

Decontaminating Human Judgments By Removing Sequential Dependencies

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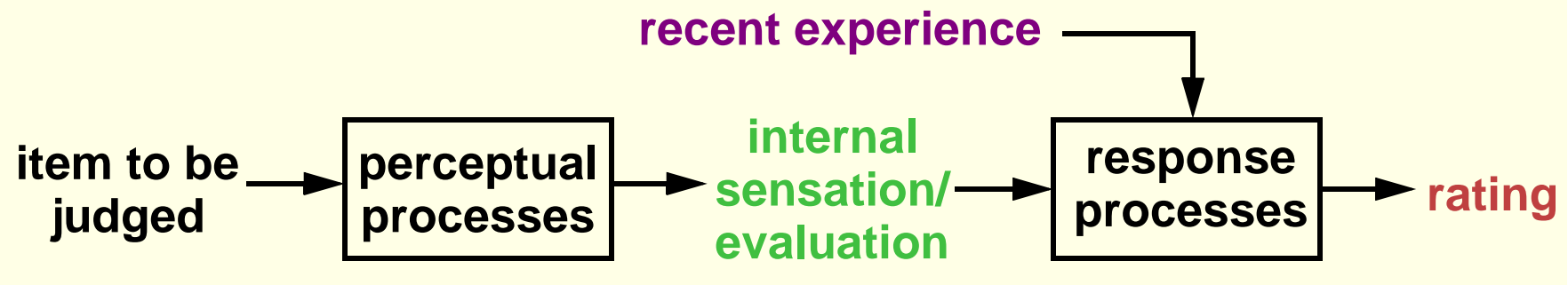
Make a moral judgment about the following actions:

- (1) Stealing a towel from a hotel
- (2) Keeping a dime you found on the ground
- (3) Poisoning a barking dog

Suppose instead the sequence had been:

- (1') Testifying falsely for pay
- (2') Using guns on striking workers
- (3') Poisoning a barking dog

**Rating of action (3) is reliably higher than rating of action (3')
(Parducci, 1968)**



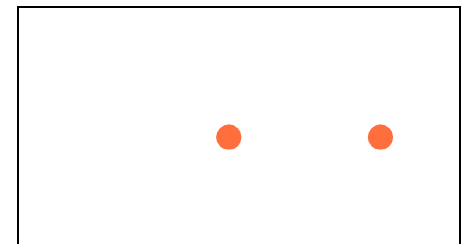
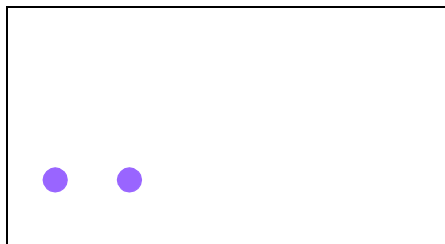
If **ratings** are contaminated by **recent experience**, can we *decontaminate* them to recover scores more meaningfully related to an individual's **internal sensation/evaluation**?

Strategy

Collect data on a simple judgment task for which we have ground truth knowledge of the subjects' internal sensations

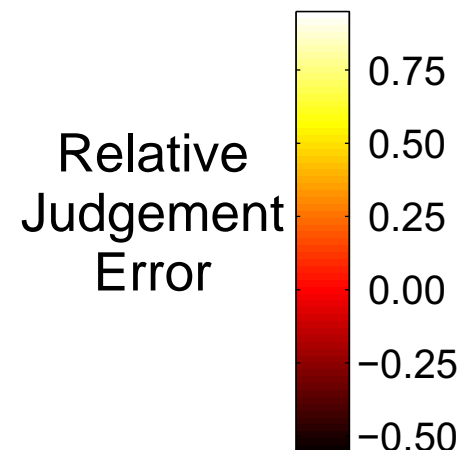
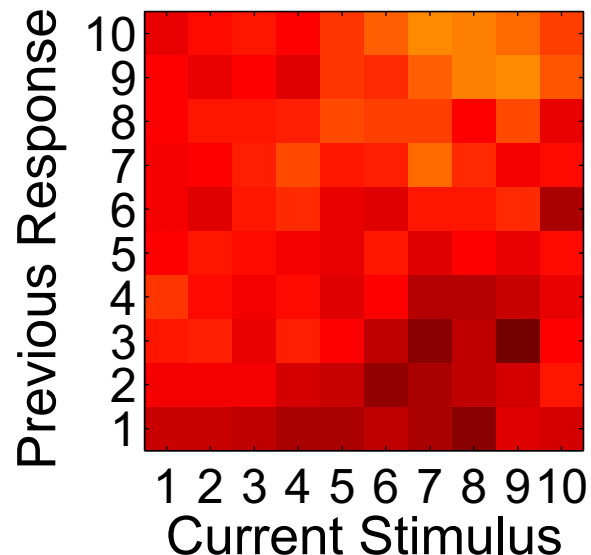
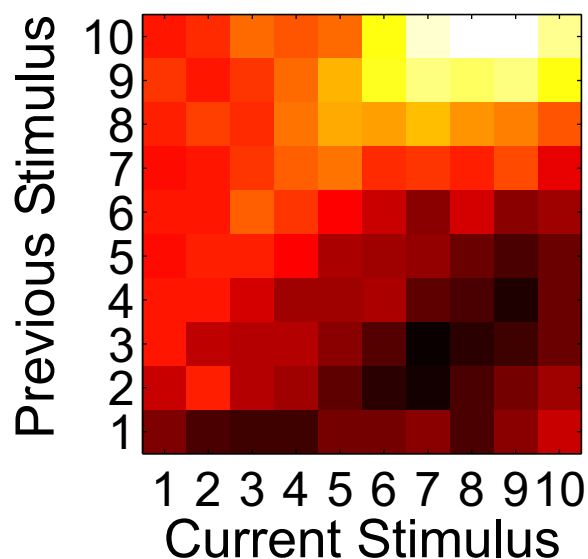
Experiment

Judge the width of the gap is between pairs of dots using a 1-10 scale.

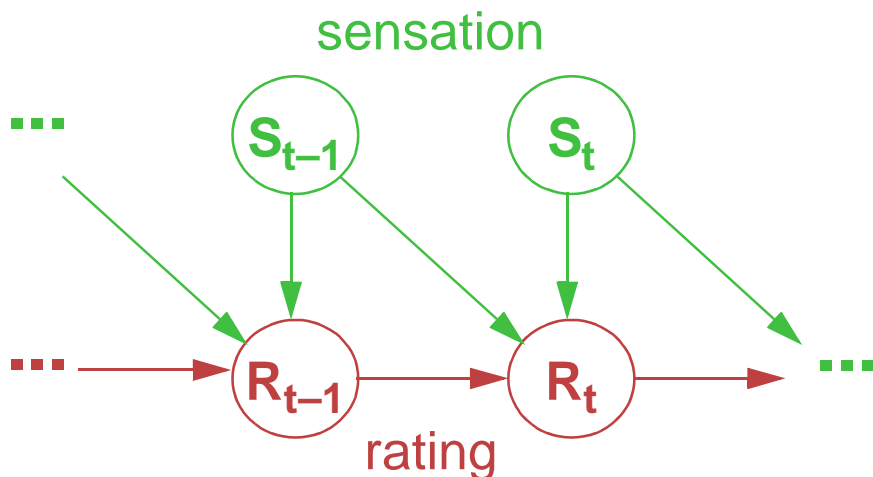


Experiment produced sequential dependencies.

Rating of current stimulus influenced by both previous stimulus and response



Psychological models suggest dependency structure like:

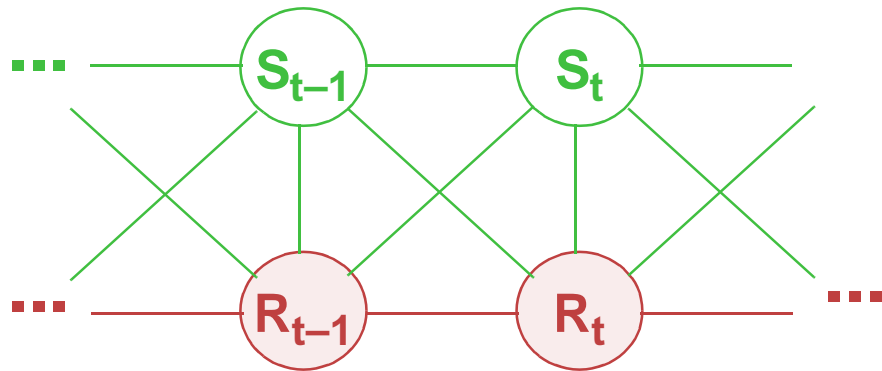


Decontamination problem

Infer sensations S_1, S_2, \dots, S_T

Given ratings R_1, R_2, \dots, R_T

Recast as a linear-chain conditional random field:



Decontamination problem

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Psychological theories impose strong constraints on clique potentials \Rightarrow few free parameters to be learned.

Evaluate performance using cross validation

