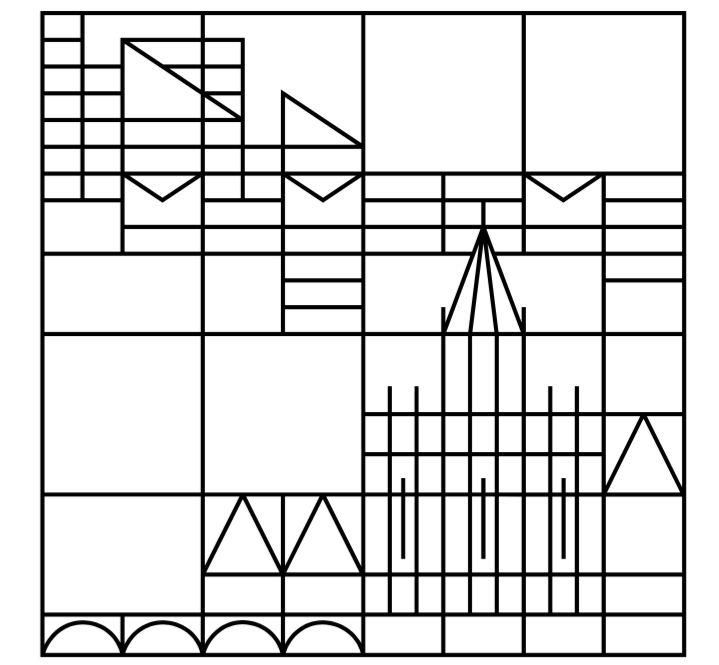


# Establishing judgment policies in the absence of feedback

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## Making decisions in unsupervised environment

Daily judgments (e.g. judging the suitability of an apartment) often follow an **unsupervised** learning process, i.e. no objective criteria exist and no corrective feedback is provided.

Social judgment theory suggests that individuals make those judgments by *weighing each cue by its importance and summing up the weighted cues linear additively*:



**Goal: To investigate how people form unsupervised judgments and to what degree those judgments can be learnt.**

## Which properties of the cues attract people's attention? (Exp.1)

People focus on highly variable cues (Eil & Ashby, 2012)

People focus on informative cues (Pothos & Chater, 2002)

## Do people integrate more than one cue into a judgement? (Exp. 1)

Supervised judgement: people integrate cues (Anderson, 1971)

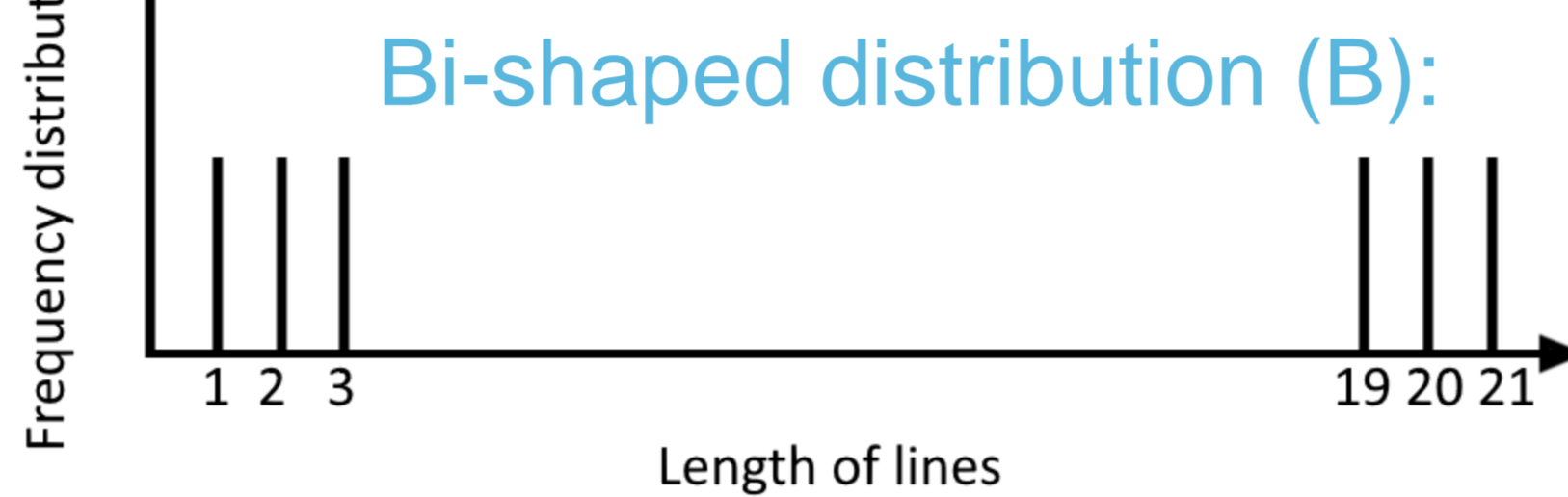
Unsupervised categorization: people rarely integrate cues (Ashby, Queller & Berretty, 1999; Eil & Ashby, 2012)

## Can others pick up these unsupervised judgment policies? (Exp. 2)

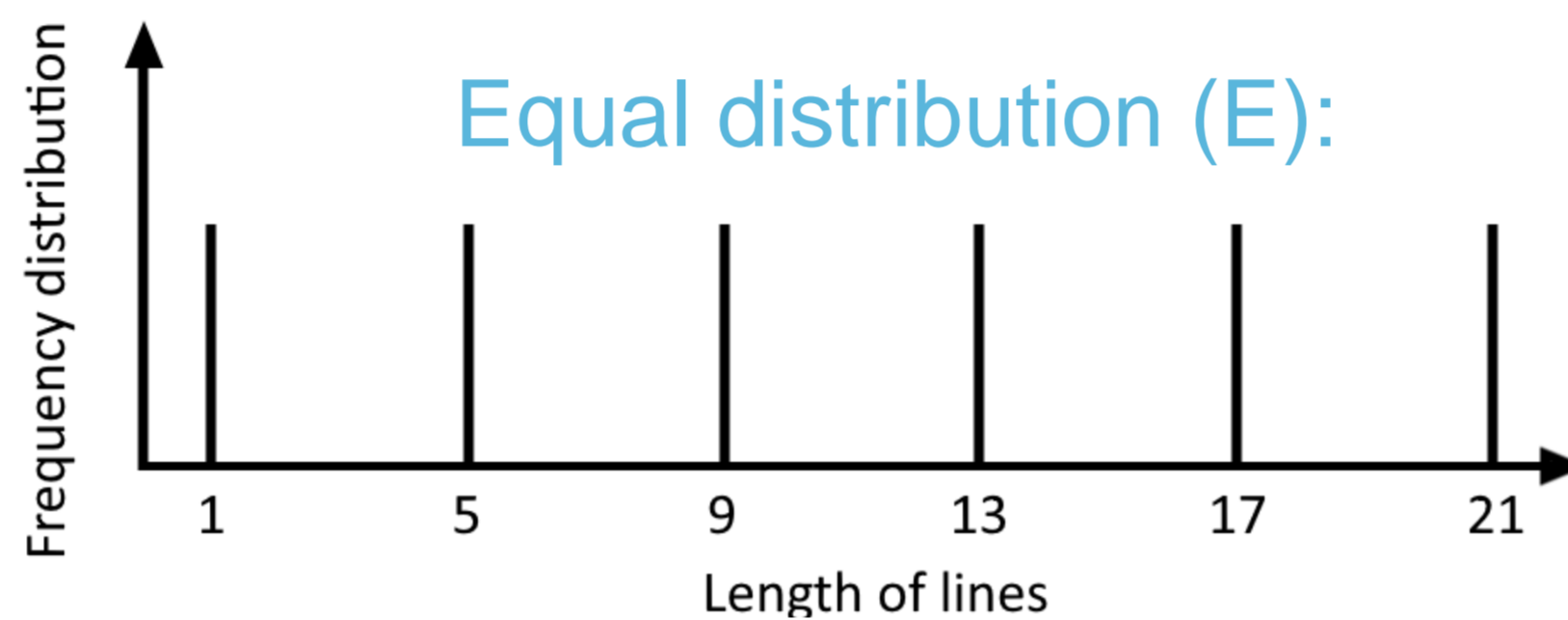
In unsupervised categorization people can learn unsupervised categorizations made by others (Colreavy & Lewandowsky, 2009)

To investigate which properties of the cues attract attention we varied the distributions of line lengths (B, C, E).

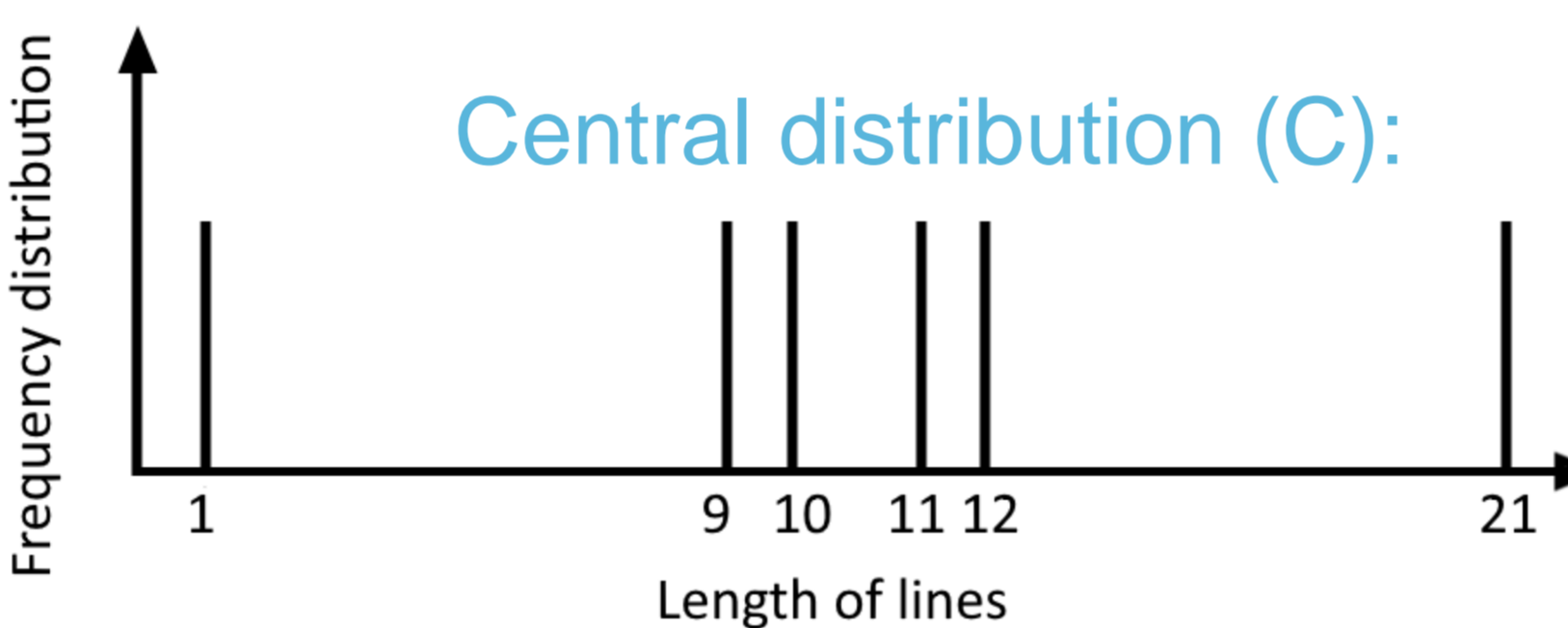
### Three distributions of line lengths



High variability/  
Low informativeness



Medium variability/  
High informativeness



Low variability/  
Medium informativeness

### Final 6 conditions

Abb.	Variability	Informativeness
BCC	H/L/L	L/M/M
BBC	H/H/L	L/L/M
BEE	H/M/M	L/H/H
BBE	H/H/M	L/L/H
ECC	M/L/L	H/M/M
EEC	M/M/L	H/H/M

H – High; M-Medium; L-Low;

Combine 3 lines to single out one cue with different line length distribution

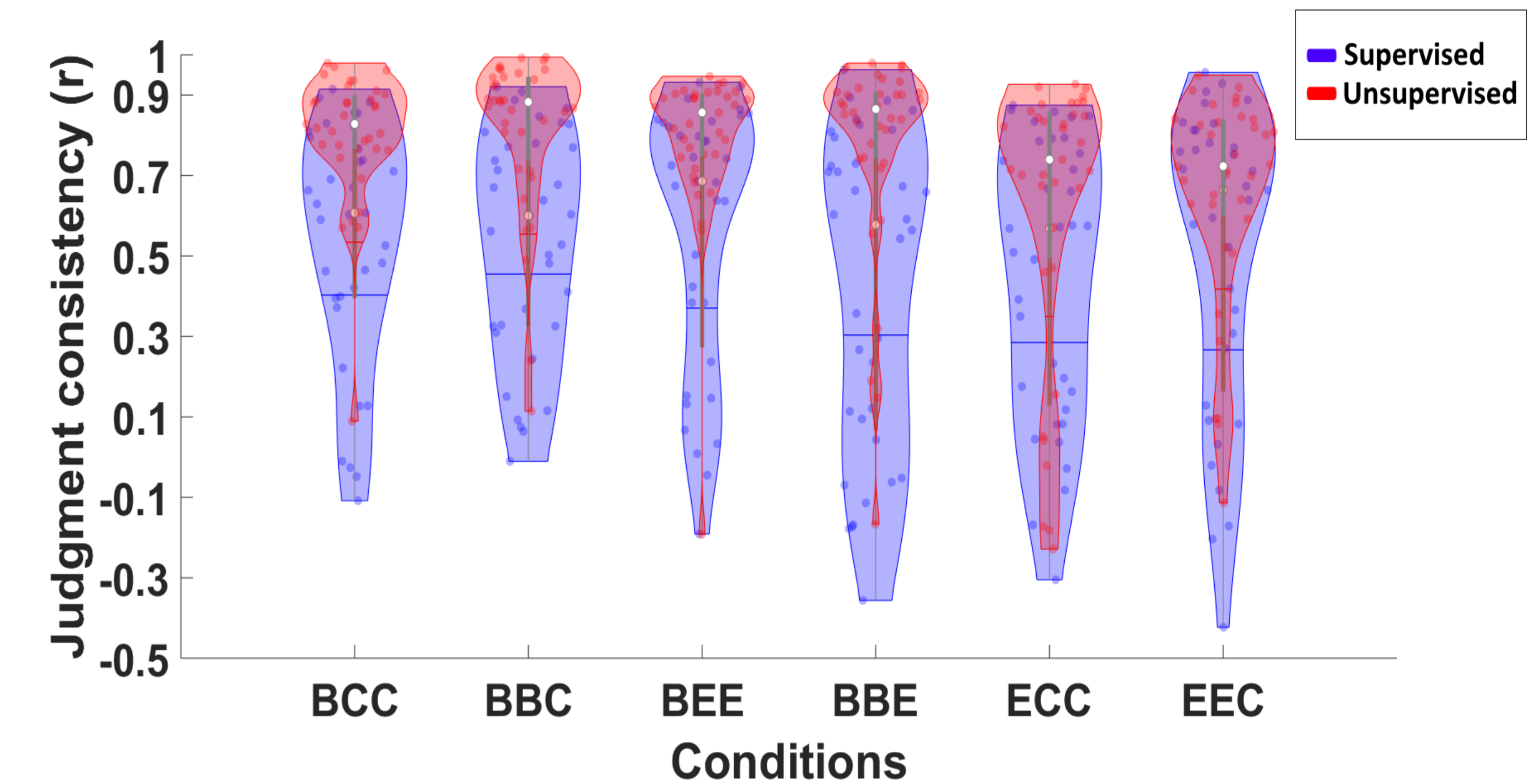
BBC condition:  
Two lines with high variability  
(B) distribution and one line with low variability (C) distribution

## Judgment consistency

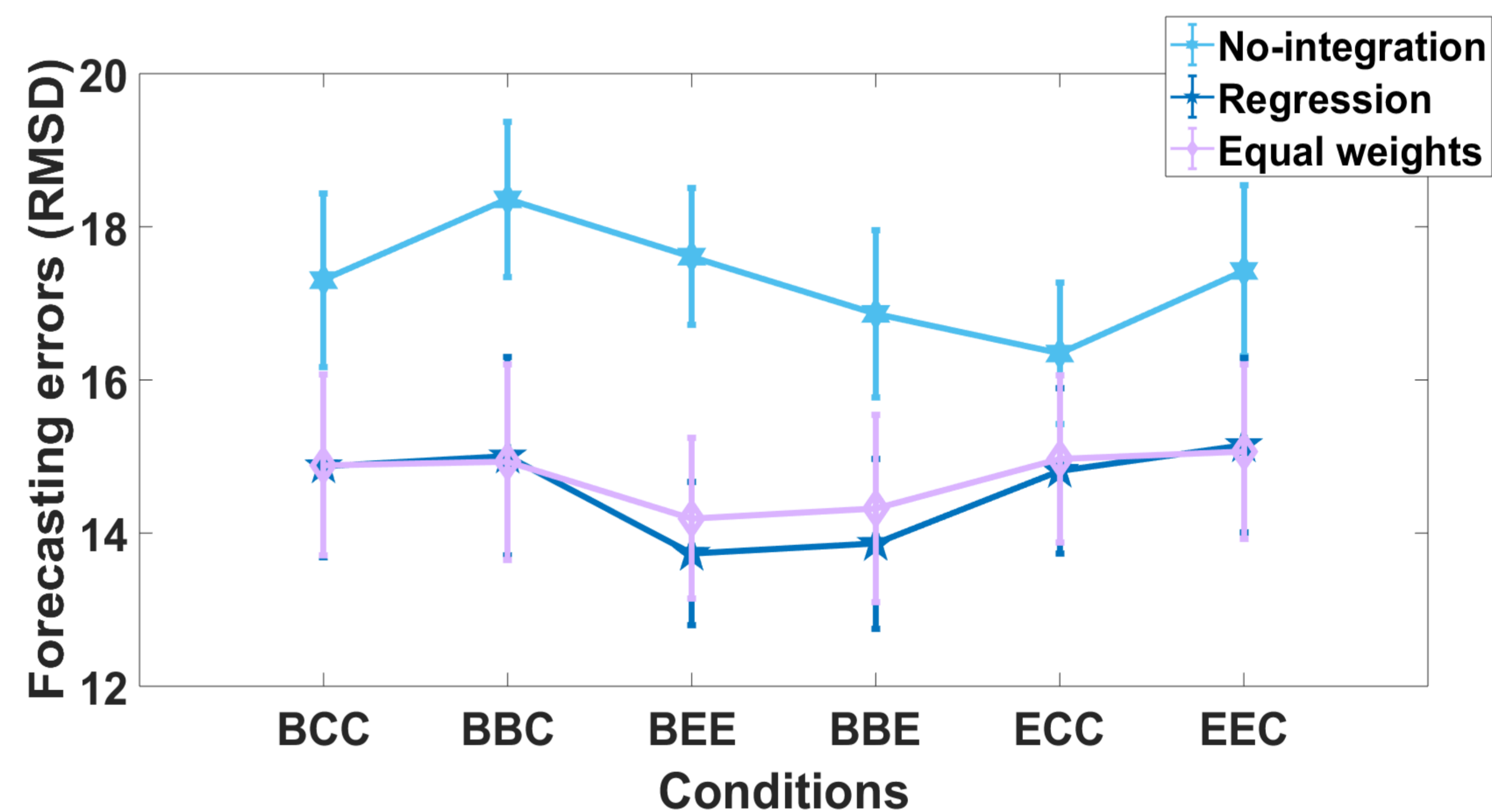
A two way ANOVA results suggested that participants were less consistent in the conditions with less variable cues,  $F(2, 205) = 13.5, p < .001 \eta^2 = .12$ . Participants in the yoked supervised group were consistent ( $r = 0.59$ ), suggesting they were able to learn the judgments from the unsupervised group.

## References

- Ashby, F. G., Queller, S., & Berretty, P. M. (1999). On the dominance of unidimensional rules in unsupervised categorization. *Perception and Psychophysics*, 61(6).
- Eil, S. W., & Ashby, G. G. (2012). The impact of category separation on unsupervised categorization. *Attention, Perception, and Psychophysics*, 74(2), 466–475.
- Colreavy, E., & Lewandowsky, S. (2008). Strategy development and learning differences in supervised and unsupervised categorization. *Memory and Cognition*, 36(4), 762–775.
- Pothos, E. M., & Chater, N. (2002). A simplicity principle in unsupervised human categorization. *Cognitive Science*, 26(3), 303-343.



Forecasting errors indicate that strategies integrating all cues, e.g. a regression, predict participants' unsupervised judgments better than single-cue strategies.



Note. Error bars indicate  $\pm 1$  SE.

## Judgment policies in unsupervised judgments

Participants were **highly consistent in their judgements** in all conditions. Assuming they used rule-based strategies, they focused on **variability of the cues** and **integrated** them. Moreover, participants from the yoked supervised group were **able to pick up the judgments** made by their pairs, but they were, as expected, consistent to a lesser degree.

## Contact

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## An unsupervised judgment task with three cues

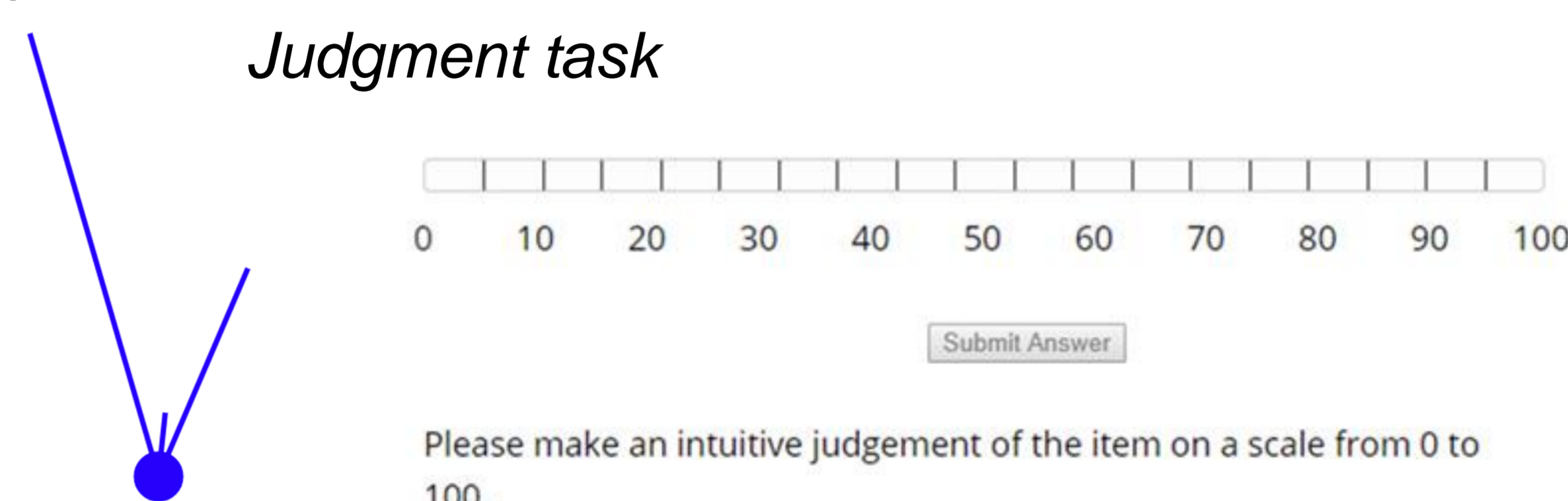
Experiment 1 (211 participants)

Experiment 2 (yoked supervised\*)

(114 females,  $M_{Age} = 36.1$ )

(75 females,  $M_{Age} = 33.6$ )

Participants repeatedly judged multiple-cue objects, consisting of three lines varying in length, on a subjective scale from 0-100. In Experiment 2, the judgments from a previous participant served as feedback.



\*Each participant from the Experiment 1 was paired with one participant from Experiment 2 and got his judgment as a feedback in the training phase