

# Identifying a Mechanism of Action for Early Stuttering Intervention

A thesis submitted in the fulfilment of the requirements for the  
degree of Master of Speech and Language Sciences (Research)

by

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January 2020

## Certificate of Original Authorship

I, Monique Amato Maguire, declare that this conventional thesis, is submitted in fulfilment of the requirements for the award of Master of Speech and Language Sciences (Research), at the Australian Stuttering Research Centre at the University of Technology Sydney. This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis. This document has not been submitted for qualifications at any other academic institution. This research is supported by the Australian Government Research Training Program.

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Date: 17 January 2020

## Acknowledgements

This completed thesis signifies the end of a formal process, but fails to capture the growth and personal transformation that has brought me to this point. I would therefore like to acknowledge the many people who contributed to my journey. First, to my incredible supervisory team, Associate Professor Robyn Lowe, Professor Ross G. Menzies, Associate Professor Susan O'Brian and Professor Mark Onslow. I want to sincerely thank you for the immense amount of work you have put into developing me as a junior researcher. You have gone above and beyond to ensure my project was underpinned by sound scientific methodology and completed satisfactorily. You each even proof-read my thesis over the festive season! Thank you for entrusting me with this incredible topic, I have found it to be both enthralling and humbling.

Individually, you all contributed much to my development. Robyn, I have appreciated your thoughtful and constructive feedback, your impeccable attention to detail and your persistence in securing my data. Ross, thank you for your nuggets of wisdom which always generated a flurry of thoughts and ideas. I felt very fortunate to have your expert guidance. Sue, "Dazzler", your varied professional interests incorporating both research and clinical practice, provided me with the perfect aspirational model. I also sincerely thank you for our many varied and enriching chats and motivating emails.

To my wonderful primary supervisor, Mark! I will honestly never stop learning from you. I appreciated your open door policy. You never seemed to mind me interrupting you while you were head deep in a manuscript, even if I simply wanted to chat with you excitedly about the latest article I had read. I have been very grateful that you generously dedicated so much time and energy to developing my oratory and writing skills, your influence on me has been permanent. I also felt privileged to gain insight into how your work ethic stems from your passion for science and your dedication to publically-funded research. On a personal level, there were times when your kindness and perspective on life helped me far beyond to scope of my studies. I will be forever grateful for this.

Thank you, of course, to the broader ASRC team. Professor Ann Packman for discussing my 'causal models' section, your contextual input was much appreciated. Dr Natasha Trajkovski and the dedicated speech pathologists who treated the children in the original three-armed randomised control trial, thank you for your consent which

allowed me to carry-out this research. It was an absolute honour to listen to the very special interactions you had with your pre-school clients and their families. To Caitlin Richards for your diligence and expertise in carrying-out the inter-rater analysis. To Dr Damien Liu-Brennan thank you for your endless APA expertise and your Sydney food recommendations. To Michelle Shepherd for your constant contributions to the inner-workings of the Centre. You always carry yourself with such grace and vibrancy, but above all, you are just a beautiful human! To Monique Jones, you are such a bright spark! You have an incredible gift for flipping every trial into a triumph! There is no one on this earth who could have shared this journey with me the way you have, thank you for being your wonderful self.

A special mention to Professor Marie-Christine Franken, Erasmus University Medical Centre, for introducing me to the world of RESTART-DCM. Thank you for sharing your passion and expertise with me, and for being such a wonderful host in Rotterdam.

I am also very fortunate to have a great many mentors who are also my dear friends. Dr Laura Hougaz I would not be a speech pathologist today if it weren't for your advice to keep knocking on closed doors! You continue to inspire and guide me. Dr Simone Arnott you took me under your wing when I was still a student and developed me into a true "Lidcombe Lover". I will never outgrow you, Simone. Dr Michelle Donaghy, Dr Cheryl Andrew and Carl Sokkar, you saw that I had something to offer even while I was knee-deep in my studies and other life transitions. Thank you for helping me establish myself in Sydney. I look forward to much more relaxed interactions going forward! Beautiful Betty Mihelakos you took a chance on me all those years ago and helped me make my time at Melbourne KiDS into something that brought me directly to this point. Thank you for continuing to be such a beautiful influence in my life. Dr Susan Block, Dr Brenda Carey and Margaret Olczak. You have nurtured my passion for stuttering over an extended period of time. You have given me opportunities and I continue to learn so much from each of you. Thank you for the enriching conversations, the professional development memories, the countless hours at the La Trobe Communication Clinic and at Vic STIG, but above all I am grateful that we cherish each other.

To my "soul sisters" Sam Trattles, Mais Lutfi, Yanetta "Bubba" Hiko, Catherine Hardy, Kate Martin, Christina Augustin, Celia Drummond, Nadia Cauchi, Jacinta Coe, and Amanda Amato, thank for your unending love and support! Though distance separates

us, I still feel so connected to each of you. Thanks for cheering me when I was in NZ and now that I am in Sydney for these studies. Your support has meant so much to me, love you girls!

To my family: the Maguires, the Costanzos, the Cramonds, and the Amatos. Thank you all for your love, support and encouragement. It has meant the world that I share my life with all of you. To my amazing Nonna, Carmela Amato. You are the most inspiring woman I know. Thank you for all your sacrifices so we could all thrive here in Australia. To my late Mum, Lyn Amato, words are hard to express but thank you for everything!

That brings me to the three amazing men in my life. Andrew, I take so much inspiration from you and your ability to continually evolve and transform. I have looked-up to you my whole life and I am so proud to call you my big bro! Dad-Darling, you raised me to be curious about the world around me, to challenge common beliefs, to push-through whatever life throws at me, and to approach life through my passion. I have been fortunate to have found my passion, so thank you for the encouragement to chase it! It helps to have your backing!

My wonderful husband, Luke. What a journey these studies have been for the both of us! Our move to Sydney brought with it some challenges, but it helped us grow and evolve both individually and as a couple. I have been so proud to watch you find your place in Sydney. You have approached it in the same way you approach everything, with determination and playful enthusiasm! I value your reassurance, patience kindness, authenticity and zest for life! I would not be handing this thesis in today if it wasn't for you always supporting me to chase my dreams! Where will life take us next?

## Abstract

Stuttering is a speech disorder that affects approximately 1 in 10 pre-school children by the age of 4. While some children recover naturally from stuttering, early intervention is recommended because: [1] stuttering is most tractable in the pre-school years, and [2] the adverse effects of stuttering begin from the onset of stuttering and increase by the time stuttering persists into adulthood.

A number of treatments exist that reduce stuttering in pre-school children. The Lidcombe Program has the most comprehensive research evidence of any early stuttering treatment program. Although the Lidcombe Program has been found to be an efficacious treatment when conducted individually, in groups, or via telehealth, the precise mechanisms of action underpinning the program are unknown.

The Lidcombe Program was developed in response to evidence that response contingent stimulation could reduce stuttering in young children. However, research that has focussed on the function of parent verbal contingencies in the Lidcombe Program has failed to confirm they are the mechanism of action. Therefore, it is worth exploring other variables which may be underpinning outcomes, in order to continue to optimise the Lidcombe Program.

One such variable identified in experimental research suggests that when adults model increased inter-turn speaker latency, they can reduce stuttering in young children. This feature is a suggested clinical component of RESTART-DCM, which is another evidence-based early stuttering intervention.

RESTART-DCM has been directly compared to the Lidcombe Program with a randomised controlled trial. The treatment outcomes for the two programs were similar. This indicates that either [1] the two treatments could be underpinned by different mechanisms of action that reduce stuttering, or [2] there could be mechanisms of action that are common to both treatments. Given the fact that increased inter-turn speaker latency is a procedure used in RESTART DCM, this variable warrants further investigation as a mechanism of action for the Lidcombe Program.

The specific research question of this thesis is: during Lidcombe Program clinic visits, do speech pathologists increase their inter-turn speaker latency when speaking to children compared with speaking to parents? This study utilised retrospective clinical

trial data for the Lidcombe Program. These data were obtained from audio recordings of Stage 1 Lidcombe Program clinic visits. A portion of these audio recordings was randomly selected and the inter-turn speaker latency of speech pathologists was measured using acoustic analysis software. This resulted in the analysis of 53 audio recordings pertaining to 20 unique participants who received Lidcombe Program treatment.

A comparison of the inter-turn speaker latency of speech pathologists with parents and with children showed statistically significant differences. This shows that these speech pathologists increased their inter-turn speaker latencies when speaking to children compared with speaking to parents during clinic visits. This suggests that inter-turn speaker latency may be a possible Lidcombe Program mechanism of action. Further experimental research is required to determine the clinical importance of this research.

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