



**University of  
Zurich** <sup>UZH</sup>

## Department of Economics – Neuroeconomics Seminar

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Keno Juchems  
*University of Oxford*

### **Where does value come from?**

Biological agents need to satisfy many goals at the same time. For convenience, we often assume that the agent achieves this by maximizing only one single monolithic reward function which takes all goals into account. Frameworks based on this assumption can point to great successes in machine learning, neuroscience, and economic decision-making. However, defining this monolithic reward is often infeasible on-line, or even undesirable, when the utility of an action varies with time or context. Thus, in many scenarios, reward needs to be generated by the agent itself, a concept called intrinsic reward.

In this talk, I will review some ideas from reinforcement learning, control theory, and biology of how the organism might go about mastering the challenges posed by intrinsic reward. In particular, I will draw on ideas from homeostatic reinforcement learning and relate them to three empirical studies in the domain of context-dependent valuation. I will highlight some of the challenges and advantages of this framework.