Overview of the talk: While meditation and mindfulness are discussed a lot in both popular media and scientific discourse, there is little agreement on what actually constitutes those practices. In this talk, I will present an analysis of cognitive mechanisms that may underlie two broad types of meditation that have been distinguished in the literature: focused attention meditation and open monitoring meditation. This analysis is underpinned by several experimental studies of attention, memory, and decision making. Yet, there are many more types of meditation than just focused attention and open monitoring. In a study of analytical meditation that is practiced by Tibetan monks in Bylakuppe (India), we have started to examine cognitive mechanisms in that task as well. Initial results of those studies demonstrate interesting changes in brain oscillations associated with these practices.

Marieke van Vugt is an Assistant professor at the Institute of Artificial Intelligence and Cognitive Engineering (ALICE) of the University of Groningen (Netherlands). She obtained her PhD in neuroscience focusing on the role of brain oscillations in recognition memory with Dr. Michael Kahana at the University of Pennsylvania in 2008. She then went on to do postdoctoral research on the neural correlates of decision making with Dr. Jonathan Cohen at Princeton University before starting her own group as a tenure track assistant professor in Groningen in 2010. The research in Dr. van Vugt's lab focuses on how, when and why we mind-wander, and what the fundamental cognitive operations are that underlie meditation and mindfulness. She investigates these questions using a combination of computational modeling, neuroscience, and experimental psychology tools.