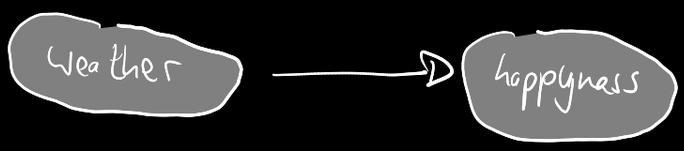
Directed Graphical Models

Latent vs. observed nodes

Observable nodes

- sth. you can measure
- sth. you have data for

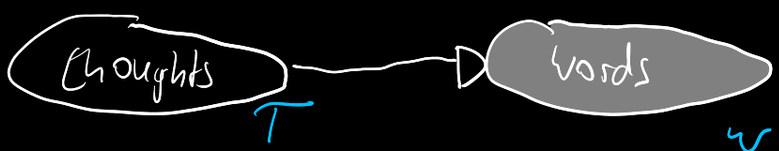
(shaded ≙ observable)



(simple: DGM with only observable nodes)

latent nodes

- sth. you can't measure
- sth. you don't have data for



latent ≙ hidden ≙ not measurable

problem:

→ harder to calculate the likelihood

↓

fitting a model

$D = \{$ only for observables $\}$

have joint: $p(T, w)$

↓ don't have data

need: marginal: $p(w)$, $p(w) = \int_T p(T, w)\, dT$ (can be intractable)