

# Neuronal Adaptation for Sampling-Based Probabilistic Inference in Perceptual Bistability

David Reichert

Peggy Seriès, Amos Storkey

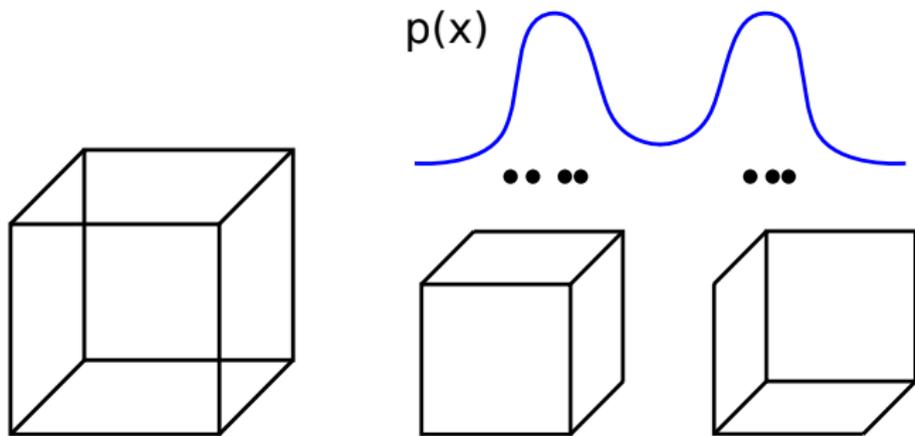
University of Edinburgh

Funding: EPSRC, MRC, BBSRC

NIPS 2011 – T018

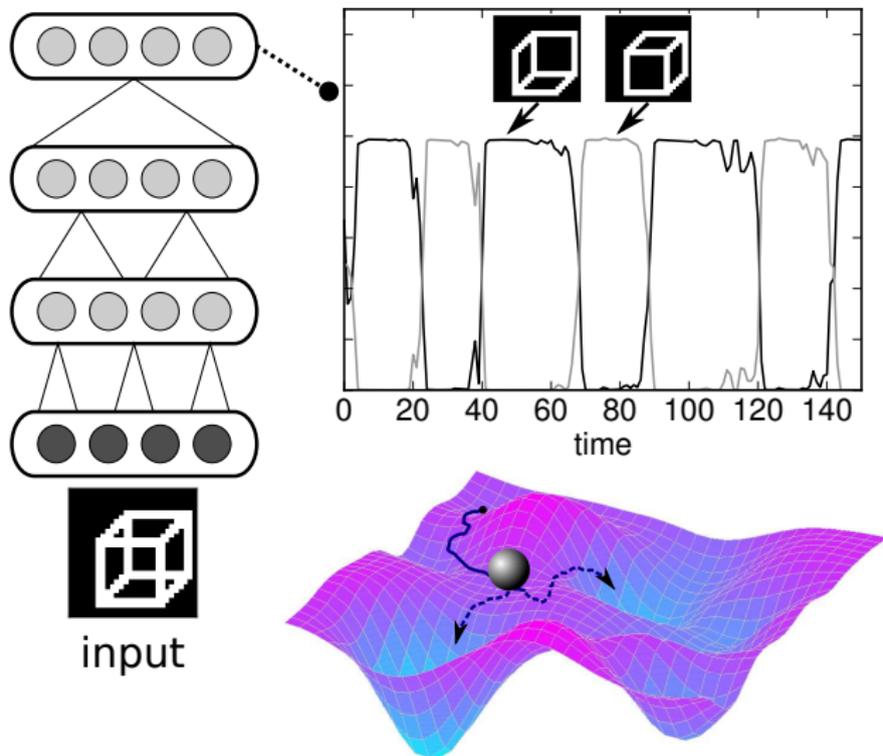
# Perceptual bistability

Approximative probabilistic inference in the brain?



- Just neuronal adaptation?
- Sampling? Sundaeswara and Schrater (2006).
- MCMC? Gershman et al. (2009).

# Deep Boltzmann machine model



## Adaptation and sampling

- Sampling algorithm: Rates-FPCD (Breuleux et al., 2011)
- Biological interpretation: neuronal adaptation!

### ⇒ Neuronal Adaptation for Sampling-Based Probabilistic Inference in Perceptual Bistability

We examine:

- Temporal dynamics
- Necker cube & binocular rivalry
- Spatial attention
- Bonus: explicit depth modelling
- Full story & details: T018!