

Haptic Art Experiences Described as Vocals, Sounds and Written Words by Deafblind

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Bios

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Camilla Groth is an artist, researcher and teacher with a traditional training in ceramic crafts. Her work has been exhibited in Tokyo, London, Paris, New York and Helsinki and is bought by the Finnish state art commission. Her main research interests lie in haptic experiences and embodied cognition in design and craft practice, with a focus on materiality and material engagement. Camilla is currently Associate professor II of Art and Craft at the Department of Visual and Performing Arts Education, University of Southeast Norway.

Russ Palmer is an International music therapist and vibroacoustic therapy practitioner, international lecturer, and part of Social-haptic communication research group. He is one of the founder, developer and advisor of using haptices. He is a songwriter and musician who has published a music CD and DVD. He has been involved in the development of a portable music floor known as the Tac-Tile Sounds System™ with University of Sheffield. His main focus is on dual-sensory impaired clients, and he has published various articles on musical perception by cochlear implants and how to feel musical vibrations.

Abstract

It is generally understood that the human senses are interconnected and always work in relation to each other. How does this work when one or two senses are lost due to a dual sensory impairment? Deafblind persons' perception and experiences of arts are based on their residual auditory and visual senses, and touch. Their haptic exploration, their touch, movements and orientation towards the objects give blind persons direct, independent experience. Few studies explore the aesthetic experiences and appreciation of artefacts of dual-sensory people, and how they would interpret and express their perceived experience through another sensory modality.

This pilot research describes and analyses six different deafblind people sharing their interpretation of five statues in vocals, sounds and written descriptions based on their haptic experiences. The informants found new and multimodal ways of expressing their experiences. We conclude that it is possible to transfer felt experiences from one modality to another and that this facilitates a deeper understanding and appreciation of the art work in dual impaired persons. This research expands the idea of auditive descriptions made from haptic aesthetic experiences, and suggest these as artistic supports to traditional linguistic descriptions.

KEYWORDS: Haptic experience, deafblindness, sculpture, aesthetic experience, vocalisation, sound.

Introduction

Research in multimodality is very young and has started to form its' own discourse as late as the mid 90ies. By multimodality it is argued that humans make meaning and communicate meaning in multiple ways, often through many modes and channels such as speech, gesturing and writing, but also through images, body movements and voice intonations. These means for communicating often appear together, even if not always simultaneously (Jewitt, 2016, p. 2). By making sense or communicating multimodally we counter for a more *whole* image of the content than what is possible with only single means. It is also recognized that the different modalities have different potentials and restrictions, but that none should be considered to have more potential than the other, even though for example speech may be considered to have the highest reach (Jewitt, 2016, p. 3). This allows for the democratic inclusion of non-verbal modes of communication, such as art and performances.

Multimodality studies do not study the senses or the sensory modalities but focus on cultural and social aspects of modalities of communication. However, in this paper we draw on the theory of multimodal communication because of the alternative ways our informants used to communicate their aesthetic experiences. We focus on the aspect of changing the channels of sensory experience to another mode of communicating, namely from direct touch to immediate vocalisation and sound.

It is generally understood that the human senses are interconnected and always work in relation to each other (Pink, 2011; Gallace & Spence, 2010; Shifferstein & Wastiels, 2014). When we hear a sharp sound our eyes turn towards the sound automatically. Similarly, if we touch something blindfolded we might imagine what it would look like, or if we hear the word blue we might see the colour blue in our imagination. In this way we also use our embodied and experiential knowledge about what something feels like or tastes like even when only looking at a familiar object. Therefore, focussing one's analysis on a too narrow understanding of what one sense conveys might limit the "whole" interpretation of a sensory experience of for example an artefact.

Visual anthropologist Sarah Pink (2009) has developed an ethnography that encourages the acknowledgment of multiple sensory experiences in research. She describes her sensory ethnography as: "a way of thinking about and doing ethnography that takes as its starting point the multi-sensoriality of experience, perception, knowing and practice" (Pink, 2009, p. 1). Pink further writes that the Western categories of the five senses: sight, hearing, taste, smell and touch, may be argued to be a cultural construct, that differ in other cultures (Pink, 2009, 50). Although

these categories are useful to be able to talk about sensory experiences, we should keep in mind that they float into and are embodied in each other.

Our Western use of the five categories were also challenged by the psychologist James Gibson (1966/1983) who introduced the concept of *Haptics* rather than merely the use of the word touch. The haptic sensory system is a wider understanding of the sense of touch and Gibson describes the haptic system as follows: “The sensibility of the individual to the world adjacent to his body by the use of his body” (p. 97). The concept includes the person’s deliberate and active movements, balance and orientation as well as proprioception, which is the awareness of one’s body parts in relation to each other, the kinetic movement and position of the limbs (Gibson, 1966/1983, p. 36-37).

Gibson’s (1986) work on sensory cognition and theory of affordances has been an important steppingstone in the development of embodied cognition theory (Lakoff & Johnson, 1999; Johnson, 1987, 2007; Noë, 2004, 2009; Thompson & Stapleton, 2008; Varela, Thompson, & Rosch, 1991) than highlights the body and sensory perceptions in the process of making sense of our interactions with our environment and related experiences. On a general level these writers belong in a non- representative tradition that speaks for a direct and unmediated sensory dimension of sense-making that is thus concerned with reducing the distance between subject and object – as opposed to being distanced by representation as mediation (Gregory et al. 2009, p. 646).

In visual art, the primary focus is naturally on the visual perception. The aesthetic experience is traditionally understood as a distant visual contemplation of an artefact, either sculptural or painterly, that is not often engaged with bodily in a concrete way. Vision allows for an overall comprehension and overview of the object that mere touch, taste or hearing will never convey. However, the word aesthesis derives from the Greek word for sensibility and sensory experience, thus the underlying meaning of an *aesthetic experience* accommodates for a sensation of the senses in a larger sense than only the visual.

Compared to the distant and objective visual, the haptic modality is always limited to the subjective touch area of the hand or the body. Touch cannot convey the whole at once, but gives sections of the whole that needs to be re-constructed in one’s mind to form a whole over time (Keller, 1908, p. 12). Therefore, the haptic is explorative and constructive in nature as well as being intimate, personal and direct. The haptic experience is immediate, unmediated and

temporary. When we stop touching, the image or the feeling of the experience will be gone in an instance unless we find ways of capturing it instantly.

In this paper, we focus on the haptic aesthetic experiences of deafblind informants and on their modes of communication of their experiences. Acquired deafblindness is a general term of describing a group of very different severely visually and hearing impaired group. Usher syndrome is one of the common reasons for vision and sight to deteriorate over time. Five out of six informants in this pilot research have the Usher syndrome, commonly called deafblindness (see reference for Nordic definition of deafblindness). During the last ten years, cochlear implants (see reference for Cochlear Implants) have been developed extensively, and through these devices some of the informants' auditive perception have been partly restored. In this study, five deafblind people were using cochlear implants and one; behind the ear hearing aids.

Due to their dual modal impairment, deafblind persons generally have difficulty in perceiving their surrounding environment from a distance and they often need help through an assistant or interpreters. Usually an audial and environmental description is made by sighted people, sign language interpreters or personal assistants, where blind people are at the receiving part (Lahtinen et al. 2010). Lahtinen (2008) has previously studied how to interpret visual arts onto the body of deafblind people using touch and haptics, i.e. social-haptic communication, thus enhancing the art experiences through touch for dual-sensory impaired persons. The social-haptic communication (basic haptics and haptemes) from its original use, i.e. as a support for verbal communication (Lahtinen, 2008) includes environmental description in connection to visual arts (paintings, still photographs ect.).

However, the focus of this present research is the reverse situation, namely on how something feels like to someone who is blind. The informants' experience is in focus and conveyed to the researcher multimodally. Blind touch and the experiential knowledge of the blind or the felt experience of the world have been utilized in research on spatial and sensory research in a variety of creative fields such as architecture, design and craft (Pallasmaa, 2005, 2009; Vermeersch, Nijs & Heylighen 2011; Groth, 2017; Akner-Koler & Ranjbar, 2016) and philosophy (Merleau-Ponty, 2010/1945) to human geography and ethnography (Ingold, 2004; Mcpherson, 2009; Paterson, 2009; Harrison, 2000). Due to the blind informants' special condition we get insight into fundamental aspects of our living environment that often is concealed from us, as we take our haptic experiences for granted.

Mundane haptic experiences are perceived in the background of our conscious experience (Gallace, 2012). By mere touch we cannot perceive any information from a surface, but we need movement to detect surface structures, orientations and material qualities. However, deafblind informants are extra sensitive to their environment and the haptic interfaces that are available. Due to sensory substitution, the deafblind condition alters haptic expertise and tactile working memory to expert levels (Nicholas, 2010). Neuroscientist Jude Nicholas (2010) has studied deafblind subjects and found that deafblind people are generally more experienced in recognising stimuli by active touch (p. 17), their tactile memory is enhanced and they have a superior tactile performance (p. 18).

Fingertips, although extremely sensitive, cannot follow cavities in small figurines. Thus some blind persons prefer to explore very small objects by putting these into their mouths, using the even more sensitive tongue to discover the object (Akner- Koler & Ranjbar, 2016, p. 3). Akner- Koler & Ranjbar (2016, p. 3) have identified a particular *haptic aesthetic sensitivity* that is about actively and physically exploring properties and emotional responses of objects. Additionally, multimodal communication is highlighted in these special circumstances. The personal and expressive language a person uses might not change but the methods of receiving and communicating with peers might change many times during a person's lifetime (Lahtinen, 2008).

Research setting and methods

The Association of Finnish sculptors and The Finnish Deafblind Association organized a tactile art exhibition, in which a panel of deafblind persons selected the most “touchable” sculpture of the year, and that was awarded a “Most Touchable Sculpture” price. The sculptures used in this research setting are selected from the year 2016 exhibition at Galleria Art Kaarisilta in Sanomatalo, in central Helsinki (Figure 1), (see also this link for a video presentation of the exhibition <http://areena.yle.fi/1-3785443>)



Figure 1: The exhibition at Sanomatalo, 14 November 2016: Photographer: Finnish Deafblind Association.

The present research was designed to study deafblind peoples’ exploration of three dimensional sculptures by hands and hand movements. We draw on two separate research settings in this paper, one is a single informant who described her haptic experiences of the sculptures verbally and in writing. In the second setting, five deafblind informants describe their haptic experiences of the sculptures by producing sounds. The informants’ voice and sound performances were recorded with a portable recorder and later edited using the Goldwave sound editor before being forwarded to an mp3 format. Figure 2 shows an example of how the sound descriptions are presented on the The Finnish Deafblind Association website, the image of the sculpture is shown only in the end of the sound description.



Figure 2: Example of a sound description: Photographer Tuija Wetterstrand.

In the following we will describe the two research settings and the methods as well as discuss the results of the analysis and our general understanding of these.

Setting one: In the first setting, text based descriptions were made of originally 9 sculptures from the art exhibition by one deafblind informant. The sculptures were displayed on three tables in three different rooms. The informant was producing spoken Finnish language and she was receiving Finnish tactile (hands on) sign language. The informant was exploring each sculpture haptically and describing experiences of them verbally which were noted down by a note taker. This text was sent to the informant by e-mail, which was later edited, giving shortened descriptions of each sculpture. We display only these shortened descriptions in this paper.

The informant is blind and is not using any hearing devices, that means there is no useful hearing available. The informant has many decades of experience of receiving different kinds of environmental descriptions by interpreters, personal assistants and friends. In everyday life, the informant is mainly using the tactile sense which constitutes the main channel for receiving information. The informant has thus developed an *haptic aesthetic sensitivity* for tactile differentiations and was able to utilize this expertise in the written production of a haptic description. The informant is also very verbally talented and has an analytic disposition. The original texts have been translated from Finnish to English for this conference paper. We have included these texts in the case descriptions of the sound descriptions from the second research setting, *Setting two* (see below) as five of these artworks were also described by sounds produced by five deafblind people.

Setting two: A seven-hour long workshop by a blind music teacher was conducted with five deafblind informants. The workshop was divided in two parts, in the first the informants were introduced to their own voice production. The second half was concentrating on producing a sound description of a sculpture. All informants first explored all five sculptures blindfolded, using their hands and movements. Because some informants have some sight left, the blind folding ensured that all informants were using only their haptic information.

All five informants, four men and one female, have been using hearing aid devices such as cochlear implants (CI) (4) and behind the ear hearing aids (HABE) (2) bilaterally since childhood from age 3 to 7 years old. One informant has one of each. Without hearing devices they are deaf or severely hearing impaired, and have experience of auditive information only through hearing devices (HD). All informants communicate through spoken language. All of them have Retinitis Pigmentosa, deteriorating visual impairment (VI) with narrow vision field and night blindness. They also have a visual perception of the world around them or using their visual memory (table 1). One of the informant is blind, others are partially sighted.

	Informant 1	Informant 2	Informant 3	Informant 4	Informant 5
Gender	Male	Male	Male	Male	Female
Age	58	54	34	22	41
VI	Blind	VI	VI	VI	VI
HD 2016	2 CI (2004, 2010)	2 CI (2011, 2012)	CI (2016, 2017)	2 HABE (2015)	E2 CI (2012, 2014)
First HD	4.5 years old	3 years old	4 years old	7 years old	7 years old

Table 1: Informants background information including their visual and hearing impairment.

The first part of the workshop explored how the body can be warmed up using various breathing and vocal exercises. At first, the informant's hesitated and showed some resistance to explore and use their voices. This may be due to the informants not generally being used to using their voice in this manner. Additionally, the sound they perceive from the teacher takes time to be interpreted through the hearing aid devices, for example, when using hearing aids the sound perceived may be at a distance away from the person's body, whereas the sound perceive through CI may be closer to the body. Another factor to be consider is how this sound scape is received through hearing aid devices, as it may be distorted, out of pitch or in tune depending on the individual's reception of their residual hearing.

The next phase of the workshop was exploring movements and sound creatively together in order

to project the individuals' voice. Some informants responded well to this approach while others were unsure how to use their voices. However, as the workshop progressed, their confidence grew. On the question of dynamics, for example loud or soft these vary from person to person as they may have to adjust their hearing aid devices according to the room acoustic. For example, if the room is echoing this can add confusion in the individual sound perception. In the final part of the workshop, there was an opportunity for each participant to explore a theme idea which illustrate their vocal creativity, for example sounds as from under the sea, making bubbles and deep vocalisation sounds. The results included some very interesting examples, some of which were humorous and creative. All described interpretations were made through a haptic exploration and this haptic information was interpreted to a language level (written description) and vocals and sounds (non-verbal description).

The sculptures were then presented on a large round table. After examining all five sculptures each informant selected one sculpture that they focused on. They then considered how to produce a sound description of that chosen object. Each informant used 10-30 minutes to plan and produce their sound and vocalisation. They were asked to imagine what kind of sound image they would create of the sculpture and they also rehearsed some sounds by themselves. When they felt ready, they called the workshop leader to them and they started the recording of their interpretations individually while the other informants were waiting in the next room. The workshop leader was available for the informants and provided supervision when needed. The workshop leader also audio-recorded each performance, edited them and put up the final recordings on the website of The Finnish Deafblind Association.

Sound descriptions of haptic-aesthetic experiences

The five sound description cases lasted from 25 seconds to 1 min 20 seconds.

All sound descriptions have a picture of the art work in the end of the recording, lasting 3 seconds. Five sound descriptions include photographs, names of art work and artist, year and video length. However, we recommend the reader of this paper to first listen to the sound description of the art piece without any image as in this way the reader can better imagine the felt experience only, as does the blind/blinded. Therefore, we have consciously not included any images of the described sculptures in this paper.

CASE 1

Blinded Informant 1.

Vocal and sound description.

<https://m.youtube.com/watch?v=zSJ0megPD3I>

Sound description of the sculpture “Beyond Presence”, Artist: Saana Murtti 2013, 0.25s

Text description by deafblind person:

This sculpture is heavy, maybe made of plaster, since my hands get powdered with a fine dust. It is made in two smooth parts, that have thick bases. Piled on top of these are over ten flat pleated hats. The contrast between smooth and rough is clearly displayed.

CASE 2

Blinded Informant 2.

Vocal and sound description.

<https://m.youtube.com/watch?v=5LBQYTUlnqU>

Sound description of the sculpture, “Pieni utelias” (Small curious), Artist: Kaisu Koivisto 2015, 1.20s

Text description by deafblind person:

This sculpture portrays some animal. The animal is mainly made of a 3-4 mm thick metal rod, but its eyes are as if made of glass bead. The overall feel of the sculpture is net-like and cold. The animal stands looking attentively ahead following what happens in front of it.

CASE 3

Blinded Informant 3.

Vocal and sound description.

<https://m.youtube.com/watch?v=tetUL7XkAUA>

Sound description of the sculpture, Poika ja pallo (Boy and ball), Artist: Tarja Malinen 2013, 0.23s.

Text description by deafblind person:

A boy is sitting on the beach. He is wearing shorts. He has got a smooth metallic ball on his lap.

CASE 4

Blinded Informant 4.

Vocal and sound description.

<https://m.youtube.com/watch?v=MK2WBtOBwLo>

Sound description of the sculpture, “Tanssija II” (Dancer II), Artist: Harri Kosonen 2016, 0.47s.

Text description by deafblind person:

This fragile sculpture is like a metal wrapping that swirls upwards. The outside surface of the wrapping is smooth in a rough way but the inside is spiky. The wrapping is shaped as a tube that fits well inside a hand. Some parts of the sculpture extend above the tube-shaped wrapping, and above it there is a nob or a head.

CASE 5

Blinded informant 5.

Vocal and sound description.

<https://m.youtube.com/watch?v=wml1ZpGjxj4>

Sound description of the sculpture, “Nuotio” (Camp fire), Artist: Antti Keitilä 2016, 1.00s

Text description by deafblind person:

Five triangular wooden clogs, they are arranged in the base across each other, as a supporting construction. Five wooden pieces are sculpted bulgy as sweet potatoes. They construe the top part of the sculpture. The piece feels warm – it is probably made of lacquered wood.

Analysis and Discussion

The collection and analysis of the data was made by one of the authors who also participated in the workshop as an organizer and assistant. Although she is hearing and sighted she can be considered a “native” sensory ethnographer in this context. She has many years’ experience of working with deafblind people and through marriage she is also sharing a deafblind persons’ everyday life. As an interpreter of the deafblind perspective she comes as close as it could ever be possible for anyone not sharing this very particular condition. In her interpretation of this data she is therefore able to use her experiential and long term personal knowledge also in her role as researcher. The informants verbalized statements of their experiences give us only a tiny part of all the dimensions of the event, but through the interpretation of the researcher these are reflected

through the theoretical lens as well as through an overall understanding of the multisensory experience and multimodal communication of the informants.

As a frame for the text based description analysis we have used the Lederman & Klatzky (1987) hand movements of haptic object recognition model. This model has been extended by Akner-Koler & Ranjbar (2016, p. 4). In this article, we further developed the model to include also the notion of *Amount* and *Orientation*. For the vocalization and sounds we have utilized a qualitative content analysis based on the *Sounds produced*, *Means of sound production*, *Type of description*, *Pitch* and *Volume*.

Text Description

The deafblind informant who made the verbal and text descriptions was very professional in her way of writing them. The descriptions of the sculptures through the haptic sense give us a completely different perspective not available through vision. The informant's descriptions are compiled into the table 2.

	Case 1	Case 2	Case 3	Case 4	Case 5
Material	plaster	metal, glass	metal	metal	wood
Shape	flat pleated hat	portrays animal	ball	swirl, nob, head	triangular, a cross, bulgyh
Size, thickness	thick, flat	3-4 mm thick		Fits inside hand	
Amount	two, over ten				five
Temperature		cold			warm
Weight	heavy				
Texture	smooth, rough	net-like	smooth	smooth, rough way, spiky	lacquered wood
Orientation	above, thick bases, piled on top	ahead, following what happens in front of it	wearing shorts, on his lap	swirls, upwards, outside surface, above	In the base across each other, top part
Other, such as mental images	Hands get powdered with fine dust	Eyes are as if made of glass bead, animal stands, looking attentively	A boy is stitng on the beach	fragile, shape as a tube, wrapping	Supporting construction, as sweet potato.

Table 2. Deafblind person's text description according to the analytic frame.

The informant described different materials, shapes/forms and surface structure of all sculptures.

Also the thickness, the amount and the weight of the objects were expressed. In written text there were also descriptions of different parts of the sculpture and their relationships i.e. orientation to each other (swirls upwards). In addition, mental images were created by analogy (sweet potato).

The textual description might be repeated similarly later by other people, but sound reproduction are individual. The sound description captured a momentary experiential notion, experimenting with the sounds the informants could produce. In comparison, the text description took much longer time to produce and allowed the informant to read and correct the it over time. Next we will describe the sound descriptions.

Vocal and sound description

Informant 1 & 4 did not have any visual image of the subject matter of the sculptures, ie. they have been visually impaired since early childhood. Informant 1 produced sounds by using own voice and hands, sometimes at the same time describing the sculpture's material and surface texture and quantity. Informant 4 mentioned that the sculpture did not evoke any predefined real image when exploring it but the whooshing sound was influenced by the informants perceived mental image of a hollow pipe. Produced sounds included whispering sounds, building up of a storm which turns into a howling wind sound. The howl (storm) sounds like a meditative humming that is building up to a loud dramatic climax "a dead cry". These sounds produced by their own voices, blowing in and out, starting at a low, middle moving to higher pitch level (table 3).

One of the participants, informant 4, who is also one of the authors of this paper, has a formal training and education in music therapy. He also has a long background as a composer, song writer and singer with concerts in arenas such as the Finlandia Hall in Helsinki. He describes his artistic process of making the sound as follows;

Since I was not able to see the sculpture, I used my hands as a basis to explore and to create improvised sounds using my voice. Working from the base level of the sculpture, my hands moved around the shape upwards towards the top. As I was doing this, I also created my own improvised sounds through blowing and breathing heavily like a rushing wind sensation. At the same time as my hands explored the hollow windpipe-like structure, I started to create a vocalised variable humming sound which got louder and louder and increased in pitch level at the same time. This crescendo built up to a deathly cry at the end which was influenced by the sharp jagged shape of the sculpture at the top.

As Informant 4 described the shape of the sculpture, he synchronized his voice with the movements of his hands. The shape influenced the vocalising of the pitch level from low to high with a dramatic ending as the hands found the sharp jagged shape of the sculpture at the top. The informant did a creative, improvised sound scape, which was more varying and longer compared to some of the others.

	Informant 1	Informant 2	Informant 3	Informant 4	Informant 5
Produced sound	prrrr...prrrr hands rubbing, clapping hands	wwwww wuu ggrrr wo...of	mmmhmm h	whii...woosh howl...AAAH	clic...scr.. cluk,swish. whosh
Means of Sound production	voice, hands	Voice	voice	voice, blowing	hand, ring, mouth, blowing
Type of Description	material, surface texture, quantity	Dog behaviour	Person sitting holding a ball	shape	Campfire
Other such as pitch and volume	simultaneously		two pitch level	low, middle, higher pitch level	different level of volume

Table 3. Five informants' vocal and sound descriptions.

Informant 2, 3 and 5 had a clear and predefined mental image the themes of the sculptures, ie; of a dog, a meditating person and a campfire, as they have had vision before becoming blind. Informant 2 produced a dog sound by using own voice, and was able to relatively easily produce this because they were familiar sounds (had experience of hearing) thus imitating it was possible. The dog shaped sculpture is thus described by a dog like barking and exploring through sniffing (sniff) and growling (grr).

Informant 3 had an image of a person sitting down holding a ball in his hands. This is described by a "thinking, humming, meditating" sound. The meditative sound was relatively easy to produce in a simple and musical manner, producing two pitch levels. Informant 5 had a predefined image of a campfire and had had personal experience of being at a campfire before. The informant was touching the sculpture using hands while wearing a ring on the finger, thus creating a rustling and clicking sound effect. Wood as material is very responsive and you can feel the vibration. The informant was creating different sounds through the mouth such as clicking and a wind sound effect (blowing in and out). No vocalisation sounds were produced in this description.

Discussion

There are art forms that utilize voice and sound making as artistic expression. For example the expressive work of sound artist Alex Nowitz (Nowitz, 2010). Even if the participants in this study only partly belong in the artistic scene, many of them experienced making the sound descriptions as a process of making art. The performances were instructed by the born blind music teacher, educated at the Sibelius Academy, they were designed and thought through, rehearsed and performed sincerely. The participants also reported being empowered by the experience of coming over their shyness and trusting their ability to create new expressions by utilizing their voices in new ways.

The sound descriptions were later shown to hearing and sighted visitors in the Galleria Scultor, maintained by the Association of Finnish Sculptors. There visitors were blindfolded and taken to the described sculptures after hearing the sound descriptions, and they were asked to find the piece of sculpture described in each sound description. Especially the sound descriptions that included onomatopoeic clues were easy to detect, such as the sculpture of the fire or the dog.

In general, the sound descriptions were combinations of different creative hand and vocalised sounds which had different levels of volume. Three informants of five (2, 3, 5) had a clear idea of the subject, that is, clear image and a given name of the sculpture and the subject matter based on their haptic exploration and previous experience. Their sound descriptions were thus mimicking the sound of the subject. However, there is no agreed vocabulary of sound descriptions. Non-vocalized sound descriptions are individual, personal experiences based on touch and hand movements of the art work. When comparing to the description in written format, the words used have a certain learnt meaning and is based on linguistic grammar. A similar type of text could be produced by another person, because haptically we would pick up same kind of elements such as material, temperature, size etc. (See Gibson, 1966/1983; Lederman & Klatzky, 1987; Akner-Koler & Ranjbar, 2016).

In this study, we analyzed how sound descriptions inner experiences of haptic exploration (mental image of sculpture) were re-interpreted by own voice and body sounds, sometimes in combination with sounds made by touching the art work. These sounds describe the informants' instantaneous experiences as their hands touch one point of the object moving to the next point, discovering the material and size. They did not have a unified agreed tone symbol in use. The sound descriptions can be described as short, experimental and playful sound effects, that these informants tried out for the first time in their life. Only one of the informants was a musician. We

experience these sound descriptions as personal artistic productions of the informants, that were unique in themselves, but that may be related to on a general level.

Many of the informants extended their voice production to include adapted sounds, using also hand clapping and drumming and tapping on the sculptures. In this way they started a communicative process with the sculpture, where the sculpture was also participating in the sound making. The sounds were not only human but came also from the sculpture itself. If we understand the aesthetic experience as wider than only the distant visual or auditive experience, this way of experiencing may even enhance the aesthetic experience of an object. These informants have a bodily communication with the object that allows them to take it into their physical realm and “play it as an instrument” through a haptic aesthetic exploration (Akner-Koler & Ranjbar, 2016). This sense of play also triggered humoristic aspects and joy. It also gave possibilities to dwell with the art piece and to take time with it, to indulge in it and to participate in it.

This haptic aspect of the aesthetic experience is seldom generally available. This is also apparent in the poor vocabulary we have of tactile experiences (Mcpherson, 2009). We have many colour descriptions of various shades of red for example but not very many shades of softness or hardness. In the sound descriptions, the informants were able to “visualize” their experiences with intonations and volumes as well as multiple simultaneous sounds giving a kind of three-dimensional view of the sculpture. In this sense the sound descriptions were more multi faceted than mere words. The sound descriptions were describing the landscapes of the sculpture surfaces, giving time based narratives of the travel along the surface.

Conclusion

In this study, we analyzed six deafblind peoples' experiences of five sculptural art pieces and their textual and sound based interpretations. We found that the informants were able to cross over their sensory experiences from one sensory modality to another, as well combining modalities of expression. Thus, the informants found multimodal ways of expressing their experiences, utilizing also the sounds produced by "playing" the art pieces. Their haptic sensory modality proved to give enough multifaceted information for qualitative expression of an aesthetic experience.

When we, hearing and sighted people hear these sound descriptions or read the text descriptions of the sculptures, we have an urge to *see* the image of the pieces as this is an information channel that we are used to. We want to check what the "reality" looks like. However, deafblind people do not have this channel and are thus always constructing their mental image through separate pieces of information based on haptic experiences. What would an art exhibition without sound and visuals be like for hearing and sighted people?

For these Deafblind informants, an active interaction with art was made accessible through this workshop and the exhibition. This small experimental group, showed us how art can be experienced by different modalities than only the visual. The artistic sound descriptions make the sculptures accessible to the seeing and hearing population in a haptic based format. This type of sound descriptions could also be used in the context of art descriptions for blind and deafblind as an additional support to the textual/audio descriptions in art galleries.

In our future research, we aim to study this setting including also video recordings, to be able to analyse body language, gestures and the embodied interaction with sculptures. Phonetic analysis of vocal sounds, aided by video analysis of the informants' hand movements will give a deeper understanding of the movements of the hand and the sound of the result as description.

Acknowledgements

We would like to thank all the informants of the research as well as the artists who made the art pieces; Saana Murtti, Kaisu Koivisto, Tarja Malinen, Harri Kosonen, Antti Keitilä and the photographers of the artpieces shown on the website: Tuija Wetterstrand and Harri Kosonen. We would also like to acknowledge the Finnish Deafblind Association and their website where you can find all the audio video and text descriptions.

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