Acknowledgements
This dissertation would not have been possible without the help of the healthcare organizations and professionals that participated, my supervisors, colleagues, researchers such as: psychologists, special need experts, acousticians, biologists, and physicists. But also daily caretakers, medical personnel, programmers, students, people with and without disabilities, designers and architects, artists and performers, people who are really sound annoyed and people who are infatuated by it. Hereby, I want to thank everyone who has contributed to the realization of this dissertation. I feel honored that I have worked together with you all in this project where we build bridges between two disciplines that seemed so far apart: Special Needs Care and Artificial Intelligence. When we embarked on this adventure, I did not expect that its impact would be so large and the support would be so overwhelming.

My gratitude goes to ZonMW for granting the subsidies that made this research possible, and the healthcare organizations that participated (Talant, Koninklijke Visio, Vanboeijen en ‘s Heerenloo Zorggroep). Without the intensive cooperation with the practice, this project would not have been successful. Special thanks go to Bart Schoppers (Talant) and Roel Menke (Visio). Both have been a recurring theme in this project and a source of inspiration and motivation. Sometimes I still refer to you as the godfathers of my research. Also, I want to acknowledge Ruud Tap (Talant) and Bas Bijl (‘s Heerenloo) for their commitment and efforts in making sure that our projects were successful.

Furthermore, I want to thank the members of the reading committee (Prof. dr. D. Botteldooren, Prof. dr. P.J.C.M. Embregts and Prof. dr. H.J.M. Janssen) for reviewing (and approving) my dissertation.

Most importantly, my appreciation goes to my supervisors: prof. dr. Carla Vlaskamp, dr. Tjeerd Andringa, prof. dr. Wied Ruijsenaars, and prof. dr. Deniz Başkent. You all have undoubtedly been the most influential in my success as a PhD student. Without you, I would not have been able to carry out this research, let alone in the limited time we had (writing a dissertation in three years proved to be quite a challenge, but certainly not insurmountable). Carla and Tjeerd, you have played the most important roles as my daily supervisors. I could not have imagined two people to be more different, but yet to come together as a perfectly balanced team. It’s like you represent my left and right hemisphere.

Carla, I realize I probably wasn’t the easiest PhD student to manage, with my liberal views on office hours, and locations for that matter. Nonetheless, you gave me the freedom to roam (even though I sometimes detected slight concerns), but also you gave me the support
and guidance that I needed. You have taught me that in writing one must kill its darlings (despite my sometimes stubborn persistence), and how to take off my ‘zevenmijlslaarzen’ (met grote stappen snel thuis). Also, you have been a great guide into the world of special needs care. My roots do not lie within this discipline, and I had a lot to learn when I started working on this project (still do). I discovered quickly that dropping the name Vlaskamp had the universal reaction of recognition and respect. For me that reflects your commitment to this very special group of people (with PIMD), and the big impact you had on this field.

Tjeerd, the most difficult thing in working together with you, is learning how to say no. It seemed as if every week you would come up with new ideas, new possibilities, new methods or new platforms. The one more intriguing than the last, and often it were those exciting little ‘side projects’ that kept me going. More than once I jokingly said that you have indoctrinated me well, but in fact you have taught me well. I remember our first conversation in which you told me that I should forget everything that I had learned during my education, and to that I owe my now broad and holistic views on the world and science in particular. Also, I want to thank you and Merlijn for your hospitality and allowing me to retreat to your home to write. Those weeks have been unprecedentedly important in finishing this dissertation.

Deniz and Wied, having four supervisors turned out to be a luxury and an administrative hassle at the same time. Sometimes it seemed impossible to get all four of you in the same room at the same time. That resulted in less physical contact hours with you, but you have played an important role in my dissertation nonetheless. Deniz, you were always able to improve our manuscripts language-wise, but more importantly: you have a great vision for structure, which manifested itself by asking critical questions and pointing out discrepancies or gaps in my reasoning. Luckily, you did not limit this fine quality to paper, but you also demonstrated its usefulness during those meetings in which we actually did manage to gather altogether. Wied, I want to thank you for your patience, trust and enduring positivity. Your support has been remarkable and very much appreciated. I admire your charm, witty humor, and your powers of persuasion. You are a true gentleman.

Next to my supervisors, other colleagues deserve my gratitude. Hans (prof. dr. Grietens), even though we haven’t worked together closely I want to thank you for your commitment to making sure that I was able to continue my research after my position as a PhD student. Wendy (dr. Post), you are an amazing person and a statistical genius. I have
always enjoyed our meetings tremendously, and experienced them as energizing and uplifting. Where others might have left your office with tears in their eyes from confusion and despair, I left your office with tears from laughter.

Of course the EMB-club deserves to be mentioned here: Jorien, Annet and Annette, Vera, Aafke, Suzanne J and Suzanne H, Eleonora, Anouk, Leontien, Anne, Linda, and last but definitely not least Petra. Sometimes it was hard for me to keep up with the baby boom that went on (I really worried whether it would be contagious at one point), but it has been a pleasure to work with you all. Also, Marlies, it’s been very chocolonely since you’ve been gone.

Additionally, I would like to mention the code monkeys from Sound Appraisal: Arryon, Stefan, Damian, Henk, and Ronald. Guys, it is a blast working with you, much wow. Stefan, you deserve a big thanks for developing MoSART and turning my technical dreams into reality.

There are also a few people that deserve credit for their creative contributions: David Oldenburger and Arryon Tijisma for their share in the beautiful cover of this dissertation, Annemiek Hospers for making my first ever conference poster and photographs depicting the four quadrants, and Renger Koning for composing the soundscapes we used in our last study.

That leaves me with the most personal acknowledgements. First, I want to thank my two parnyphs and best friends. Kim and Anne, what else can I say? You guys are bananas. Whether it’s rushing to the ER, doing my dishes at 3 o’clock at night, or standing by my side during my defense, I know I can always count on you. You two are amazing friends.

Mom and Dad, zonder jullie was dit allemaal niet mogelijk geweest. Dankjewel voor jullie onvoorwaardelijke liefde en steun waar dat nodig was, de hulp rondom mijn verhuizing naar Groningen, de bezoekjes en telefoongesprekken erna. Ook bij jullie kan ik altijd terecht.

Dear Taco, as I experienced certain sensory input patterns, my mental pathways became accustomed to them. The inputs eventually got anticipated and even missed when absent. So could you please continue the petty bickering? I find it most intriguing. “Non si pasce di cibo mortale, chi si pasce di cibo celeste / He who dines on heavenly food has no need of mortal sustenance”. Except for sugar of course...

*Live long and prosper*