Kate Einarson winner of the People's Choice Award for her three-minute thesis

PHOTOS COURTESY OF KATE EINARSON

Kate Einarson, shown above during her award-winning thesis presentation

Katherine Cheater
Winnipeg, MB

The bulletin on McMaster University website read, "The people have spoken! The winner of the first-ever People's Choice Award for 3MT is Kate Einarson, whose three-minute thesis, Finding the Beat in Music: The Role of Culture, Cognitive Abilities and Motor Skills, struck a note with online viewers." Kate is a PhD candidate in the Department of Psychology, Neuroscience and Behaviour at McMaster University. The day after this announcement, my interview with Kate revealed an atmosphere of supreme enthusiasm in her research group, which supports three dynamic labs.

While I reviewed Kate's current work in the separate labs of neuroscience and behaviour, I also stepped carefully over and around work being done on a facility unlike any other on the planet, initiated and brought to fruition by Kate's thesis advisor, award-winning professor Dr. Laurel Trainor. Called the LIVE Lab, and dedicated to the scientific study of music, this 96-seat interactive concert venue will have 30 seats fitted with scientific instruments capable of measuring every physical response and brain response in stage performers and audience alike. A 21st-century Yamaha version of the player piano, designed to measure timing, weight and sequence of every key-strike, will sit onstage. Imagining possible research outcomes provides a glimpse of the wild excitement both defining and surrounding this department.

While much anecdotal evidence exists for the relationship between music education and higher degrees of functioning, Kate emphasizes that this relationship is not yet well understood. She is therefore interested in measuring how musical knowledge relates to others skills, "not necessarily to produce a math genius or to win a Nobel Prize, but to understand the relationship between music and cognitive, emotional, motor, and social skills." To begin, she tests infants and children with no musical training and then compares them to other groups, like children with musical training, children with developmental delays, or children of different ages. Her investigation involves basic questions around auditory processing, that is, how good are subjects at “finding the beat”.

As for applying her work to deficits in cognitive, emotional, and social skills, Kate acknowledges that until standards for *typical* development are established, it cannot be decided whose skills are *atypical*. To this end, she appreciates the "huge array of people involved in every branch of our research”, because the McMaster Institute for Music and the Mind has collaborators at universities all over Canada in departments of Engineering, Kinesiology and Music Therapy. In this vein, Kate cites a study recently completed by her research group that measured the comparative effect of active or passive music exposure on infants over a period of six months. "Active listening involved a parent clapping, moving, or singing while holding an infant and making music. Passive listening involved a parent playing with the infant while listening to recorded music. Interestingly, participation in active music-making led to increased communicative behaviour in infants: more gesturing, pointing, smiling, laughing, vocalization; and more attentiveness to the tonal centre of the music."

Kate delights in communicating such research findings to many various community groups in the Hamilton area and beyond. She has recently made presentations to music teachers, parent groups, and classes of university undergraduate and graduate students. To watch her award-winning 3MT talk, visit www.youtube.com/atch?v=87ES37yTWjo

What's next? Within a year or so, Kate will defend her doctoral thesis, at which point she will begin a post-doctoral research fellowship...unless she finds a job, “working with children, teaching, and communicating about research”, that can satisfy her heart's desire.

Born in Brandon, Manitoba, Kate spent most of her childhood in Selkirk. After graduating with Distinction in linguistics and psychology from the University of Manitoba she began pursuing a PhD in developmental psychology and music cognition at McMaster University in Hamilton, Ontario. She has also been a music instructor and continues to teach violin, piano, and early childhood music while working on her doctorate.