



**University of
Zurich** ^{UZH}

Department of Economics – Neuroeconomics Seminar

December 3, 2020 - 17:00 - 18:00

Roshan Cools

Donders Institute for Brain, Radboud University

Chemistry of the adaptive mind: Lessons from dopamine

The human brain faces a variety of computational tradeoffs, such as the flexibility/stability tradeoff. I will argue that the major ascending neuromodulatory systems originating from the midbrain are well suited to dynamically regulate these computational tradeoffs depending on our constantly changing task demands. This working hypothesis follows from a number of general principles of chemical neuromodulation, which I will illustrate by reviewing evidence from recent pharmacological PET/fMRI studies on (cost/benefit decision making about) cognitive control. These studies also begin to elucidate the mechanisms underlying the huge variability in catecholaminergic drug effects across different individuals and behaviours.