

‘Come sing, dance and relax with me!’

Exploring interactive ‘health musicking’ between a girl with disabilities and her family playing with ‘REFLECT’
(A case study)

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This case study looks at how one family experienced the musical and interactive tangible REFLECT, which was developed for the RHYME project (www.rhyme.no). One of the aims of RHYME is to develop resources that have the potential to promote collaboration among family members when a child has disabilities. Through processes related to *health musicking* (Bonde, 2011; Stensæth & Næss, 2013; Stige, 2012), the RHYME project fosters music activities that can enhance the quality of life within the family. REFLECT, which is a mobile and wireless interactive tangible installation, offers the players possibilities to select and play with music they know and to play together with others, and thereby *reflect* on their (inter) actions (Andersson, Cappelen & Olofsson, 2014). It consists of several interactive tangibles of different sizes that look like toys of different shapes, some of which evoke animals and/or flowers. One of the tangibles is a lumber-like soft thing that one can play with on the floor, hold in your arms, or over the shoulder while dancing. According to the girl in this presentation it looks like a whale with a large belly. The other REFLECT tangibles are accompanied by laminated photos with RFID tags,¹ and to activate the music, the participant must scan the whale’s belly and pointing its trunk with RFID-reader (see picture 1):

Six different kinds of music excerpts were programmed into REFLECT at the time of the case-study family’s interaction with it, namely the songs of *Mamma Mia*, *Kaptein Sabeltann*, *Gimme Gimme*, *Disco*, *Dyrene i Afrika*, *Fairytales*.² The music often resurfaced as loops of melodic or rhythmic motives from the pre-programmed music. By manipulating the tangibles in certain ways, the family could also improvise, both musically and with each other.

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- 1 RFID is an acronym for Radio-Frequency Identification, which relies upon small electronic devices that consist of a computer chip and an antenna. Like the magnetic strip on the back of a credit card, the RFID device provides a unique identifier for that object.
 - 2 Karette Stensæth took this photo, which is not of the family in this study.



Picture 1: Pointing REFLECT's trunk with RFID-reader against the REFLECT RFID-tag.²

The present analysis engages with the issues that emerged based upon the family's exploration with REFLECT. Data were recorded via video observations of the family while they explored REFLECT and an interview that was done with the family immediately following their second experience with the platform. The video observations are extracted and collected as a narrative below.

The research question in this text is as follows: *How does one family experience REFLECT, and how might their musicking with REFLECT potentially enhance their quality of life?*

Before I look at the core concept of health musicking, I will supply a brief overview of the RHYME project and REFLECT. The empirical part of this study will elaborate upon the methods and results, while the discussion and conclusion will apply certain theoretical perspectives to the whole enterprise.

³ Benny Andersson and Björn Ulvaeus wrote the songs *Mamma Mia* and *Gimme, Gimme* and ABBA performed them. Terje Formoe wrote *Kaptein Sabeltann* and Thorbjørn Egner wrote *Dyrene i Afrika*. The two latter are renowned Norwegian children's songs. Fairytale is the Norwegian 2009 Eurovision Song Contest winner written and performed by Alexander Rybak.

The RHYME project:⁴

RHYME is a five-year interdisciplinary research project (2010–2015) financed by the Research Council of Norway through the VERDIKT program. Its aim is to develop Internet-based, tangible interactions and multimedia resources that have a potential for promoting health and life quality. The project specifically addresses the lack of health-promoting interactive and musical information and communications technology (ICT) for families with children with severe disabilities. RHYME explores a new treatment paradigm based on collaborative, tangible, interactive Internet-based musical 'smart things' with multimedia capabilities. Within the project, these interactive and musical tangibles are called 'co-creative tangibles' (CCTs). The goal of RHYME is twofold: (1) to reduce isolation and passivity, and (2) to promote health and well-being. The RHYME research team represents a collaboration among the fields of interaction design, tangible interaction, industrial design, universal design and music and health that involves the Department of Design at the Oslo School of Architecture and Design, the Department of Informatics at the University of Oslo and the Centre for Music and Health at the Norwegian Academy of Music. The project encompasses four empirical studies and three successive and iterative generations of CCTs. The media is developed in collaboration with the Haug School and Resource Centre, the children and the families. Its user-oriented research incorporates the users' influence on the development of the prototypes in the project. The users include from six to ten families who have volunteered to participate, and the children with disabilities in these families range from seven to fifteen years old. The children vary considerably in terms of behavioural style, from very quiet and anxious to cheerful and rather active, but all of them become engaged in enjoyable activities when these activities are well facilitated for them. The most extreme outcomes of the variation in behavioural style relate to disability conditions, and mostly those within the autistic spectrum, which applies to four of the children. These conditions include poor (or absent) verbal language and rigidity of movement. Also, the children's mental ages range from six months to seven years, and their physical handicaps range from being wheelchair dependent to being very mobile. The Norwegian Social Science Data Services approved the RHYME project in February 2011, provided it would gather, secure and store data according to the standards of ethics in Norwegian law.

Defining 'health musicking'

As a notion, *health musicking* is appearing more and more frequently in the field of music and health (Bonde, 2011; Stensæth, 2013; Stige, 2012). The first part of the notion, *health*, refers to those factors that support human health and well-being rather than those that cause disease or illness.⁵ Halstead (2013, p. 75) has assembled many definitions of music from health theorists to broaden the understanding of health in music:

4 The section inside the frame below is similar in all of the RHYME articles in this anthology, Music, Health, Technology, and Design edited by Stensæth.

5 Antonovsky's (1987) notions of health as a personal experience (and an ongoing process) rather than a biomedical state inspire this orientation. Positive psychology also informs the present perspective on health by drawing attention to the nurturing of life's positive aspects in tandem with the treatment of disabilities or illnesses (Seligman & Csikszentmihalyi, 2000)

Health is a concept emphasised variously as a ‘quality of human interaction and engagement’ (Dreier, 1994, cited in Stige, 2002) or ‘a quality of human co-existence’ (Kenny & Stige, 2002, p. 24), a ‘performance’ of processes by which ‘self’ is realised into the world – mentally, physically and socially (Aldridge, 2005) while musical experience has been likened to an ‘immunogen behaviour’ – that is, a health-performing practice (Ruud, 2002). This in turn has widened the scope of music and health studies to include any mode of musical participation that holds the potential to promote well-being.⁶

This series of definitions paints a broad picture of music’s potential as a mentally, physically and socially meaningful health resource. In the present study, I would align music as a family activity as well, following Small’s purposely active concept of *musicking* (1998). Small advocates for music as a social *doing* – as a way to ‘take part’. Andersson (2012), one of the creators of REFLECT, lists the main ‘doings’ in RHYME as playing, listening, exploring, composing and collaborating. These creators of the co-creative tangibles (CCTs), in fact, view them as active and independent partners in the given collaboration (Cappelen & Andersson, 2011, 2014). They even describe REFLECT as an ‘improviser and a co-player’.⁷

In the present study, then, health musicking refers to the ways in which one particular family creates social musical activities with health prospects as they explore the musical and interactive tangible known as REFLECT.

REFLECT⁸

Mobile and wireless, REFLECT consists of three new hardware platforms that were developed on the basis of ORFI⁹ and WAVE¹⁰ to test different concepts and combinations of hardware and software. It is programmed in SuperCollider.

Technology

REFLECT includes the following input and output devices:

- iPhone/iPod (as computer)

6 Full references in this citation are found in Halstead (2013).

7 I will return to this personification later.

8 See Cappelen & Andersson (2014) or elsewhere in this volume for the design process of REFLECT. See also www.rhyme.no.

9 See Stensæth & Ruud (2014), Cappelen & Andersson (2014) or elsewhere in this volume.

10 See Stensæth (2014), Cappelen & Andersson (2014) or elsewhere in this volume.

- RHYME jDevice card to control sensors and actuators
- RFID reader to make musical choices
- 5 velvet star-shaped soft-touch sensors to play and manipulate sound dynamically
- 2 bend sensors to play and manipulate sound dynamically
- RHYME LED control card
- 24 LEDs that are integrated in the textile communicate interaction response and provide rhythmic visual pulses
- Speaker

Additionally, REFLECT includes the following technology:

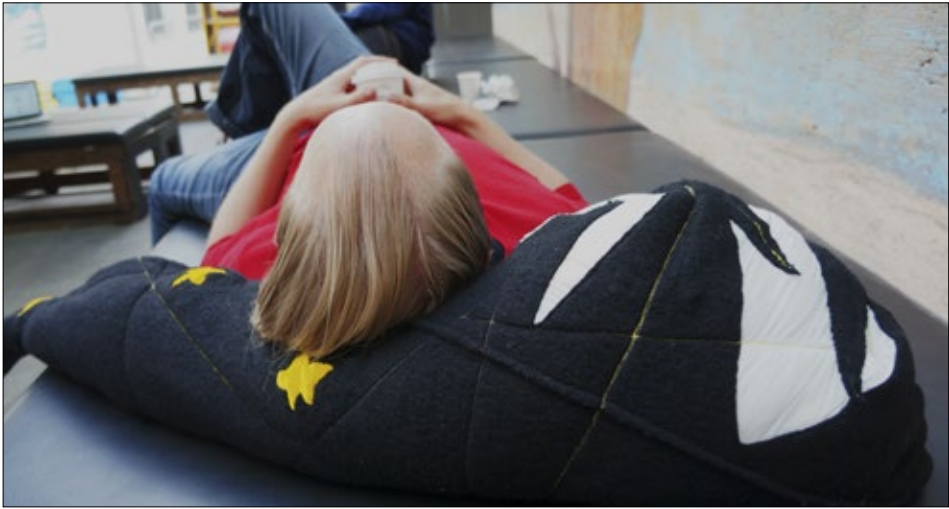
- SuperCollider as the musical programming language (real-time sound synthesis)
- Arduino as programming language to control the jDevice card
- 6 musical scenes (at present; see above)
- 50 RFID tags with associated physical objects and dynamic sounds

REFLECT invites its users to play and be active. One can dance to the music, explore it by touching (picture 2) or rest and just listen (picture 3):¹¹



Picture 2:¹¹ *Playing with the REFLECT (belly)*

¹¹ Photographs courtesy Birgitta Cappelen.



Picture 3: *Resting and listening on REFLECT*

About the data collection and the people involved

The REFLECT experiments took place on two Saturdays in March 2013 at Haug School and Resource Centre, located outside Oslo, where several rooms were prepared for the testing of many CCTs.¹² REFLECT was placed in one of the school's music rooms, where the piano, chairs and musical instruments had been removed. To create a 'home-like' setting, the room was supplied with furniture, including a big blue sofa and a broad, square, single-coloured woollen carpet, on which the various pieces that comprised REFLECT were placed. All room activity was recorded using two video cameras that were fixed to the walls. In addition, a member of the research team remained silently in the room, using a third, hand-held video camera.¹³ The extra camera supplied broader, more comprehensive data.

The family in the present study – child (I will call her Petronella), mother, father and grandmother – attended testing on both Saturdays. Petronella is a fifteen-year-old girl with Down syndrome and mental retardation. Among the participating children in RHYME, she was perhaps the most able manipulator of REFLECT, and

12 Essays about the testing of ORFI, the prototype of the first CCTs, and the testing of WAVE appear elsewhere in this volume (see Cappelen & Andersson (2014), Stensæth & Ruud (2014) and Stensæth (2014)).

13 This person did not know any of the children or adults who entered the room and was instructed to focus upon relatively minor movements or facial expressions that the fixed cameras might have missed.

this fact, together with the rich interview content from the family, determined her usefulness to the present case study.

Petronella is a fun girl. Next to baking and cooking, she loves music and dancing the most. She speaks in two- to three-word sentences and uses some sign language to communicate as well. She is social with one person at a time (whether young or old) but can be shy in groups. When compared to normal development, her cognitive level is below five years of age.

The first time Petronella came to the testing with her mother and father, they stayed in the room for about fifteen minutes. The second time, the father did not come but her grandmother joined in, and they stayed in the room for over forty-five minutes.

The testing proceeded as follows: One person from the research team welcomed the family but offered few instructions as such. He showed them what they could do to produce a response from REFLECT and told them that he would be available right outside the room if they needed technical assistance. Other than this, there were no rules given – the family was simply told to 'go ahead as they liked' and left alone.

As a member of the research team, I wrote an observation in relation to the collected video recordings of the family after watching them in their entirety four times. In order to control my subjectivity here (I already knew Petronella from elsewhere), I tried to describe the main events as factually and neutrally as possible. Another member of the research team did the same. Based on the main characteristic events that were included in both observations, I produced a final interaction narrative.

The interview was held right after the family's second interaction and therefore includes only Petronella, her mother and grandmother. Coffee, tea, cookies and buns were served to make everyone feel comfortable and relaxed. One member (H) of the research team conducted the semi-structured interview; he did not know any of the participants from elsewhere. H followed an interview guide, which began with the following question: How did all of you, as a family, experience REFLECT? H followed up by asking whether REFLECT 'worked well' for the family or not, and whether they could imagine having REFLECT at home. Would it promote interaction and well-being within the family? Lastly, H asked whether they had any suggestions for improving REFLECT to suit them best.

The interview was audio recorded, and I transcribed it for the purposes of the present study. Following theorist Steinar Kvale (2004), this process produced a hermeneutic interpreting approach that highlighted both the depth and the diversity of the family's responses.

Results

The following passages include the narrative of the video observation and the interview with the family. The narrative relates mostly to the events that took place on the second Saturday, because the family members stayed in the observation room for a longer period of time and showed greater variation in their exploration than on the first Saturday.

The narrative of the video observation

Petronella and mother enter the music room, followed closely by grandmother. The three of them find a room with a sofa and large carpet where some of the toylike things are. There is a basket filled with more things on one corner of the carpet. Petronella goes towards the things on the carpet. The mother follows her, and the grandmother takes a seat on the sofa. The mother sits down on the floor, close to grandmother and in front of Petronella.

Petronella remembers what to do from the first Saturday – she picks up the (laminated) photo and holds it in front of the thing that resembles the shape of a ‘whale’. Immediately, a loop of the song ‘Kaptein Sabeltann’ starts to play. Petronella smiles and moves her body from side to side, as if dancing. Mother and grandmother smile too ... Petronella does this over and over again while mother and grandmother watch and comment upon what Petronella is doing. Then mother picks up the maracas from the floor and plays along ... Grandmother picks up a small drum and taps it a little ... Petronella changes the music to ABBA’s ‘Gimme, Gimme’, then tries ‘Dyrene i Africa’, both of which are played in small melodic loops ... Petronella grabs mother’s maracas and tries to accompany the music rhythmically.

Petronella continues to explore other musical scenes ... When Petronella finds ‘Mamma Mia’, the whole song plays. Petronella stands up. She picks up the ‘whale’ and pulls its strap around her neck and starts to play on it as if it were a rock guitar. Petronella is very enthusiastic and happy, and she starts dancing to her own playing. Mother gets up and starts to dance as well. Petronella looks at mother and dances while holding the ‘whale’, as if she is pretending to be a rock star on stage ... Grandmother smiles and plays the drum from the sofa to accompany their dancing ... Mother and Petronella dance while singing the whole ‘Mamma Mia’ song together.

Grandmother puts the drum away ... Mother and Petronella move towards each other while dancing and singing ‘Mamma Mia’. They seem to negotiate with their bodies, not with words, to choreograph the dance ... Both of them smile, and it is obvious that they are having fun and that Petronella is very excited ...

The sound is loud ... Grandmother resigns herself and leans back on the sofa and watches Petronella and mother silently. It starts to get too much for her, and grandmother tells them to turn down the volume ... Mother does not know how to do this and asks for help from the assistant from the research group outside the room ...

Petronella picks up another photo and changes the musical scene to 'Fairytale' ... The music is not as loud any more. Mother starts to talk to grandmother about REFLECT ... Petronella sings ... Then grandmother and mother sit on the sofa and look at Petronella without saying anything. Petronella sits on the floor and listens to the music while singing along ... Petronella leans back and lies down on the floor. She picks up another toylike thing and cuddles it ... She relaxes ... Grandmother asks for a break and says she wants to leave the room ...

The interview

In the interview, the family members talked about their experiences with all of the CCTs they had explored during those two Saturdays in March. Those parts of the interview where they talked about REFLECT constitute a significant dialogue in and of themselves. This extract follows:¹⁴

H: So, how did you experience REFLECT?

Mother: The session was very stimulating – she [Petronella] seemed immersed ...

Grandmother: The thing [REFLECT] was fun – it was good that it had so many variations!

H: Do you think it worked well for you?

Mother: Yes, but it had too many [variations] ... that she [Petronella] started 'Mamma Mia' and kept on playing that tune just made her want to dance ... this hindered the interaction part ...

H: So ... 'Mamma Mia' ...

Mother: Yes, it destroyed a bit ...

H: So, is it right to say that you feel that 'Mamma Mia' makes it more exciting while at the same time it destroys? Why do you say 'destroy'?

¹⁴ Petronella says nothing during the interview; she is busy eating buns and relaxing in the background.

Mother: Yeah [laughs a little] ... maybe because the thing played the whole song ... and not just fragments or loops, which was the case with the other songs that were programmed into REFLECT ...

H: Yes ...

Mother: And then it becomes more like she needs to do something else to continue her exploring, but here the 'Mamma Mia' tune just played on and on and on – and as long as this tune is on in the background, her entire attention is focused on that ... Yes ...

H: Was it the dancing ...?

Mother: Yes ... then we danced – we had a disco – then those other things were not interesting for her anymore ... But we had fun [laughs] ... it is fun to dance. Yes, we had fun ...

Grandmother: You looked so great! I was impressed. Very creative and fun ... the way these things were made ...

Mother: But as a situation for interaction, we do this type of dancing anyhow ... We do not need more of that, in a way ... That is why I say 'destroy' ... Yes.

Grandmother: But then again you are a family with a lot of music. Not all families have so much music ... and do the things that you do ...

Mother: Mmm ...

H: Was REFLECT different this time than the time before?

Mother: Yes, there were fewer things this time, and the fact that some of the things were put into a box today, that was good. This afforded more activity instead of being met with chaos like last time, which does not invite activity ... so this was good!

Grandmother: Ahhh [nods her head].

Mother: The Dragon! [a name Petronella and her mother gives one of the CCTs] It activated us ... But again, I missed being able to regulate the volume of the things ... especially after a while ...

Mother: But I saw that Petronella found it exciting to do repetitions – whereas, for us, repetitions made us go nuts ... those two to three bars, over and over again ... but she could listen to the same loop over and over again ... I think she could go on forever ... that is good for her, but not for the interaction ...

H: How did you explore REFLECT?

Grandmother: Tried out one thing at a time ...

Mother: Some of them did not work? They did not react ...

H: Yes, I noticed that you missed the sound coming from the 'flower thing'?

Mother: Yes, because last time there was classical music coming from that one ... It was so wonderful ... now there was another sound ... a terrible sound! Created a break in my expectations coming from a flower ... Completely wrong ... Petronella was not so interested in that flower last time either ... do not know why ...

Grandmother: I guess she wants to have music she knows ...

Mother: Yes ...

Grandmother: What is most fun for her ... that is, when she moves ... then she smiles and is satisfied ... and is happy ... When mummy joins in and dances with her, it is most amusing for her!

H: So, does this mean that the ability to control and influence the programming of the things' content would be important to you?

Mother: Yes, to be able to choose what to put in and what to take out ... I would, for instance, take out the whole tune of 'Mamma Mia' ... she can play that on a CD ... I think these things should invite her to do something else ...

H: So there were two things you want to avoid here – one is that the thing plays the whole tune, and another is that it is 'Mamma Mia'?

M: Yes, and to be able to regulate the volume.

Grandmother: Yeah ...

Mother: It is exciting with REFLECT, not knowing what is coming for new sounds ... 'Wow! What was that?' To go together ... Maybe the grown ups were most interested in this part? But I do believe that Petronella, after a while, would be interested too ... She just needs to get used to ...

H: It is exciting that what you [grownups] think is boring, Petronella finds enjoyable. Also, that there are things here that you find exciting, which Petronella, with time, might be attracted to ...

Mother: Yes ... Petronella normally explores for just five minutes ... then she returns to the familiar ...

Grandmother: But this [REFLECT] can also become familiar for her too, can it not?

Mother: Yes. That is true ...

H: If you had REFLECT at home, what would this mean for you and your family, and what should be changed in order for REFLECT to become optimal for you?

Mother: It would be nice if the things could fit into a room ... but then this disco should not supersede other things to do ... At home, she would have to choose one of the songs and put the other song away ...

Grandmother: [Laughs] And then Petronella would beg you – 'Mamma Mia! Mamma Mia! Mamma Mia! Mamma Mia!' – until you gave in ...

Mother: Yes ... but I mean, with the tune 'Dyrene i Africa', the whole tune was not played ... and then she did not want to dance ... instead she explored ...

Grandmother: Mmm [nods her head].

Mother: The ability to regulate the programming is brilliant! For her [Petronella] to explore, maybe it is good to have more neutral songs? But, then again, for her to get interested, it must be familiar first ...

Grandmother: Mmm ...

Mother: Also, at home, REFLECT must compete with DVDs, PC, picture books. I am not sure whether we need REFLECT ...

Grandmother: I think it would be good to have at home. She likes to touch it – it is nice to touch. And she just loves things with music ... Good to have something to hold that she can send around ...

Mother: Well, our need is for her to be active on her own, over a longer time ... As I said, she is easily attracted to music and certain songs ... but she needs variation, new songs ... Maybe music could be used to get her interested in other things? Also, I was wondering whether it would be possible to think of REFLECT as a jigsaw puzzle ... where the fragments of songs could be put together as one whole song ... then she could be stimulated cognitively too?

H: Wow ... Any other aspects connected to REFLECT that you want to comment upon?

Mother: Yes, hygiene ... If Petronella puts the thing's part into her mouth ... which she will ... Also, as we have seen during our exploring of the other things in RHYME, the microphone effect is important for Petronella, to promote her voice – and to do this at home, in a freer setting. . . not so much pressure ...

Grandmother: I am so grateful for this project [RHYME] – that someone explores this with the intention to enhance the everyday life of these children and families ...

Mother: Petronella has been looking forward to the testing of these things! A good sign ...

H: Thank you so much for taking the time to do this interview! This has been very helpful!

Short summary of the main findings in the narrative and in the interview

The narrative describes a family having fun and enjoying themselves while exploring REFLECT. Obviously, the child is very physically engaged, especially when she hears *Mamma Mia* and starts to dance. During the time they spend in the room, the family moves through various moods together, from curious and exploratory, to

energised and motivated in their musicking, to calm and relaxed at the end. The narrative also describes how the family members relate differently to the process of exploring: the child takes the lead and the mother and grandmother mostly follow along, perhaps in the interests of recognising and supporting the child's initiative. Their interaction becomes more mutual later on, when child and mother share the initiative in the choreography of their dance. The grandmother tires after a while and prefers to watch the dancing instead.

In the interview, the family members stress the importance of having things at home that inspire them to interact and have fun together. They need, as another mother participating in RHYME said to me (see Stensæth, 2013), 'to have things to do – together and over time – things that are easily enjoyable and meaningful'. These family members, on the other hand, ask for things that can activate Petronella on their own. They explain that, in her playing and exploring, Petronella is very dependent on other family members to become activated and keep her interest up. They do not always have the time and energy to help her, however. Additionally, Petronella's mother wants things that will allow Petronella to learn and develop. Ideally, says the mother, REFLECT should be programmed so that Petronella's abiding interest in music and dance will lead her to other types of stimulation, especially those that could enhance her speech and cognitive development.

Discussion

This passage discusses how the results of the study in relation to the research question stated above. It certainly appears that this family had many meaningful musicking experiences with REFLECT, from inquisitive tangible exploring with sounds, to excited singing and dancing, to relaxing while listening to music. While there might be many ways in which this family would benefit from having a media platform such as REFLECT at home, can we truly say that it would enhance their quality of life? Before we respond to this last part of the research question, we must revisit the various results deriving from the two data sources in more detail.

Together, the narrative and the interview paint a broad picture of this family's experiences, but the latter provides the most compelling insight into the interaction. Take, for example, the moment when the mother and the daughter sing and dance to *Mamma Mia* while the grandmother applauds them. If we work from the narrative alone, we might have the impression that REFLECT afforded a wonderful musicking opportunity for mother and daughter to share. But the interview

reveals that the mother in fact lamented this REFLECT-inspired dancing, because they often do that sort of thing at home already, and they 'do not need any more of it', as the mother puts it. It is also clearly difficult for the family as a whole to find *one music* and *one activity* that are 'right' for everyone at once. What Petronella finds interesting and fun to do, and to listen to, is different from what the mother and the grandmother want – while Petronella wants ABBA, the mother prefers classical music, and the grandmother, no music at all. It thus becomes challenging to create what musicologist Charles Keil (1995) calls a 'sameness of experience'. Keil explains that people use music to form their own 'idioculture'. This means that it can be challenging for people who are formed by different types of music to experience the same when they listen to the same music. In this study, the conditions that hinder the cultivation of this sameness of musical experience are unique, in that they go beyond simple intentions or musical preferences. Because Petronella faces the world in a manner that is different from and in a way narrower than the rest of the family, it can be difficult to establish an ongoing interaction with her. In the interview, the mother confirms the challenges associated with her daughter's limited ability to sustain interest in other than a few favourite activities for a prolonged duration. She says that it is also hard to keep Petronella from doing the same thing, over and over, which is how she experiences Petronella's dancing (or 'disco', the mother calls it). Therefore, to enhance their quality of life in particular, the family would need to aim their musicking with REFLECT towards *the art of staying within an interesting here-and-now for all of them at the same time*. I will elaborate upon this in what follows.

One reason why this type of 'conflict' or challenge occurs is that personal interests are fundamentally incompatible, and, as mentioned above, Petronella's life world is very different from the life worlds of her mother and grandmother. We must therefore try to extrapolate some of the ways in which REFLECT might become a means of health musicking for each of them. Ansdell (2013, foreword) says, 'To understand the ways in which music helps is also to understand how we relate to it, step into it, love it, share it – and how it still remains central to human flourishing'. We must, in other words, explore the what, why and how of music's meaningfulness in tandem with the REFLECT platform for each individual in turn, with a particular focus on Petronella.

Petronella's relation to music needs to be understood in the context of her cognitive level, which is that of a five-year-old. Although she has fifteen years of life experience, Petronella is still a little girl with a little girl's desires and behaviour patterns – her concentration drifts; she is easily diverted; and she loves to do fun things or listen to the same stories again and again. This means that we need to

understand Petronella's actions and intentions from the perspective of a young child. In the following I will comment upon this point by referring to Vestad (2013) and her recent doctoral dissertation on music and children in preschool.

Vestad (Ibid.) says that young children's ways of relating to music are perhaps best framed as 'strategies of participating'. In fact, Vestad observes that the children manifest a diverse set of strategies for participating through music, which she describes as follows: *doing, integrating, singing, moving, playing, listening and playing with*.¹⁵ Petronella applies some of these strategies while inviting participation from her mother and grandmother as she explores REFLECT. By playing *Mamma Mia*, for example, she invites her mother to dance and sing along with her.

Vestad (2013, 2012) also observes that small children tend to approach music with an instinctive joy and celebrate it through movement. Very often, they prefer particular songs as well. These tags – 'joy', 'movement', 'celebration', and 'favourite songs' – characterise Petronella's relation to *Mamma Mia*, a favourite song that brings her joy and makes her want to move. When she and her mother began to choreograph a dance to it, in fact, the scene is intensified, as if they – to borrow Vestad's words – 'celebrate it through movement'. The grandmother's supports this observation when she says:

What is most fun for her ... that is, when she moves ... then she smiles and is satisfied ... and is happy ... When mummy joins in and dances with her, it is most amusing for her!

Another aspect that explains why Petronella finds REFLECT attractive to explore is its tactility (which, of course, resonates with her developmental level). Her grandmother says:

She likes to touch it – it is nice to touch. And she just loves things with music ... Good to have something to hold that she can send around ...

As we can see, Petronella both explores and plays with REFLECT. She even uses her imagination: at one point, she picks up the 'whale' as if it was a guitar and pretends that she is playing in a band. Her mother thinks that it is the music that motivates Petronella to touch the CCT. It seems important in terms of Petronella's specific interest that the music, as well as the shape and the material of REFLECT, appeals directly to her imagination, her emotions and her sensory apparatus – in particular, the vestibular (balance) and the tactile faculties.

¹⁵ Vestad here quotes Campbell (2010).

To put her body in the centre of the event is not confined to small children alone. We have all experienced difficulty in holding ourselves back when we hear certain types of music: we simply *must* move, dance, nod our heads or stamp our feet to the beat (Ruud, 1997). Music is, above all else, a nonverbal experience that speaks directly to our body. However, for Petronella, the physical effect of musical activity is even more profound. Bonde (2009) observes that, for children, 'music and the body are one' (Ibid.). Later on in life, the psychological effects of the music will become more prominent, but we always feel music as much as we think about it: 'It is impossible to avoid that a sound evokes physical and psychological effects simultaneously' (Bonde, 2009 p. 68).

Another aspect that could explain Petronella's relation to music, is her diagnosis. Two comparable studies done by Johannessen (2013) and Stensæth & Næss (2013) involve grown ups with Down syndrome. Both indicate that these people often seem to connect to music in certain ways, and sometimes in ways that are similar to those of small children. *Joy/fun/celebration*, which Vestad found to be specific for young children's relation to music, is for example a prominent category in these studies too. Johannessen (2013) found, additionally, that her informants preferred dance band music, which she explains through the fact that its lyrics and melodies are typically easy to pick up and sing along to. Also, adds Johannesen, a dance band concert swiftly becomes a joyful community of enthusiastic audience members, which would appeal to people with Down syndrome, just as it would to others. For them, dance band concerts are a means of connecting with other people who search for the same types of joyful experiences as they do.

In Stensæth & Næss's study (2013), which is a study about a rock band for people with and people without disabilities, the members underline fun as most important reason for attending the band. One of the leaders (a music therapist) expresses the following in an interview:

Probably the band wouldn't have existed without the fun! Because that is what it is: it is great fun to play in RR (the band)! We laugh and cry, but we laugh the most!

One of the members with Down syndrome links his music-related joy to situations that are especially memorable – in this case, concerts where the audiences applauded and sang along and danced to the band's musical performances. Performativity is crucial here, as a mode of communication – this grownup band member memorably compared his participation in these concerts with giving people in the audience 'musical flowers'. For him, that is, this form of contact with the audience generates 'social capital' (Stige & Aarø, 2012, p. 102). Through the connection established in the concert setting, the

crowd before him gives him 'high levels of emotional support' (Ibid., p. 115). This example indicates that recognition from others enables the fullest participation for him as a person with Down syndrome, who experiences a feeling of inclusion and of his part in something bigger than himself.

The latter is not an aspect that is only typical for people with Down syndrome. DeNora, who studies how we all relate to music in our everyday lives, links music to situated memories. She says:

Music moves through time, it is a temporal medium. This is the first reason why it is a powerful *aide-mémoire*. Like an article of clothing or an aroma, music is part of the material and aesthetic environment in which it was once playing, in which the past, now an artifact of memory and its constitution, was once a present (DeNora, 2000, p. 66–67).

This author means it is possible to view Petronella's way of relating to REFLECT in a similar fashion, which means that she links ABBA's music to situated memories. However, Petronella's stage is at home, in the living room or kitchen or wherever the family gathers for a (disco) dance. The audience is her family, and anyone else who might be visiting. Home is where she invites people to sing, dance, and relax with her. The fact that her family responds has made dancing into a precious and memorable family activity.

Apart from her request for more classical music in REFLECT, the mother and the grandmother do not say much about the what, why and how of music in relation to constructive family collaboration. In general, they seem to consider REFLECT as a means of enabling Petronella's interaction with them and the rest of the family but in new ways. The mother says that through the use of more 'neutral music', Petronella could be engaged in further learning and development. Because the mother has intentions regarding REFLECT that are independent of Petronella's, the girl's dancing makes her feel conflicted. On the one hand, she wants to validate her daughter's desires and admits that it *is* fun to dance with her. On the other hand, she fears that the REFLECT dancing is destructive for Petronella, in that it reinforces her existing behaviours without inspiring anything new. She therefore wonders whether Petronella's fanatical interest in ABBA and *Mamma Mia* might hinder her creative interaction with other people and other aspects of REFLECT. The mother therefore advocates for other types of music for the platform – ones that might stimulate other types of family activities than dancing.

The mother says that for REFLECT to be most useful to them as a family, it should not compete with other fun activities, such as DVDs, PC and picture books, which

Petronella already finds very attractive. Rather REFLECT must engage Petronella and her family differently than these activities but with the same (or more) pleasure. Understandably, it is not easy to respond to such a request. However, in general we could say that to suit a range of family needs, a media platform such as REFLECT should allow each family to program it in his or her own way, so that their activities and collaborations would generate 'qualitative and meaningful here-and-now experiences that in turn might comprise a 'provider of vitality' (Ruud, 2010; Bonde, 2011) and thereby enhance the family members' feelings of bonding and belonging. With this enhancement, REFLECT might represent a useful tool in the aesthetic home environment, one that has the potential to enhance the quality of life in the family.

Conclusion

Again, this study's research questions were as follows: *How does one family experience REFLECT, and how can their musicking with REFLECT potentially enhance their quality of life?*

Although the results discussed here reveal that the family members do not share existing intentions or *interact* in the sense of 'experiencing sameness', they do manage to *co-act* in a consequential fashion. They realise a moment of 'co-musicking', so to speak, becoming active and having fun simultaneously despite the fact that they do not share intentions or experiences as such. Nevertheless, REFLECT clearly represents a means of deliverance from the problems of everyday life just by allowing the family to be in a better mood. In short, REFLECT vitalises these participants as a family, and *vitalisation* should be included among REFLECT's potentials regarding health musicking as an enhancement of life quality. In this regard, this study correlates with the studies of Stensæth & Ruud (2014, 2012) and Stensæth (2013) in which it is found that vitality incorporates the physical *stimulation of movement and basic senses* like hearing, sight, touch and the kinaesthetic, proprioceptive and vestibular senses. Vitalisation also encompasses mental stimulation through its promotion of a sense of *mastery*, especially for Petronella, and its strengthening of a sense of *agency* for the whole family. Last but not least, vitalisation relates to the feeling of having fun, both by oneself and in the company of others. If REFLECT affords vitalisation in these various ways, we might anticipate that the next generation of CCTs could more directly address strategies of participation for the entire family. Herein reside REFLECT's potentials for

building companionship and strengthening the family as a micro-community joined through intimacy and the shared cultivation of memorable and joyful experiences.

To adapt the programming of REFLECT to fit the intentions and desires of these family members, then, we would want to customise the music selections by including both familiar and unfamiliar songs. A microphone would also allow Petronella to interact with the platform and the musical selections differently through speaking and singing. In general, the REFLECT testing time was too brief to supply a proper overview of the platform's potentials. Testing in the home setting, as opposed to the school setting, would provide broader and trustworthier data as well. What we did learn here, however, is that Petronella readily took the lead in the exploring and seemed to enjoy REFLECT the most. Her initial attempts to engage her mother and grandmother represent a very hopeful start for a platform with a host of possibilities.

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