health academia in preventing global chronic disease.[1] The authors focused on key areas such as resource allocation and overcoming barriers to prevention, but paid less attention to academia's crucial role in advancing fresh thinking or innovative models to tackle the epidemic. Two such emerging concepts are Complexity Science (CS) and Allostatic Load (AL) in the causation of chronic diseases.[2–5]

Our worldview is shifting from mechanistic models to the new CS paradigm. CS perceives social systems (e.g., financial markets) and natural systems (e.g., population health) as emergent properties of open, dynamic, nonlinear, and adaptive systems (i.e., Complex Adaptive Systems [CASs]). Patterns of health and chronic diseases are conceptualized as emergent properties of populations.[3] These patterns arise from networks of interactions among dynamic sets of interconnected nonlinear subsystems (e.g., political systems, physical and social environments) that predominantly reside in the latter.[6,7] To facilitate changes in a CAS (i.e., health of a population) multiple interventions are required in several subsystems and sectors rather than one magic bullet such as vaccines. Interventions have to be flexible, constantly monitored, and evaluated, and information must be fed back to change the course of intervention. There are few documented reports of CS in health interventions, and a recent report describes its application in an attempt to reduce cardiovascular diseases morbidity and mortality among Canadian Asians.[8] Exploring CASs in health will deepen our understanding of how social systems, climate change, human behaviors, and physical environments promote development of chronic diseases in humans and will help us tackle this issue.

AL denotes the cumulative wear and tear or the physiological toll experienced by the body over a life course to adapt to biological, psychological, and environmental demands to maintain homeostasis.[4] It postulates that chronic diseases are mediated through stress pathways and suggests that stressors of daily living play a role in promoting chronic diseases rather than stemming from a limited set of risk factors.[9] Thus, an ordinary social life (as we understand it) may promote chronic diseases over and above what can

be explained by the extended life span and traditional risk factors. Because chronic disease affects a majority of the global population, the burden can be substantial.

These are just two examples of how fresh thinking and innovative approaches may help us to unravel, understand and contain the epidemic of chronic diseases. ■

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A name was misspelled in the Acknowledgments section. On page 1844, the Acknowledgments should read:

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