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Tatia Lee: Neuropsychology and human neuroscience research insights inform the theoretical and translational framework for fostering brain and psychological health

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Tatia Lee, PhD, is Chair Professor of Psychological Science and Clinical Psychology at The University of Hong Kong, a clinical psychologist, and a board-certified clinical neuropsychologist. Her research focuses on the neuroplastic basis of neurocognitive and affective processes underpinning normal and pathological neurocognitive and psychological functions. She is an elected Fellow of esteemed international societies, including the World Academy of Sciences, Academy of Social Sciences (UK), American College of Professional Neuropsychology, Association for Psychological Science, and American Psychological Association. She is the Founding Chair of the Clinical Neuropsychological Society under the Chinese Cognitive Science Society of China. She has received numerous awards and recognition, including The University of Alberta Alumni Horizon Award, the Fulbright Hong Kong Scholar, the State Scientific and Technological Progress Award, and the Humanities and Social Sciences Panel Prestigious Fellowship Award. Acknowledging her substantial contributions and academic achievements in advancing neuropsychological sciences, The University of Hong Kong bestowed her the "May Endowed Professorship in Neuropsychology." Professor Lee is happy to provide our readers with reflections on her life and career.

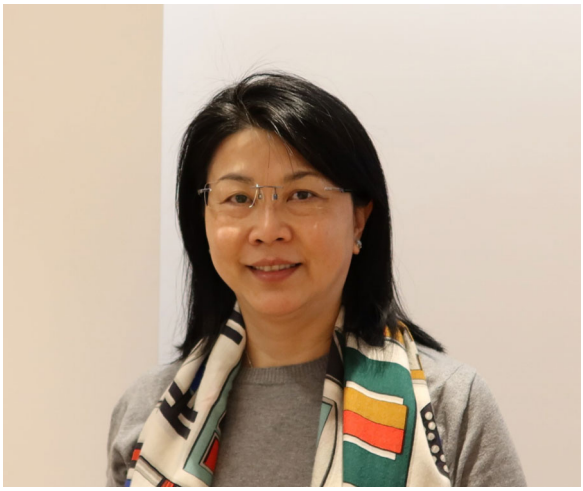

Figure 1. Tatia M.C. Lee, PhD, The University of Hong Kong, Hong Kong SAR.

Part 1: Tatia M.C. Lee – Life and Career

Could you give us a glimpse into your personal history, emphasizing the pivotal moments that first kindled your passion for science?

From a young age, I was an inquisitive child, eager to explore the world around me and understand the intricacies of how it operates. My curiosity extended beyond the physical world to encompass human behaviours. I wanted to learn why people act the way they do and what drives their decisions—the pivotal moment that ignited my passion for science occurred during my school years. My science teacher had an uncanny ability to transform complex concepts into relatable stories, sparking my desire to dig deeper into the mysteries of the human world. I was captivated by the idea of using scientific principles to uncover the hidden mechanisms that govern our behaviours.

As I continued my education, my interest in health promotion began to develop. I was inspired by the potential of science to improve the quality of life. I realized that understanding the brain and mind relationships could lead to more effective strategies for disease prevention and overall well-being. I became particularly drawn to neuropsychology, fascinated by the intricate relationships between the brain and human behaviours. I began to see the immense potential for health promotion through understanding the underlying neuropsychological causes of normal and abnormal brain and psychological functioning. This realization solidified my resolve to dedicate my career to unravelling these complex relationships and using my findings to improve the lives of others.

We would like to know more about your career trajectory leading up to your most relevant leadership role. What defining moments channeled you toward that leadership responsibility?

My career trajectory began with a clinical psychology internship at the Department of Clinical Health Psychology of the University of Manitoba. This invaluable experience exposed me to the practical applications of psychological theories and allowed me to work directly with patients, deepening my understanding of the human mind. Upon completing my internship, I graduated at a time when neuropsychology and neuroscience were vibrant and rapidly evolving fields. The confluence of these disciplines presented a unique opportunity for me to combine my interests in psychology and brain research. I was excited to be part of this interdisciplinary movement that pushed the boundaries of our understanding of the relationships between the brain, mind, and behaviours.

A defining moment in my career trajectory came with the realisation that in-vivo exploration of brain activity is feasible through functional neuroimaging methodologies. This breakthrough opened an avenue for exciting brain research, allowing scientists to visualise the workings of the human brain in real time.

My dedication and achievements in the field have led to my appointment as the Director of the State Key Laboratory of Brain and Cognitive Sciences at The University of Hong Kong. In this position, I have the privilege of working with talented researchers to uncover the neural underpinnings of cognitive and emotional processes. I embraced the challenge and channelled my passion for neuropsychology and neuroscience into leading my team to explore new frontiers in brain research.

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Please share with us what initially piqued your interest in your favorite research or professional focus area.
Reading, for example, Oliver Sacks' books about exciting medical discoveries ignited my interest in my current research and professional foci. These captivating narratives brought the complexities of neuropathology, psychology, and neuroscience to life, and they had a profound impact on the development of my current research career.

My exceptional neuroscience and neuropsychology teachers and clinical mentors, whose passion for their respective fields, further inspired and encouraged my commitment to my favourite research and professional focus areas. Their engaging lectures and dedication to advancing our understanding of the brain, mind, and their interactions further solidified my desire to delve deeper into this fascinating area of study.

What impact do you hope to achieve in your field by focusing on specific research topics?
I hope to significantly impact several key areas, ultimately contributing to the promotion of brain and psychological health. Firstly, through my research, I aim to prevent or slow down the development of neurocognitive and affective dysfunction by identifying preventable risk factors early and developing targeted interventions to mitigate these issues before they develop into more severe conditions. Secondly, I strive to minimise the disease's impact on those already affected by cognitive or emotional disorders. By advancing our understanding of the neural underpinnings of these conditions, my research will contribute to developing novel treatment approaches that can more effectively address the unique challenges faced by individuals with these disorders. Lastly, I am committed to developing cost-effective and broadly accessible screening methodologies and intervention strategies for neurodegenerative diseases and mood disorders. By making these tools widely available, I hope individuals from diverse backgrounds and resource-limited settings can benefit from early detection and appropriate interventions, leading to better health outcomes and improved quality of life.

Please tell us more about your current scholarly focal points within your chosen field of science.
My current scholarly focal points within my chosen field of science encompass several key areas: (1) Investigating the role of the PONS in affective processing and regulation through observing social and affective behaviours in individuals with pathological mood problems. My research provides critical insights into how the PONS interacts with various brain regions to process and regulate emotions, contributing significantly to our understanding of the neuropathology of anxiety and depression. (2) Developing prediction models for social behaviours and stress response, which offer valuable insights into mental health research and sciences in developing countries where access to professional facilities is limited and facilitates timely interventions for neurodegenerative and affective disorders. (3) Developing online neuropsychological assessment platforms and comprehensive sets of normative data on neuropsychological measures to facilitate brain-behaviour research and clinical development.

What habits and values did you develop during your academic studies or subsequent postdoctoral experiences that you uphold within your research environment?
I have developed crucial habits and values shaping my scientific inquiry approach. Perseverance, resilience to failure, adherence to ethical principles, and patience are all integral aspects of my work ethic. I have learned to face challenges and setbacks, bounce back from failures, and maintain the highest ethical standards in my research.

Additionally, I continuously strive to broaden my perspective by engaging with diverse ideas, disciplines, and collaborators, recognising that innovation often emerges from synthesising different viewpoints and approaches. I strongly emphasise innovation in my research, developing novel methodologies, insights, and solutions that challenge existing paradigms and push the boundaries of our understanding. By embracing these habits and values, I have cultivated a research environment that fosters curiosity, rigour, and collaboration, enabling me and my students to make meaningful contributions to advance the frontiers of scientific knowledge.

At Genomic Press, we prioritize fostering research endeavors based solely on their inherent merit, uninfluenced by geography or the researchers' personal or demographic traits. Are there particular cultural facets within the scientific community that warrant transformative scrutiny, or is there a cause within science that deeply stirs your passions?
One such issue that comes to mind is the under-representation of women scientists, although it is worth noting that the situation has been gradually improving. Additionally, we must exercise caution regarding the representation of scientists from different geographical regions and ethnic origins. Their inclusion and participation are vital to ensuring a comprehensive and global perspective in scientific research. Ensuring these potential balances and fostering a diverse and inclusive environment within the scientific community is a crucial and ongoing endeavour.

What do you most enjoy in your capacity as an academic or research leader?
As an academic and research leader, I most enjoy witnessing the development and success of students and young talents, as well as my colleagues. Seeing them grow, thrive, and contribute to our field is incredibly rewarding. Furthermore, I am very satisfied to know that my research has positively impacted human health and quality of life, contributing to a lasting, beneficial effect on society.

Outside professional confines, how do you prefer to allocate your leisure moments, or conversely, in what manner would you envision spending these moments given a choice?
Personal development and growth are essential, even during leisure time. I enjoy delving into various books, exploring new subjects, and expanding my horizons. Travelling also plays a significant role, providing opportunities to immerse myself in diverse cultures and experiences. Above all, spending quality time with family and friends is paramount and contributes to a balanced and fulfilling life.

Part 2: Tatia M.C. Lee – Selected questions from the Proust Questionnaire[1]

What is your idea of perfect happiness?
Perfect happiness is achieved when experiencing a state of inner peace and tranquillity.

What is your greatest fear?
The greatest fear is fear itself.

Which living person do you most admire?
The volunteers of the Médecins Sans Frontières and other charitable organizations.

[1]In the late nineteenth century, various questionnaires were a popular diversion designed to discover new things about old friends. What is now known as the 35-question Proust Questionnaire became famous after Marcel Proust's answers to these questions were found and published posthumously. Proust answered the questions twice, at ages 14 and 20. In 2003 Proust's handwritten answers were auctioned off for $130,000. Multiple other historical and contemporary figures have answered the Proust Questionnaire, including among others Karl Marx, Oscar Wilde, Arthur Conan Doyle, Fernando Pessoa, Stéphane Mallarmé, Paul Cézanne, Vladimir Nabokov, Kazuo Ishiguro, Catherine Deneuve, Sophia Loren, Gina Lollobrigida, Gloria Steinem, Pelé, Valentino, Yoko Ono, Elton John, Martin Scorsese, Pedro Almodóvar, Richard Branson, Jimmy Carter, David Chang, Spike Lee, Hugh Jackman, and Zendaya. The Proust Questionnaire is often used to interview celebrities: the idea is that by answering these questions, an individual will reveal his or her true nature. We have condensed the Proust Questionnaire by reducing the number of questions and slightly rewording some. These curated questions provide insights into the individual's inner world, ranging from notions of happiness and fear to aspirations and inspirations.

What is your greatest extravagance?
Travelling; professional/personal development.

What are you most proud of?
My students' achievements.

What is your greatest regret?
I do not have this feeling because I see experiences as learning opportunities rather than moments of regret.

What is the quality you most admire in people?
Kindness.

What is the trait you most dislike in people?
Arrogance and hypocrisy.

What do you consider the most overrated virtue?
Righteousness can be an overrated virtue. We all want to be "right." However, if you constantly assert your correctness, it comes off as self-righteous or gloating. Nonetheless, the opinion on overrated virtue varies depending on individual perspectives, personal beliefs, and cultural values.

What is your favorite occupation (or activity)?
Interacting with people.

Where would you most like to live?
Where my social connections are.

What is your most treasured possession?
Memories of my loved ones.

When and where were you happiest? And why were so happy then?
The moments when my children were born. Witnessing the miraculous arrival of new lives was joyful.

What is your current state of mind?
Peaceful.

What is your most marked characteristic?
Loyalty, Perseverance, and Resilience

Among your talents, which one(s) give(s) you a competitive edge?
Multicultural experiences and people skills are talents that offer me a competitive edge.

What do you consider your greatest achievement?
The happiness and achievements of the two children I brought up and the professional and/or research psychologists I trained.

If you could change one thing about yourself, what would it be?
Be more daring and outspoken.

What do you most value in your friends?
Sharing and support.

Who are your favorite writers?
George Orwell, Oliver Sacks, and Yuval Noah Harari.

Who are your heroes of fiction?
The Swallow and the Happy Prince.

Who are your heroes in real life?
My mother.

What aphorism or motto best encapsulates your life philosophy?
"Knowledge is serene and indestructible wealth."

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