო ცენტრის გამგეობას”,

მე ვარ მარიამ მიქიაშვილი, საქართველოს უსინათლოთ კავშირის თბილისის #2 ფილაღს წევრი. მე ვსწავლობ ნორვეგიაში, ოსლოს სპეციალური გოგონების მაგისტრატურაში. ჩემი სამაგისტრონაშრომი მოიცავს კვლევას, რომელიც უნდა ჩავატარო 2011 წელს გაზაფხულში. მე ავირჩიე შემდეგი კვლევითი შეკითხვა: რა მენტალურ ხატებსა და მათთან გამომდინარე სტრატეგიებს იყენებენ ზრდასრულ უსინათლოები ყოველდღიურ ცხოვრებაში? უკვე მივიღე ნებათაშორის ნორვეგიის სოციალური მეცნიერებების კვლევითი სამსახურისგან (NSD). მიუხედავად ამისა კვლევის ჩასატარებლად მესაჭიროება თქვენი დახმარება რესპონდენტების შერჩევაში. კვლევა მოიცავს ინტერვიუს 8 უსინათლოსთან.

კვლევის მონაწილეები შეიძლება იყვნენ 20-დან 70-წლამდე, რომელთაგან უნდა იყოს

- ა) 2 გვიან და უსინათლოებულად დამიანი, რომელთაც შეუძრავდათ წელს და მხედველობა დაკარგეს 10 წელზე მეტ ხნის წინ.
- ბ) ოთხი 20 წელზე მეტი ასაკის ახლადდა უსინათლოებულ პირი, რომლებმაც მხედველობა დაკარგეს მაქსიმუმ 3 წელს წინ
- გ) ორი დაბადებიდან ან ადრეულ ბავშვობიდან უსინათლოად დამიანი, რომლებსაც შეუძრავდათ 25 წელს.

სასურველია დაცულ იყოს სქესთა შორის ბალანსი. შეგროვებულ ინფორმაცია ხელმისაწვდომი იქნება მხოლოდ მკვლევარისათვის და განადგურდება მონაცემთა ანალიზის დასრულებისთანავე. რესპონდენტების კონფიდენციალობა სრულად იქნება დაცული და მათ სახელები, მისამართები, ან სხვა პირადი ინფორმაცია არ გახდება ცნობილი კვლევის მკითხველთათვის. რესპონდენტებს შეუძლიათ გამოეთიშონ კვლევას ნებისმიერ დროს, მონაცემთა შეგროვების პროცესში. მათეცნობებათ კვლევის შედეგები ანალიზის დასრულებისთანავე, ასევე ექნებათ საშუალება გაეცნონ დასრულებულ სადოკუმენტაციას და კვლევის მოკლე ანგარიშს.

შეგიძლათ მუხმაროთ რესპოდენტ მოძიებაში? ჩემთვის ძალან
მნიშვნელოვანია თქვენი დახმარება.

წინასწარ გიხდით დმა დლობას .

პატვისცემით
მარამ მიქია შვილ

3A. A Letter of Consent in English

A Letter of Consent

Dear participant,

Thank you for agreeing to participate in the research. I would like to mention my research question once again. It is: What characterizes mental images thus strategies for handling daily life activities in blind adults? Therefore, my respondents are blind people. I have received permission for the research from The Norwegian Social Science Data Service.

The following interview will last from forty-five to sixty minutes. You will be asked to answer both open and closed questions. The interview will be typed on my private laptop. Personal data, such as, your name, address, social security number will not be collected. Your answers may be quoted in the final account of the research, but without mentioning your name. You will remain confidential to the future readers of the research. After completion of data analysis raw material will be deleted. You will be notified when the data analysis is over and will be provided with a brief account of the research. You can withdraw yourself from the research at any time during the process which will last until January 2011. By the time I am planning to have finished primary data analysis.

Please, don't hesitate to ask questions about the interview and research now.

May I ask you to sign this letter as an approval that you have read it and are agreeing to the conditions?

Can we start the actual interview?

Thank you!

3B. a Letter of Consent in Georgian

თანხმობის წერილ

მვირფასო მონაწილე,

მადლობას გიხდით კვლევაში მონაწილეობაზე თანხმობისთვის. მინდ შეგახსენოთ ჩემი კვლევის შეკითხვა. ეს არის: რა მენტალურ ხატებსა და მათგან გამომდინარე სტრატეგიებს იყენებენ ზრდასრულ უსინათლოები ყოველდღიურ ცხოვრებაში? ნორვეგიის სოციალურ მეცნიერებათა კვლევის სამსახურიდან მიღებულ მაქვს კვლევის დაწყების ნებართვა.

ინტერვიუგრძელება ორმოცდ ხუთიდან სამოც წუთამდე. ინტერვიუ მოცავს როგორც დახურულსევე ღია შეკითხვებს. თქვენს პასუხებს ავკრეფ და შევინავავ ჩემს ნოუბუქში. თქვენი პირადი მონაცემები, როგორცაა თქვენი სახელი, მისამართი, ადგილის ირდება გემი კვლევის საბლოანგარიში. თქვენი ზოგიერთი პასუხი შეიზლება იყოს ციტირებულ სახელს მითითების გარეშე. მონაცემთა ანაღზის დასრულების თანავე შეგროვებულ ინფორმაცია განადგურდება. თქვენ საშუალება გექნებათ გაეცნოდ დასრულებულსა და პლონაშრომს ან კვლევის მოკლე ანგარიშს. თქვენ შეგიძლიათური თქვათ კვლევაში მონაწილეობაზე 2011 წლის 1 იანვრამდე. ამ დროისთვის ვაპირებ დვიწყომონაცემთა ანაღზი.

ხომ არგაქვთ რიმე შეკითხვა ინტერვიუსა და კვლევის შესახებ.

თუ შეიძლება, ხელ მოაწერეთ ამ წერილს იმის დასტურად რომ თქვენ წაკითხეთეს წერილ და ეთანხმებით პირობებს

თქვენი ნებართვით დვიწყებ ინტერვიუს.

გმადლობთ

4. Application Form for The Norwegian Social Science Data Service

Norsk samfunnsvitenskapelig datatjeneste AS

NORWEGIAN SOCIAL SCIENCE DATA SERVICES

MELDESKJEMA

Meldeskjema for forsknings- og studentprosjekt som medfører meldeplikt eller konsesjonsplikt (jf. personopplysningsloven og helseregisterloven med forskrifter)

N

1. Prosjekttittel	
Tittel: Characteristics of mental images, thus strategies for handling daily lifeactivities when being blind.	
2. Behandlingsansvarlig institusjon	
Institusjon: Universitetet i Oslo ^{Avdeling/F} akultet: Det utdanningsvitenskapelige fakultet ^{Institutt:} Institutt for spesialpedagogikk	Velg den institusjonen du er tilknyttet. Alle nivå må oppgis. Ved studentprosjekt er det studentens tilknytning som er avgjørende. Dersom din institusjon ikke finnes på listen, ta kontakt med personvernombudet.

3. Daglig ansvarlig (forsker, veileder)

Fornavn: Torø Teigum

Etternavn: Graven

Akademisk grad: Doktorgrad

s^{filling}: Postdoctorate

Arbeidssted: University of Oslo, faculty of education, department
of Special needs education

Adresse (arb.sted): Helga Engs hus, sam seilands vei 7, 4 floor,

Postnr/sted (arb.sted): 0318 Oslo

Telefon/mobil (arb.sted): 22858059 / 96872137

E_post: t.t.graven@isp.uio.no

Før opp navn på den som har det daglige ansvaret for prosjektet. For studentprosjekt er daglig ansvarlig vanligvis veileder.

Veileder og student må være tilknyttet samme institusjon. Dersom studenten har ekstern veileder, kan biveileder eller fagansvarlig stå som daglig ansvarlig.

Arbeidssted må være i tilknytning til behandlingsansvarlig institusjon, f.eks. underavdeling, institutt etc.

NB! All korrespondanse går via e-post. Det er derfor viktig at du oppgir korrekt e-postadresse. Det bør være en adresse som du bruker aktivt over tid. Husk å gi beskjed dersom den endres.

4. Student

Studentprosjekt: Ja • Nei o

Fornavn: Mariam

Etternavn: Mikiashvili

Akademisk grad: Høyere grad

NB! All korrespondanse går via e-post. Det er derfor viktig at du oppgir en korrekt e-postadresse. Det bør videre være en adresse du bruker aktivt over tid. Husk å gi beskjed dersom den endres.

Privatadresse:

Dighmis Masivi, Kv.2, Korp.6, Bina 70,

Postnr/sted (Privatadresse): 0159 Tbilisi, Georgia Telefon/mobil: 22858059 / 96872137

E-post: mariammi@student.uv.uio.no

5. Formålet med prosjektet

Prosjektets formål

The research deals with recently and adventitiously blinded people. How do they use their visual memories when attacking their morning toilette? Do they combine their visual memories to touching, hearing and etc? My actual research question is: what characterizes mental images, thus strategies for handling daily life activities when being blind?

Redegjør kort for prosjektets formål, problemstilling, forskningsspørsmål e.l.

Maks 1500 tegn.

6. Prosjektomfang

Velg omfang

Oppgi øvrige institusjoner

- Enkel institusjon
- o Nasjonal multisenterstudie
- o Internasjonal multisenterstudie

Med multisenterstudier forstås her forskningsprosjekter som gjennomføres ved flere institusjoner samtidig, som har samme formål og hvor det utveksles/deles personopplysninger mellom

<p>Hvordan foregår samarbeidet mellom institusjonene? Hvem har tilgang til personopplysninger og hvordan reguleres tilgangen?</p>		<p>deltakende institusjoner.</p> <p><u>Les mer om hva personopplysninger er</u></p>
<p>7. Utvalgsbeskrivelse</p>		
<p>Beskrivelse av utvalget</p>	<p>Blind persons between the age of 18 and 70</p>	<p>Med utvalg menes dem som deltar i undersøkelsen eller dem det</p>

		innhentes opplysninger om. F. eks. et representativt utvalg av befolkningen, skoleelever med lese- og skrivevansker, pasienter, innsatte.
Rekruttering og trekking	As the research is going to be conducted in the country of Georgia and my future respondents are blind persons, I will take contact with The Georgian Blind Union (GBU). The GBU has precise information about blind people in Georgia and the organisation staff will recruit the sample. I will provide an official letter regarding my research. I will describe my research, explain who I am and why is the research going to be conducted. Then explain the rights of the future sample and the type of	Beskriv hvordan utvalget trekkes/rekrutteres. Utvalget kan trekkes fra registre, f. eks. folkeregisteret, NAV, pasientregistre, eller rekrutteres gjennom f.eks. en bedrift, skole, idrettsmiljø, eget nettverk. Oppgi hvem som foretar trekkingen/rekrutteringen.
Førstegangskontakt	The GBU staff will contact the sample first.	Oppgi hvem som oppretter førstegangskontakt med utvalget og beskriv hvordan den opprettes. <u>Les mer om førstegangskontakt</u>
Alder på utvalget	<input type="checkbox"/> Barn (0-15 ar) <input type="checkbox"/> Ungdom (16-17 ar) <input checked="" type="checkbox"/> Voksne (over 18 ar)	
Antall personer som inngår i utvalget	6-8 persons	
Inkluderes det myndige personer med redusert eller manglende samtykkekompetanse?	Ja o Nei •	Redegjør for hvorfor det er nødvendig å inkludere myndige personer med redusert eller manglende samtykkekompetanse. <u>Les mer om inklusjon av myndige personer med redusert eller manglende samtykkekompetanse</u>
Hvis ja, beskriv		

8. Metode for innsamling av personopplysninger		
Kryss av for hvilke datainnsamlingsmetoder og datakilder som skal benyttes	<input type="checkbox"/> Spørreskjema <input checked="" type="checkbox"/> Personlig intervju <input type="checkbox"/> Gruppeintervju <input type="checkbox"/> Observasjon <input type="checkbox"/> Psykologiske/pedagogiske tester <input type="checkbox"/> Medisinske undersøkelser/tester <input type="checkbox"/> Journaldata <input type="checkbox"/> Registerdata <input type="checkbox"/> Annen innsamlingsmetode	Personopplysninger kan innhentes direkte fra den registrerte og/eller fra ulike journaler (NAV, PPT, sykehus, bofellesskap og lignende) eller eksisterende registre (f.eks. Statistisk sentralbyrå, Kreftregisteret).
Annen innsamlingsmetode, oppgi hvilken		
Kommentar til metode for innsamling av personopplysninger	Personal information will not be collected.	
9. Datamaterialets innhold		
Gjør rede for hvilke opplysninger som samles inn	Questions deal with respondents' morning routines. They will be asked to recall, imagine, describe and explain some of their everyday activities.	Spørreskjema, intervjuguide/temaliste, m.m. legges ved meldeskjemaet til slutt.
Samles det inn direkte personidentifiserende opplysninger?	Ja o Nei •	<u>Les mer om hva personopplysninger er</u>
Hvis ja, hvilke?	<input type="checkbox"/> Navn <input type="checkbox"/> Fødselsdato <input type="checkbox"/> 11-sifret fødselsnummer <input type="checkbox"/> Adresse og/eller e-postadresse	NB! Selv om resultatene i den endelige publikasjonen vil være anonymisert, må det krysses av her dersom direkte eller indirekte personidentifiserende opplysninger

	og/eller telefonnummer	registreres i datamaterialet underveis i prosjektet.
spesifiser hvilke		
Samles det inn indirekte personidentifiserende opplysninger?	Ja • Nei o	En person vil være indirekte identifiserbar dersom det er mulig å identifisere vedkommende gjennom bakgrunnsopplysninger som for eksempel
Hvis ja, hvilke?	Gender and age only.	bostedskommune eller arbeidsplass/skole kombinert med opplysninger som alder, kjønn, yrke, diagnose, etc.
Samles det inn sensitive personopplysninger?	Ja • Nei o	
Hvis ja, oppgi hvilke	<input type="checkbox"/> Rasemessig eller etnisk bakgrunn, eller politisk, filosofisk eller religiøs oppfatning <input type="checkbox"/> At en person har vært mistenkt, siktet, tiltalt eller dømt for en straffbar handling <input checked="" type="checkbox"/> Helseforhold <input type="checkbox"/> Seksuelle forhold <input type="checkbox"/> Medlemskap i fagforeninger	
Samles det inn opplysninger om tredjeperson?	Ja o Nei •	Med opplysninger om tredjeperson menes opplysninger som kan spores tilbake til personer som ikke inngår i utvalget. Eksempler på tredjeperson er kollega, elev, klient, familiemedlem.
Hvis ja, hvem er tredjeperson og hvilke opplysninger registreres?		
Hvordan blir tredjeperson	<input type="checkbox"/> Skriftlig informasjon	

informert om behandlingen?	<input type="checkbox"/> Muntlig informasjon <input type="checkbox"/> Blir ikke informert	
Blir ikke informert, redegjør hvorfor		
10. Informasjon og samtykke		
Oppgi hvordan informasjon til utvalget gis	<input type="checkbox"/> Skriftlig informasjon ■ Muntlig informasjon <input type="checkbox"/> Ingen informasjon	Som hovedregel skal det gis informasjon og innhentes samtykke fra den registrerte. Dersom informasjon gis skriftlig, legg ved kopi av informasjonsskriv. Dersom det ikke skal gis informasjon, må dette redegjøres for. <u>Les mer om hvilken informasjon som bør gis til utvalget</u>
Redegjør	The staff members of The GBU will give oral information to the possible respondentws. i will read to them a letter of confirmed agreement when I MEET THEM FOR INTERVIEWS.	
Oppgi hvordan samtykke innhentes	<input type="checkbox"/> Skriftlig samtykke ■ Muntlig samtykke <input type="checkbox"/> Innhentes ikke samtykke	Dersom det benyttes skriftlig samtykke, anbefales det at dette følger i teksten etter informasjonen. Dersom det ikke skal innhentes samtykke, må dette redegjøres for. <u>Les mer om krav til gyldig samtykke</u>
Innhentes ikke samtykke, redegjør		
11. Informasjonssikkerhet		
Direkte personidentifiserende opplysninger erstattes med et referansenummer som viser til en atskilt navneliste	Ja o Nei •	Direkte personidentifiserende opplysninger bør ikke registreres sammen med det øvrige datamaterialet.
Hvordan lagres listen/koblingsnøkk		

elen og hvem har tilgang til den?		
Direkte personidentifiserende opplysninger lagres sammen med det øvrige materialet	Ja o Nei •	
Hvorfor er det nødvendig med oppbevaring av direkte identifikasjonsopplysninger sammen med det øvrige datamaterialet?		
Lagres direkte personidentifiserbare opplysninger på andre måter?	Ja • Nei o	
Spesifiser	Personal information will not be collected at all.	
Hvordan registreres og oppbevares datamaterialet?	<input type="checkbox"/> Fysisk isolert PC tilhørende virksomheten <input type="checkbox"/> PC i nettverkssystem tilhørende virksomheten <input type="checkbox"/> PC i nettverkssystem tilknyttet Internett tilhørende virksomheten <input checked="" type="checkbox"/> Fysisk isolert privat PC <input type="checkbox"/> Privat PC tilknyttet Internett <input type="checkbox"/> Videoopptak/fotografi <input type="checkbox"/> Lydopptak <input type="checkbox"/> Manuelt/papir	Sett flere kryss dersom opplysningene registreres på flere måter.

	<input type="checkbox"/> Annen registreringsmetode	
Annen registreringsmetode beskriv nærmere		
Behandles og/eller lagres lyd- og videoopptak og/eller fotografi på PC?	Ja o Nei •	
Hvordan er datamaterialet beskyttet mot at uvedkommende får innsyn i opplysningene?	All the data will be collected and saved on my private PC which has an username and password, known only for myself. The PC has a microphone which will be used for data recording. The PC will be locked in a locker.	Er f.eks. PC-tilgangen beskyttet med brukernavn og passord, og står PC-en i et låsbart rom?
Dersom det benyttes mobil lagringsenhet (bærbar PC, minnepenn, minnekort, cd, ekstern harddisk), oppgi hvilken type, og redegjør for hvorfor det benyttes mobil lagringsenhet		
Skal prosjektet ha medarbeidere som vil få tilgang til datamaterialet på lik linje med daglig ansvarlig/student?	Ja o Nei •	
Hvis ja, hvem?		
Innhentes eller overføres personopplysninger	Ja o Nei •	

ved hjelp av e-post/Internett?		
Hvis ja, oppgi hvilke opplysninger		
Vil personopplysninger bli utlevert til andre enn prosjektgruppen?	Ja o Nei •	
Hvis ja, til hvem?		
Skal opplysningene samles inn/bearbeides av en databehandler?	Ja o Nei •	Med databehandler menes en som samler inn og/eller behandler personopplysninger på vegne av den behandlingsansvarlige. Eksempler på ofte brukte databehandlere er Questback, Synovate MMI, Norfakta etc.
Hvis ja, hvilken?		Les mer om databehandleravtaler her
12. Vurdering/godkjenning fra andre instanser		
Søkes det dispensasjon fra taushetsplikten for å få tilgang til data?	Ja o Nei •	For å få tilgang til taushetsbelagte opplysninger fra f.eks. NAV, PPT, sykehus, må det søkes om
Kommentar	No sensitive data is collected for the project. Therefore, other instances are not necessary to be informed.	dispensasjon fra taushetsplikten. Dispensasjon søkes vanligvis fra aktuelt departement. For dispensasjon fra taushetsplikten for helseopplysninger skal det for alle typer forskning søkes Regional komité for medisinsk og helsefaglig

Skal det innhentes godkjenning/tillatelse fra andre instanser?	Ja o Nei •	Det kan f. eks. være aktuelt å søke tillatelse fra registreier for tilgang til data, ledelsen for tilgang til forskning i firma, etc.
Hvis ja, hvilke?		
13. Prosjektperiode		
Prosjektperiode	Prosjektstart:10/11/2010	Prosjektstart
	Prosjektslutt:15/04/2011	Tidspunkt for når førstegangskontakt opprettes og/eller datainnsamlingen starter. Prosjektslutt Tidspunkt for når datamaterialet skal anonymiseres, slettes, eller arkiveres i påvente av oppfølgingsstudier. Dette sammenfaller gjerne med publisering og ferdigstilling av oppgave, avhandling eller rapport.
Hva skal skje med datamaterialet ved prosjektslutt?	<input checked="" type="checkbox"/> Datamaterialet skal anonymiseres <input type="checkbox"/> Datamaterialet skal oppbevares med personidentifikasjon	<p>Med anonymisering menes at det ikke lenger er mulig å føre opplysningene tilbake til enkeltpersoner i datamaterialet.</p> <p><u>Les mer om anonymisering</u></p>
Hvordan skal datamaterialet anonymiseres?	The data material will be destroyed. All the recorded material and transcribed data will be deleted permanently from the recorder and laptop.	<p>Hovedregel for lagring av data med personidentifikasjon er samtykke fra den registrerte.</p> <p>Årsaker til oppbevaring kan være konkrete oppfølgingsstudier, undervisningsformål eller annet.</p> <p>Datamaterialet kan lagres ved egen institusjon, offentlig arkiv eller annet.</p>
Hvorfor skal datamaterialet oppbevares med personidentifikasjon?		
Hvor skal datamaterialet		<u>Les mer om arkivering</u>

oppbevares, og hvor lenge?		
14. Finansiering		
Hvordan finansieres prosjektet?	As I am a Quota Skjeme student and am financed by the Norwegian Loan Fund, my monthly scholarship will be used for the project.	
15. Tilleggsopplysninger		
Tilleggsopplysninger		
16. Vedlegg		
Antall vedlegg	2	

5. Other Correspondences Received from The NSD

NORSK SAMFUNNSVITENSKAPELIG DATATJENESTE AS

NORWEGIAN SOCIAL SCIENCE DATA SERVICES

NSD

Torø Teigum Graven Institutt for spesialpedagogikk Universitetet i Oslo Postboks 1140
Blindern 0318 OSLO

Harald Hårfagres gate 29 N-5007 Bergen Norway Tel: +47-55 58 21 17 Fax: +47-55 58
96 50 nsd@nsd.uib.no www.nsd.uib.no Org.nr. 985 321 884

Vår dato: 26.10.2010

Vår ref:25137/3/KH

Deres dato:

Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV
PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 30.09.2010.

Meldingen gjelder prosjektet:

25137

Behandlingsansvarlig Daglig ansvarlig Student

Characteristics of mental Images, thus Strategies for handling daily Inactivities when being blind

Universitetet i Oslo, ved institusjonens øverste leder Torø Teigum Graven Mariam Mikiashvili

Etter gjennomgang av opplysninger gitt i meldeskjemaet og øvrig dokumentasjon, finner vi at prosjektet ikke medfører meldeplikt eller konsesjonsplikt etter personopplysningslovens §§ 31 og 33.

Dersom prosjektopplegget endres i forhold til de opplysninger som ligger til grunn for vår vurdering, skal prosjektet meldes på nytt. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/forsk_stud/skjema.html.

Vedlagt følger vår begrunnelse for hvorfor prosjektet ikke er meldepliktig.



Vennlig hilsen I

Bjørn Henrichsen

Kjersti Håvardstun

Kontaktperson: Kjersti Håvardstun tlf: 55 58 29 53 Vedlegg: Prosjektvurdering

Kopi Mariam Mikiashvili, Dighmis Masivi, Kv.2, Korp.6, Bina 70, Tbilisi,
GEORGIA,

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1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. nsd@uio.no TRONDHEIM: NSD.
Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim. Tel: +47-73 59 19
07. kyrre.svarvaesvt.ntnu.no TROMSØ: NSD. SVF. Universitetet i Tromsø, 9037
Tromsø. Tel: +47-77 64 43 36. nsdmaa@sv.uit.no



Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektør: 25137

Personvernombudet kan ikke se at det foretas behandling av personopplysninger med elektroniske hjelpemidler eller at det opprettes manuelt personregister som inneholder sensitive personopplysninger. Prosjektet vil dermed ikke omfattes av meldeplikten.

Prosjektstøtt er 15.04.2011. Notater makuleres.

Enkelt personer vil ikke kunne gjenkjennes i oppgaven.

5B.

Norsk samfunnsvitenskapelig datatjeneste AS

NORWEGIAN SOCIAL SCIENCE DATA SERVICES

NSD

Torø Teiguni (iraven Institutt for spesialpedagogikk Universitetet i Oslo Postboks
1140 Blindern 0318 OSLO

Harald Hårfagres gate 29 N-5007 Bergen Norway Tel: .47-55 58 21 17 Fax: .47-55 58
% 50 nsdônsd uib no www tød uib no Oignr 985 321 884

Vår dato: 06.12.2010

Vår ref: 25137 KH/LR

Deres dato: Deres ref:

ENDRINGSMELDING

Vi viser til henvendelse fra Graven den 26.11.2010 vedrørende prosjektet:

25137

Characteristics of mental Images, thus Strategies for handling daily life activities when being blind

Ull g|orcs lur oppmerksom pa at lydopptakene som foretas i forbindelse med prosjektet vil bli behandlet ved bruk av pc-basert utstyr. Ombudet finner at prosjektet kan gjennomføres med hjemmel i

personopplysningsloven § 8 første ledd samtykke og 9 a). Det er lagt til grunn at den enkelte informant mottar tilsvarende informasjon om prosjektet som det som fremgår av informasjonsskrivet vedlagt meldeskjema. Dato for prosjektslutt samt navn til daglig ansvarlig (veileder) bør fremgå.

Ombudet legger til grunn at taushetsplikten ikke er til hinder for rekruttering og førstegangskontakt med informantene.

Ta gjerne kontakt dersom noe er uklart.

Vennlig hilsen

lot. U~l

Voni I Ienri< lisen

kju*A "flasset t/jk

Kjersti 1 låvardstun

Kontaktperson: Kjersti Håvardstun tlf: 55 58 29 53

Kopi: Martam Mikiashvili, Dighmis Masivi, Kv.2, Korp.6, Bina 70,

Tbilisi, GEORGIA

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36 nsdmaa»sv Ult no