Acknowledgments


In his *magnum opus*, Brandon Sanderson made these very small sentences the foundation of a whole new world. Three sentences. Nine words. An immeasurable meaning, at least, for me.

But, truth be told, this is my PhD thesis, and these are my acknowledgments, so this is the moment I can write whatever I want. ‘Such a conceited and arrogant kid’ one might think, and in a way, one might be right. What is academia, if not a bunch of arrogant people trying to convince the reader that their work is a piece of art and the other one is not? That one’s research is the tallest tree, the one that will get the most of the sunlight? This might hurt some people. The truth, it hurts…

...And Brandon Sanderson has nothing to do with it. Back to the topic. I will not try and explain what those words mean (I am not THAT conceited). But I will try to show why these very words should be here. Why they deserve a place in this book.

Life before death: that is the easy one. It is hard to die before living, and living is tougher than dying. Well, life must start somehow. And for that, I would like to thank the Big Bang for giving the starting point (Mom, this is the closest I can ever be of thanking God, so consider it a victory!). I would also like to thank my family. I will not bother with names. There are so many people, blood-related or not, that fits in this description perfectly. So consider this a collective hug, so that fewer people will be worried that “he forgot him or her, the dog and the cat”. You all know how much you mean to me (dogs and cats included), especially when away from home for two years. With that being said, let us move on.

I would like to thank my four moms (yes, you read it right!). First, the one that gave me birth and carefully tended to me when I was just a toddler, listened to me and gave me tips on life when I was a teenager. The one and only Mom. Probably you have no idea how much you mean to me, so I will say it. Nara, I love you.

Mom number 2, Márcia. Thank you for being there whenever I needed. Thank you for the tips, for the scolds, for the love you gave me when I needed most. Thank you for your attention and support. Mom number 3, Rejane. You are probably the kindest person I have ever met. For being there always when I was alone, and also when I was not. For giving me an adoptive brother. Please, never change, because if you do the world will become more miserable. Thank you, I love you.

Mom number 4, and by far the most important. Dad. What you did, what you sacrificed for me and my brother is immeasurable, and it is impossible for us to ever repay what you gave us. I saw you working from 7 A.M. until 10-11 P.M. and start all over again the next day. I saw you working tirelessly without having a single vacation day for years and years. And you were always there, like a standing stone, solid on the ground. Or like an island being hit by the waves, unwavering, even when hit by the worst storms. Always there. A safe haven for us whenever we needed. You encouraged me to become a better person, criticized me when I was on my way to not being one, but most of all, you are always there when I just need to talk, even the most trivial things ever.
To call you a hero would be overestimating heroes. You are better. You are my father. And for that, thank you. I love you.

**Strength before weakness**: in an epic fantasy setting like the one from the book I borrowed the sentence of, it fits almost perfectly: if you are strong, help those that are in need. Simple as that. But this is a PhD thesis and I see no fantasy castles nearby (this is The Netherlands after all...). So I had to come up with something more based on... reality.

Science usually follows this romantic circle of being curious with something, then experiment on it, explain what happened, lay the foundations for future possibilities, become curious again. Rinse and repeat (better rinse three times with PBS for five minutes under gentle agitation). This is science. But it is virtually impossible to know everything about everything and all steps to achieve flawlessness. Thus, to have someone that can support you with something you lack, and on the other hand give support to those that need help, especially in things you excel at.

Strength before weakness. Help those in need; be helped whenever in need.

The problem of a Ph.D.² is that I need to thank the double amount of people. So let us go in order. From Brazil, I have many people to thank for their scientific support and help. Kelem, Márcio, Daiane, Juliano, Betânia, thank you for being around helping me whenever I needed help. Thank you for letting me help you with your amazing projects. Believe me when I say that this book would not be the same without your help. You guys are awesome, and I wish you the best in the future.

From The Netherlands: first I need to thank the biocrew: Rodrigo, Anna, Luíza. You guys were amazing in teaching me things about PET and rats (ok, ok, and fishes as well...) that I had absolutely no idea. For helping me whenever I had to split myself in three to finish a day of work. For just saying “don’t worry, we are here if you need”, and I could be sure that you actually meant it, and you would be there whatever happens. For pointing out what I did wrong, for praising what I did right. I could keep writing about it for a long time, but I think I can summarize it. You guys are the best. Thank you for everything.

I also need to add Paula somewhere around here, since the foundation of three projects of mine came from her hard work (and she would hit me if I did not place her here). You are an amazing researcher, and I am proud of having you as a friend as well. For that and much more, thank you.

Lara, Laura, Nynke, and the professors from Neuroscience and Cell Biology departments that allowed and helped me in performing many of the molecular analysis, thank you very much for your support and for your teachings.

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Jurgen, thank you for all the training and support you gave me for the use of PET. This thesis would take at least one year more to be finished if not for you. Also, for managing and maintaining
the PET camera and all its intricacies, I will not be the first nor the last to say: thank you very much for your help.

As they say in the corridors of the department: no tracer no fun. So a big, very big thank you for the staff that helps to produce the tracers. That includes Bram, the cyclotron master; Chantal, Gina, and Janet, for producing the tracers that we use. Rolf, thank you for all the help you gave in C-Lab and quality control. Inês, Khaled, Gonçalo, Lara, Verena, thank you for helping with whatever questions I had in a chemistry laboratory (and for the laughs). You are all amazing, and I wish you the best.

David, thank you very much for all the help you gave me: from designing experiments together when I had absolutely no idea on how to make a PET study and all the support with the PET data analysis and maintenance of the system. Thank you for all the teachings on PET data analysis and statistics. Without you, this thesis would not happen. So thank you for everything.

**Journey before destination:** This one is very easy to figure out, but very hard to put it into words. Every story comes to an end eventually and there is a moment where you look behind you and realize everything that happened up to this point. A teacher I had at the beginning of my PhD once said that we are what we make of our memories and that those memories shape our future selves (interestingly I forgot half of the saying, so that might actually sound somewhat hypocritical, but anyway…). Imagine this part of life as climbing up a mountain (definitely not in The Netherlands): you start at the base of it, and steadily climb up, initially stumbling over every step, but as you build enough experience in climbing, you actually start to enjoy it. And at the end of four years of climbing, you reach the top and look down, observe the landscape, what you went through to reach this moment. Breathtaking.

Well, in the previous part I thanked everyone that helped me in the climbing, giving me the experience needed to perform it smoothly and safely. But now, this part is about all the people that allowed me to enjoy this climbing. The landscape. The mountain. The people, so many. It is difficult to find a starting point. But I need to start somehow.

A big, very big thank you to my brothers. Rafael, Aleksander, Miguel, Leandro, Felipe. The first one by blood, the other ones by life. We had amazing moments and I cannot thank you all enough. It seems that whatever I write here will eventually lack something, so I will simply say: thank you for everything. You are the best. Thank you for everything.

Thank you again for Kelem, for being such a great friend. I really hope you have a great time now in this new step of your life. Be always this precise and meticulous person, and you will go far in whatever path you wish to take, and I am proud of calling you a big, big friend.

Márcio, Fabiano, thank you for being amazing friends, for all the talks about politics, ethics and whatever comes to mind at 8, 9 P.M. For being always there whenever we just wanted to talk, without prejudice, without criticizing one another, just three friends discussing unfriendly matters, friendly matters, or completely irrelevant and useless matters. I could not seem to get enough of
that. You guys are among the smartest people I ever met, and I hope we will be able to reunite ourselves again and have a nice “coffee with ethics” once again. My brothers, thank you.

Débora (Dérbə), Natálie, Stefani, Paula (Bittencourt). For all the talking, all the stupidity and all the time spent together, you are basically my sisters. Annoying sisters, from time to time, but in a good way (well... maybe not always *insert evil laugh here*). Thank you for everything.

Luiza, firstly, thank you for opening the doors for me to the Netherlands. I’ll never be able to repay this, but I’ll do my best. Now, that being said, thank you for being such an amazing person, always there to help and supportive in many ways. I hope you get the best in life because you deserve that and much, much more. You are amazing. Thank you from the bottom of my heart.

Débora (Débs), Gui. I wish you all the best in the coming years because you deserve it. Thank you for being such amazing people and for the laughter, memes, games, and whatever stupid talk or YouTube video comes up in our heads.

We could make a religion out of it! Thank you for everything.

Gabriel, Vivian (or, as we know, the Marmitts). We know each other for a relatively short period of time, but it seems that we are friends for years. All the weekends spent together made me feel like we were basically a Brazilian family stranded in the middle of The Netherlands. Those were great days, and I sincerely hope some more gatherings will come by, even if I am a tad bit away from you guys. Thank you.

A big thank you to Anna, who helped me not only in my experiments, but also in helping me make sense of data and kinetic modeling, and also for all the talking. Oh, and the occasional chocolate! Always helpful! Thank you.

To everyone at the office during my time here, it was a pleasure and an honor to share the place with such amazing people, both not-so-new and new ones. I expect lots of exciting researches on whatever field you are, or plan to be in the future, and hope that you guys can achieve all the things you want in any field you’d like to be. Thank you for many laughs, many (un)scientific discussions, fun and sad moments. Those are the ones that make us who we are, so I hope they are as precious to you as they were to me.

For the people that are not from the office, but still amazing friends I got from my work, a big thank you. From the people that are not even in the hospital, but are part of my life in The Netherlands, thank you.

To the people of the football (on both sides of the Atlantic), thank you. Those moments were lots of fun, and I hope I improved a bit on the game (likely not, but I’ll keep playing anyway).

A los bandidos, muchas gracias por todo!

Last, but far from least, my paranymps.

Rodrigo, I think it’s safe to say that you’re the most charismatic person I ever met in my whole life. Also, you are an outstanding researcher. Without you, this thesis would not be done. I could
easily place your name on the cover of this thesis and no one that saw us working would be able to disagree. I lost the count of how many times you helped me, taught me, and supported me.

Kars, you are one of the kindest people I’ve known, even though you try very hard to hide that fact. You are the kind of annoying brother that is always trying to... well... annoy others, but is the first one to come in defense of those you like, doing everything you possibly can to help. Don’t ever change, be always this honest person and this amazing researcher.

I am proud of working with both of you, but I am even prouder of calling you my friends.

Thank you for everything.

I guess that’s it. This seems to be the end of a fun, tough journey. Well... since this counts for two PhDs, I assume journeys would be more appropriate. But as much of an end this book is, it is also another step towards another beginning. But, as Robert Jordan also wrote once, a long time ago:

“There are neither beginnings nor endings to the Wheel of Time”

Thank you