Marcela Tenorio D.

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Pontificia Universidad Católica de Chile

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What does your research focus on?

My primary interests are in cognitive development across the lifespan and how to develop proper instruments to assess cognitive trajectories. My current research focuses on the development of "covert assessment" as a new method for cognitive evaluation. I am looking for a new theoretical model to justify games and technology as a better way to explore cognitive function in typical and atypical development. My hypothesis is that it is possible to assess cognitive functions without full awareness of the task.

For this purpose, I am working within an interdisciplinary team, including software engineers, mathematicians, graphic designers, basic schoolteachers, cognitive psychologists and neuropsychologists. We are developing iPad games that allow exploration of cognitive functions and learning precursors in children from three to 10 years old. As a product of this experience, we presented TENI (Battery for neuropsychology evaluation in children) and dip (Test to explore learning precursors). Both tests have been standardized for the Chilean population.

What drew you to this line of research and why is it exciting to you?

Since attending Psychology school at the Universidad de los Andes (Bogotá, Colombia), I have felt a special fascination for cognitive processes and human development. I found that cognitive assessment,

as a way to help people with clinical problems, could be useful and powerful in a practical field. However, in Latin America we have shortcomings in terms of an ethical and rigorous assessment of cognitive development. We have few professionals with a specific background in this area, and we do not have appropriate instruments. So, I moved to United States for clinical practice in neuropsychology, and then I decided to begin Doctoral training as a way to contribute with research.

At Pontificia Universidad Católica in Chile, I found time to invest effort, neurons, and hard work in gaining a better understanding of human development and how we can use standardized measurements to analyze typical and atypical trajectories. But I also discovered the potential of games and technology to create alternative forms of cognitive assessment.

At the end of my Doctoral training I was very lucky because I had the opportunity to lead the national standardization of the Wechsler Intelligence Scale for Adults — latest edition, and to be part of the research team that is looking to incorporate games and technology into this field.

I feel that we are crossing frontiers in cognitive assessment. This is exciting for me; I feel like a crewmember of the Enterprise.

Who were/are your mentors or scientific influences?

I was very strongly influence during the first years of my career by Jorge Larreamendy-Joerns and Elena Marulanda. Jorge introduced me to formal research, methodology, and scientific thinking. Elena showed me the importance of being kind and supportive with my patients and their families.

My most important influence during my doctoral years came from Ricardo Rosas. He lives according to a dictum from Alice in Wonderland: "The adventures first, explanations take such a dreadful time". He encouraged me to be creative and risky, to enjoy new and crazy ideas, and to move one step beyond mainstream.

Last but not the least, I am influenced by Annette Karmiloff-Smith. I became familiar with her work during my formative years, and now I have the opportunity to collaborate with her in my research. Annette changed the way we think about human development, and I learned from her the importance of being enthusiastic about theory.

What's your future research agenda?

I am working on a two-year project funded by the Chilean government's Fondo Nacional de Ciencia y Tecnología (FONDECYT) and by the British Academy of Science. My main goal is to explore the use of iPad games for cognitive characterization of children with neurodevelopmental disorders. I am working with 3- to 15-year-old patients with Down's, Williams, and Fragile X Syndromes. My main challenge is to develop proper instruments for cognitive assessment in these populations. During the next year, I will work in collaboration with researchers from Birkbeck, University of London, to test our instruments in children with atypical trajectories of development.

I am particularly interested in impacting public policy in Chile with this research. I think that these

children and their families need attention, health resources, and good educational opportunities.

What publication are you most proud of?

Rosas, R., Ceric, F., Tenorio, M., Mourges, C., Thibaut, C., Aravena, M.T., & Hurtado, E. (2010). ADHD children outperform normal children in an artificial grammar implicit learning task: ERP and RT evidence. *Consciousness and Cognition*, *19*, 341–351.

I feel proud of this team publication. It was our first effort to use multi-level dimensions for cognitive analysis in clinical population.