

All for one or some for all







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DGPS – 17 September 2018

From Theory To Constraint To Prediction:  
The Bayesian Payoff in Psychological Science

The problem – The example – The method – The illustration

## In this talk:

-  The problem
-  The example
-  The method
-  The illustration

# The problem



The problem



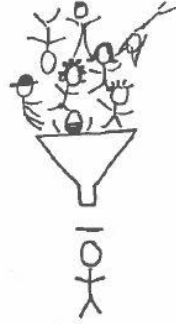
What effects are you interested in?

The problem



What effects are you interested in?

Group effects

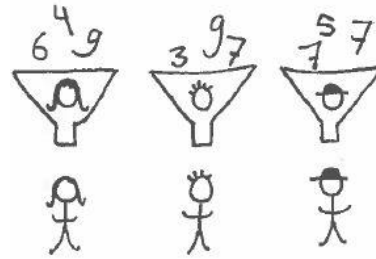


# The problem



## What effects are you interested in?

Group effects



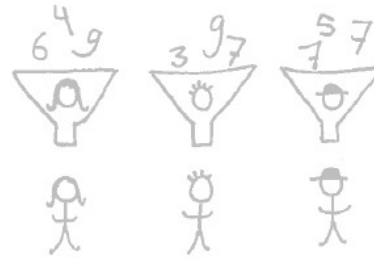
Individual effects

# The problem



## What effects are you interested in?

Group effects



Individual effects

Group of individuals



The problem

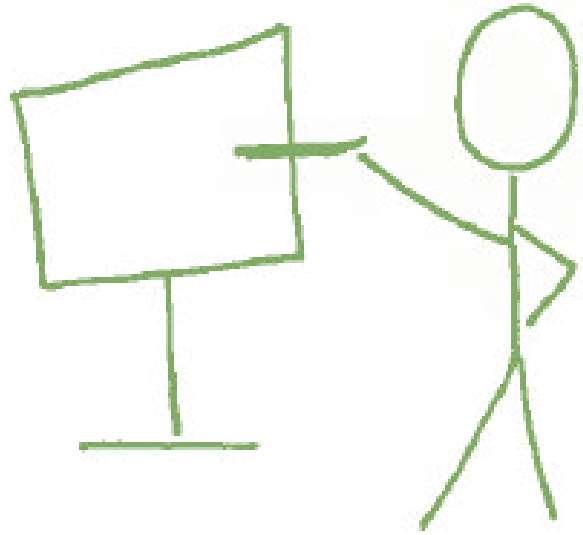


What effects are you interested in?

Does 'it' work for everyone?



# The example



# The example

frontiers in  
**HUMAN NEUROSCIENCE**

**ORIGINAL RESEARCH ARTICLE**

published: 25 July 2012

doi: 10.3389/fnhum.2012.00219



## When unconscious rewards boost cognitive task performance inefficiently: the role of consciousness in integrating value and attainability information

**Claire M. Zedelius\***, Harm Veling and Henk Aarts

*Department of Psychology, Utrecht University, Utrecht, Netherlands*

# The example

26 participants



# The example

26 participants



2x2x2 conditions

REWARD	○	○
INTERFERENCE	○	●
TIME	○	△

# The example

26 participants



2x2x2 conditions

REWARD	○	○
INTERFERENCE	○	●
TIME	○	△

3 hypotheses

H <sub>1</sub>	○ ● △ ▲ ○ ● △ ▲
H <sub>2</sub>	□ ■ □ ■
H <sub>3</sub>	▨ ▨ ● ▲

# The example

26 participants



2x2x2 conditions

REWARD	○	○
INTERFERENCE	○	●
TIME	○	△

3 hypotheses

H <sub>1</sub>	○ ● △ ▲ ○ ● △ ▲
H <sub>2</sub>	□ ■ □ ■
H <sub>3</sub>	⊘ ⊘ ⊘ ⊘

Is one of the hypotheses the best for everyone?

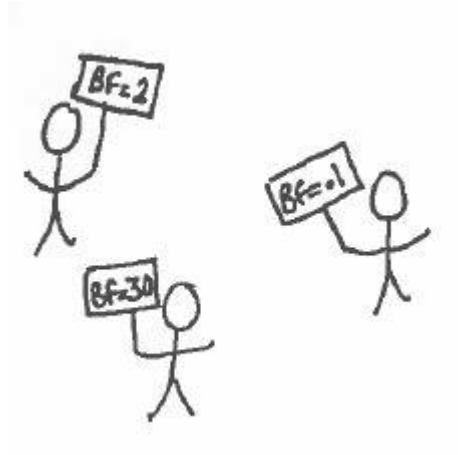
# The method



# The method



## Individual Bayes factors





# The method



## Individual Bayes factors

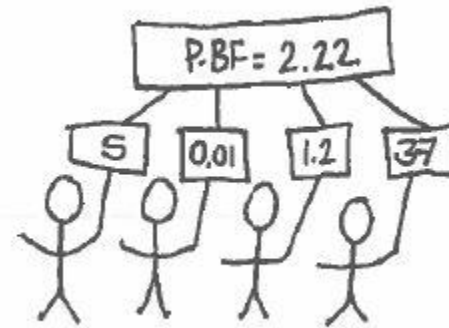


# The method

Individual Bayes factors



Aggregate Bayes factors

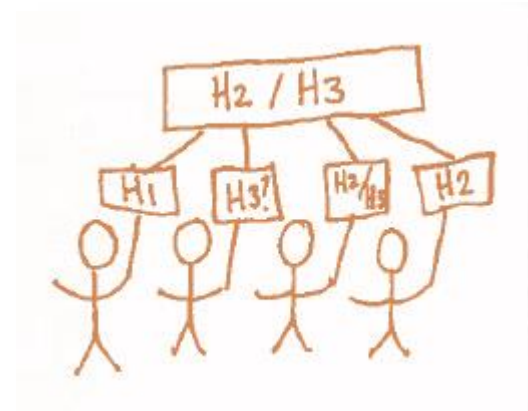


# The method

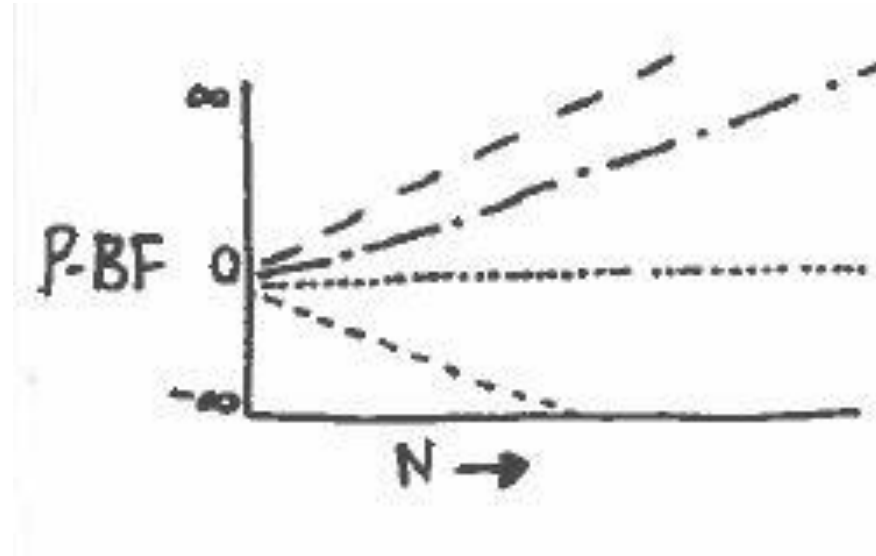
Individual Bayes factors



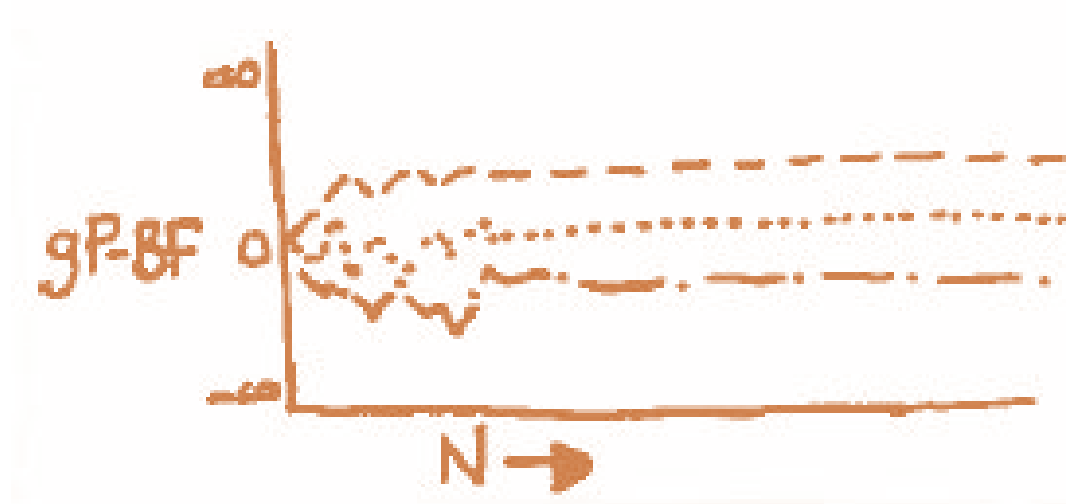
Aggregate Bayes factors



# The method

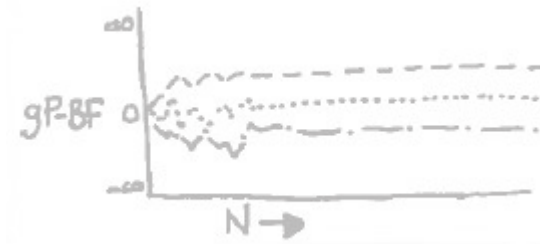


# The method

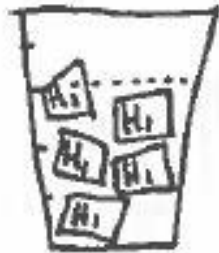


# The method

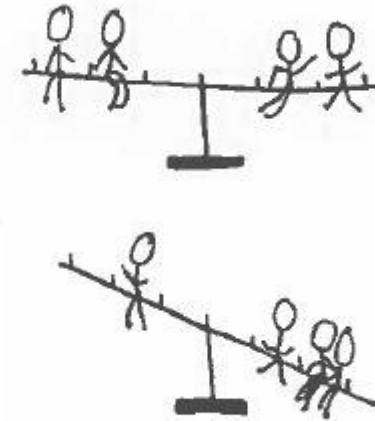
## What does it tell us?



Evidence Rate



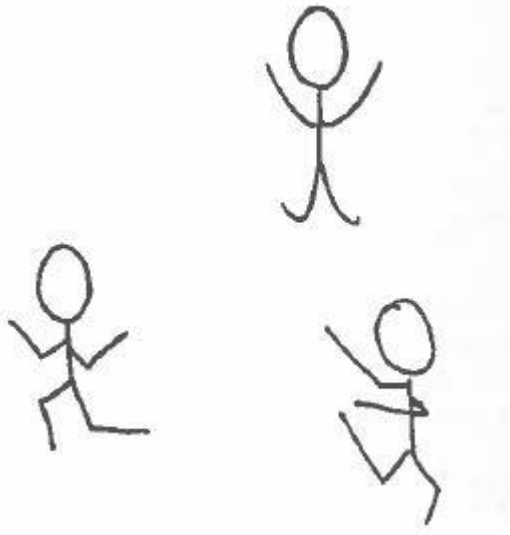
Stability Rate



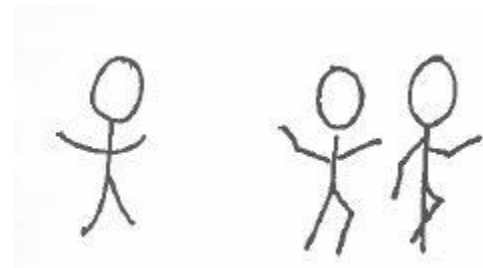
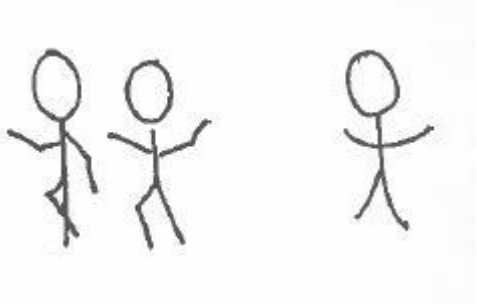
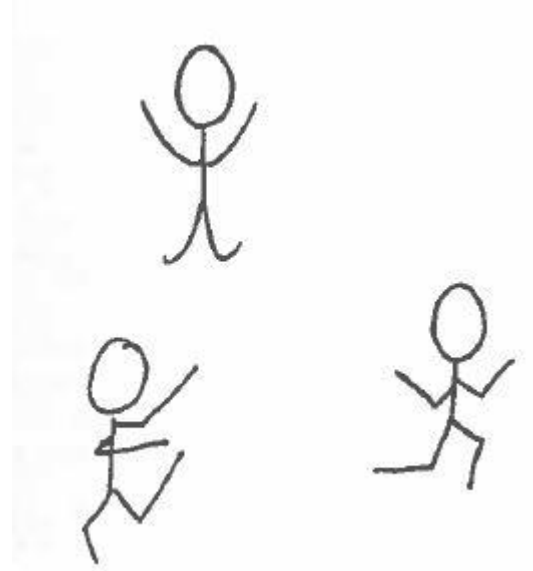
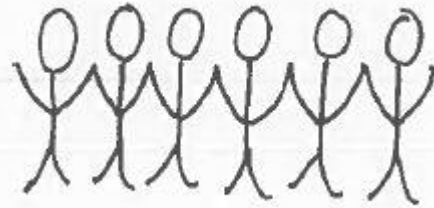
# The illustration



# The illustration



Some for all





All for one or some for all



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