Epistemic modelling and protocol dynamics

Wang, Y.

Citation for published version (APA):
Writing this dissertation is like approximating a fixed point whose existence is not guaranteed at the beginning. At the end of this long journey, the formulas and proofs in this book turn out to carry more meaning for me than their apparent mathematical denotations.\footnote{To really understand what I mean here, please turn to Chapter 1 \textit{Introduction} of this dissertation.} Like a glass of wine may let a winegrower recall those sunny or rainy days in the year when the wine was made, the content of this book reminds me of those good or bad days of my Amsterdam life, and most importantly it reminds me how lucky I was for having so many people around who were willing to help and enlighten me. Without them, I would not be able to put my gusts of thought together into a whole picture as it is presented in this book.

I am in debt to my promoter Jan van Eijck who gave me the PhD job, inspired me with many great ideas, and granted me the freedom to do what I wanted. More importantly, he showed me how to live a meaningful and happy life, and let me gradually understand that the pursuit of excellence (no matter what it means) should not be the goal of life in general, since it will lead to a zero-sum game where the unhappiness is guaranteed for most of the players. Thanks to the presence of Jan, Heleen and their lovely twins Gaia and Rosa, I felt so at home that I can mumble my naive thoughts about life whether in Amsterdam or in a no-name lake at a nowhere place in France.

I thank Johan van Benthem for being himself and consequently inspiring, pushing, and helping me in the past years whenever he got a chance. I enjoyed all of our interactions in which Johan constantly produced beautiful melodies of logic which balance technicality, philosophical thinking, and the jokes that let me feel privileged while laughing (in a way that Concertgebouw together with Boom Chicago can never achieve).

Ram Ramanujam kindly saved me from turning into a (dynamic) epistemic fundamentalist and guided me to a broader way of thinking which combines computer science, logic, and philosophy together. Various parts of Ram and/or Rohit Parikh’s work were like eye openers for me which also impacted the philosophy of this dissertation a lot.
As a former member of the no-longer-existing group of SEN2 at CWI, I thank Jaco van de Pol and Wan Fokkink for their constant encouragements and efforts to interest this stubborn student in process algebra. In particular, Jaco acted as a very helpful daily supervisor until he left CWI in 2007, which did not stop him from sending very detailed comments on my work every now and then. I also would like to thank Erik de Vink, Sjouke Mauw, and Wiebe van der Hoek for their valuable advices on my PhD project.

Francien Dechesne has been a constant pleasant company in my PhD project for 3 years. She helped me to a great extent in organizing our thoughts and in putting things down before it was too late. I should apologize for being too dynamic at various last moments, which Francien generously tolerated. I also thank Francien and her husband Tijn for the fun and help they gave to me after work.

Dick de Jongh and Khalil Sima’an fit me in Amsterdam when I started my master at ILLC, where Frank Veltman and Maricarmen Martínez supervised my master thesis later on. The friendship with Floris Roelofsen, Ana Aguilar, Fenrong Liu, Chiaki Ohkura, Ji Ruan, Ka-Wo Chan, Edgar Andrade, and Höskuldur Hlynsson made my master’s life much more colorful than it would have been. Thank you all for kindly encouraging me and preparing me for an academic life.

I also would like to thank my co-authors: Taolue Chen, Mohammad Torabi Dashti, Francien Dechesne, Hans van Ditmarsch, Jan van Eijck, Lakshmanan Kuppusamy, Simona Orzan, Jaco van de Pol, Floor Sietsma and Wouter Teepe for their genuine contributions. I am grateful to the anonymous referees at various venues who rejected or accepted my papers with good reasons.

I thank the respectful members of my reading committee: Krzysztof Apt, Johan van Benthem, Hans van Ditmarsch, Jaco van de Pol, Frank Veltman, Yde Venema, and Ram Ramanujam who took time to read my manuscript carefully and provide valuable comments.

Throughout my PhD, many people have given very important advice on my work (though some of them might not realize it): Alexandru Baltag, Denis Bonnay, Hans van Ditmarsch, Valentin Goranko, Jun Pang, Rohit Parikh, and Rineke Verbrugge. Thanks for the useful discussions.

As Johan van Benthem once mentioned: your best ideas sometimes came from others (“remember that boring talk a year ago…”). Hereby I would like to thank the soil where my ideas were fertilized, particularly because of the in-between nature of my project and my affiliation.

At SEN2 of CWI, Anton, Bert, Mohammad, Jens, Taolue, and Yarick made great fun company. In particular I would like to thank Taolue Chen for setting a perfect example of a successful PhD life and teaching me many things I did not know as a graduate from a philosophy department. I also thank Mohammad Torabi Dashti and Yarosav Usenko for sharing some artistic ideas that a logician may not want to have at work.

After the “successful termination” of SEN2, I moved to SEN1, where Arnold, Bas, Bert, Floor, Jeroen, Jurgen, Mark, Paul, and Tijjs helped me to integrate myself in the
group to some extent, which I appreciated so much. In particular I thank Paul Klint for being such a tolerant boss and Mark Hills for kindly proofreading my dissertation. As my office mate and co-author in the past year, Floor Sietsma witnessed my most crazy and productive time at CWI with her lightning speed reasoning (and typing), a variety of candies/nuts, and her cheerful smile, which helped me a lot.

Alexandra, Helle, Huiye, José, Lacrámioara, Meng, MohammadMahdi, Young-Joo, and Stephanie from SEN3 came to CWI around the same time as I did. Together with other colleagues from SEN3, they formed very happy (sometimes a bit loud) neighbours who often attracted me to the very international dinner parties after work. In particular, I would like to thank Alexandra Silva for her nice Portuguese food, the working-late goodbyes, and important LaTeX advice. Also, many thanks go to Bikkie, Karin, Irma, Mike, and Susanne for their help in practical issues at CWI.

I thank my ILLC-originated/related colleagues: Andreas, Barteld, Cédric, Daisuke, Davide, Edgar, Fernando, Fenrong, Floris, Gaëlle, Guillaume, Ivano, Lena, Michael, Nina, Jacob, Jakub, Jonathan, Olivier, Raul, Reut, Sara, Sonja, Stefan, Sunil, Sujata, Tikitu and many others, for creating such an excellent environment for studying (Dynamic Epistemic) Logic in Amsterdam (thanks for letting me photograph you on many occasions). In particular I am grateful to Eric Pacuit and Davide Grossi for reading my earlier drafts of this dissertation (usually before or after cake sessions).

Before moving to the other part of the acknowledgements, I would like to thank both IPA and ILLC for the support and training during my PhD and also for including this dissertation in both dissertation series.

Despite the mathematical trappings, this dissertation may serve as a disguised photo album for me, which depicts a large part of my (academic) life for the past 6 years. However, there is also a significant part of my life that involves the Chinese community here in Amsterdam, which I have not mentioned yet. I probably need a separate appendix to list my good Chinese friends who helped me in one way or the other. For the sake of relevance and space, I can only mention a few of them who had direct impact on my Amsterdam life and this dissertation.

I would like to thank my friend Zhiwei Zhan for witnessing my Amsterdam life from the very beginning to the very end (and being witnessed by me at the same time). We survived ups and downs and now it is time to head for new phases of life. I thank Mengxiao Wu for the sincere advice in the past 4 years and for being the Chinese representative in my paranimfs. We could have been in the same project but now is even better. I thank Fengkui Ju for being the best-roommate-ever. Fengkui skilfully turned every dinner into a wonderful exchange of food and philosophical thoughts on logic and life. I thank Zhisheng Huang for his decision theoretical advises at each important moment of my life and efforts in helping me to get a PhD position 4 years ago. I thank Huiye Ma, Bo Gao, Jian Shi, Yiqin Yang and particularly Xiaolong Liu for saving me from being homeless at the end of my PhD period. The motivating examples in the introduction of this dissertation were inspired by a conversation with Guowen Dai, who also inspired me in many other ways. Di Liu and Shaojie Zhou helped in designing the cover of this dissertation, which I like very much. Thank
I thank Fenrong Liu, Yue Zhang, and in particular Hai Hu for “tricking” me into ACSSNL-AMS\textsuperscript{2} which turned out to be a surprising source of happiness in the first two years of my PhD life. On the other hand, I thank Jiayang Li and Fangbin Liu for taking over the Chair when I had to concentrate on my research (and other distractions). I thank my colleagues from ACSSNL for their cooperation and creative ideas. I hope you all had fun when working with me.

I thank Zhihong Song, Duanyang Zhang, Qi Zhao, Kaikai Jing and Longyuan Chen for keeping my artistic mind active every now and then after days soaked in logic.

I also want to thank my excellent Chinese colleagues at Science Park: Bin Chen, Taolue Chen, Bo Gao, Jiyn He, Chao Li, Xirong Li, Fangbin Liu, Lei Liu, Huiye Ma, Guangzhong Qiu, Meng Sun, Nan Tang, Jun Wu, Mengxiao Wu, Si Yin, Ying Zhang, Zhen Zhang, Xu Zhang, and Zhiming Zhao for joyful conversations and endless dinner and Karaoke parties.

I sometimes find myself dry in words (but wet from sweating - an iconic heritage from my father) and this is one of those moments: I am risking not mentioning all the people that I should mention here. Nevertheless, I want to take this chance to express my sincere love to all my close Chinese friends here in the Netherlands, and without loss of generality I suppose you feel the same.

This almost concludes my acknowledgements and my Amsterdam life. Finally, I reserve my deepest gratitude to my parents for their unlimited love, support, and understanding. I shall be around soon!

Yanjing Wang
Amsterdam, July 2010.

\textsuperscript{2}Association of Chinese Students and Scholars in the Netherlands, Amsterdam Branch