

Implicit Learning: Verification vs. Generation Tasks

Hanit Galili^{1,2}, Avishai Henik^{2,3}

¹Department of Cognitive and Brain Sciences, ²Zlotowski Center for Neuroscience, ³Department of Psychology
Ben-Gurion University of the Negev, Beer-Sheva, Israel

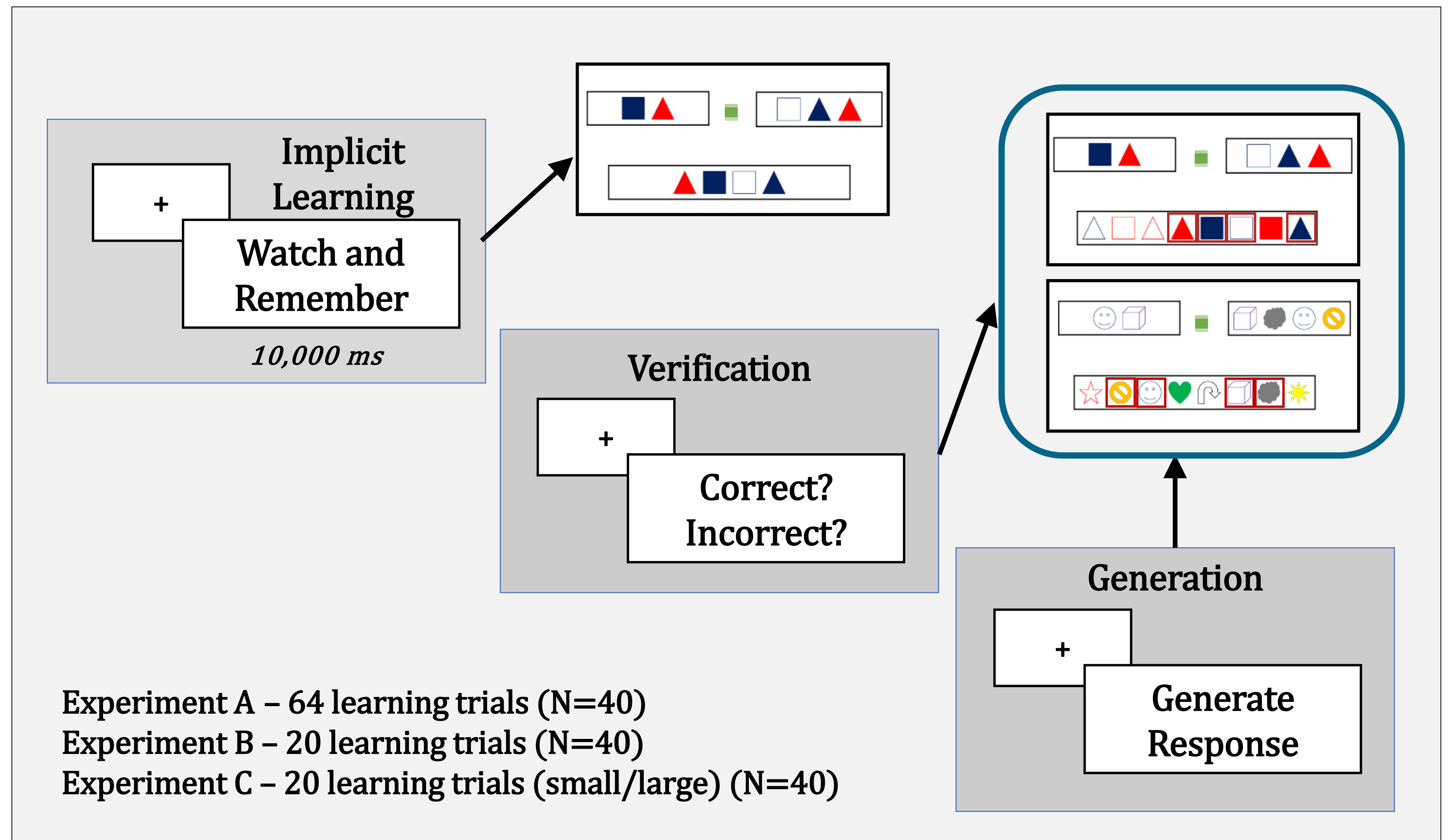


Introduction

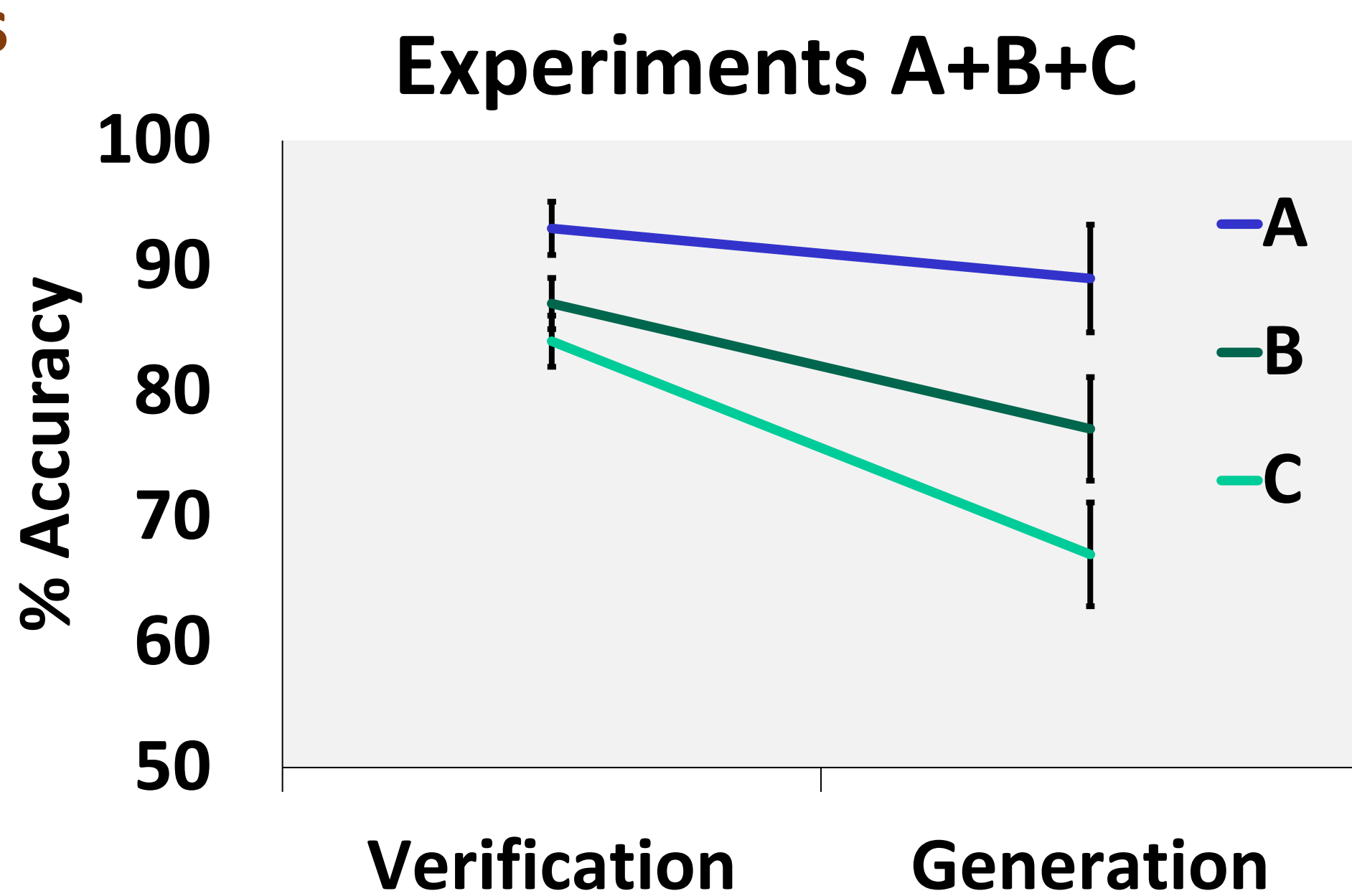
- Verification tasks are used in implicit learning experiments to evaluate learning outcomes.
- While partial understanding of a rule may be sufficient to succeed in a verification task, a full understanding of the rule is required in order to succeed in creating a correct result.
- In a set of 3 studies, participants learned the union operation implicitly.
- We checked accuracy rates in both a verification and a generation task.

Method

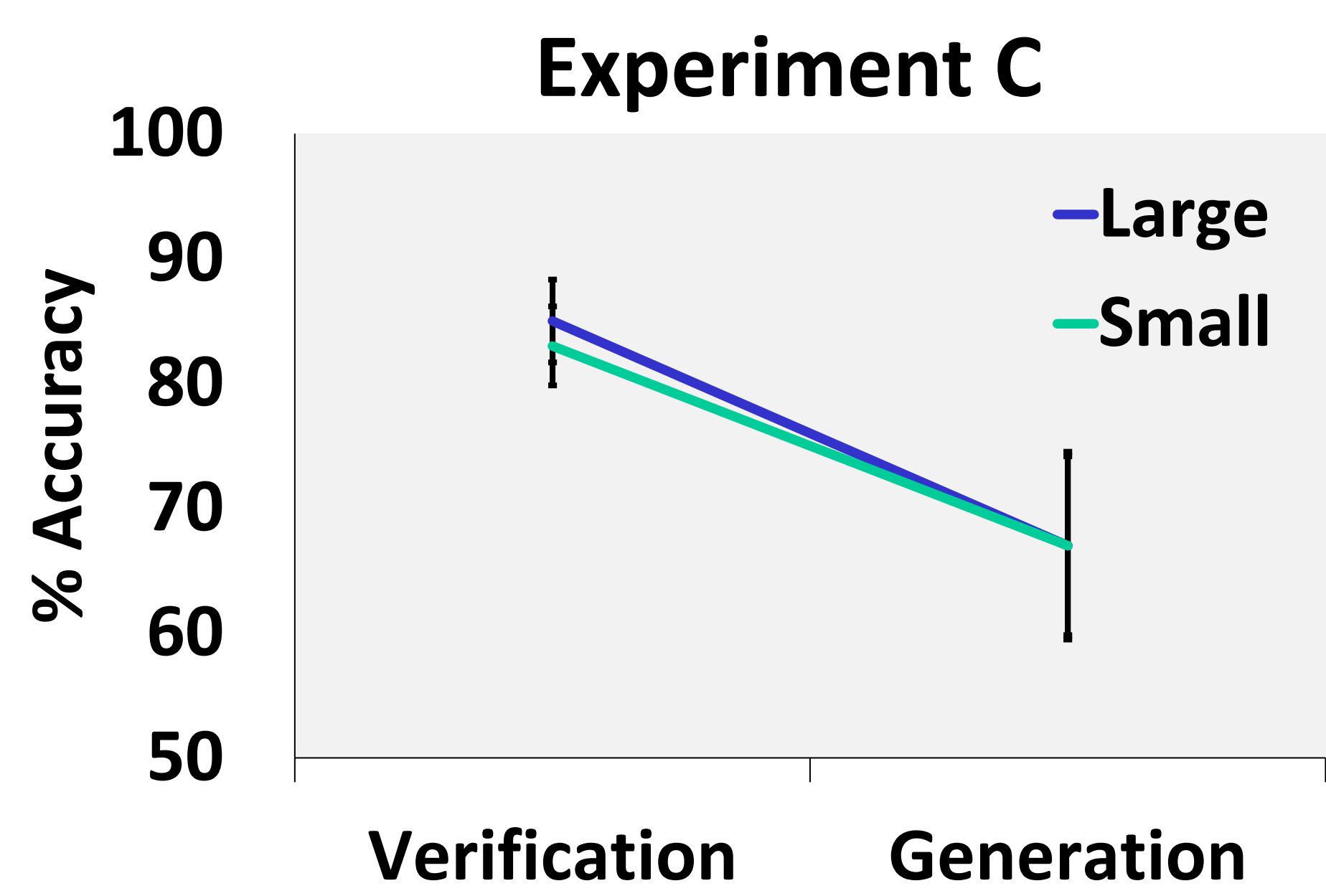
- Participants were shown a set of correct examples of the union rule. They were asked to memorize what they saw. They were unaware that all stimuli corresponded to any rule.
- Only later, they were told that all stimuli matched some rule.
- We used a verification task and a generation task to check if they learned the rule. In the verification task they were shown correct and incorrect examples of the rule and were asked to answer whether the stimuli matched the (union) rule. In the generation task they were shown 2 groups of objects and were asked to generate the correct response by choosing the objects that belonged to the union group.



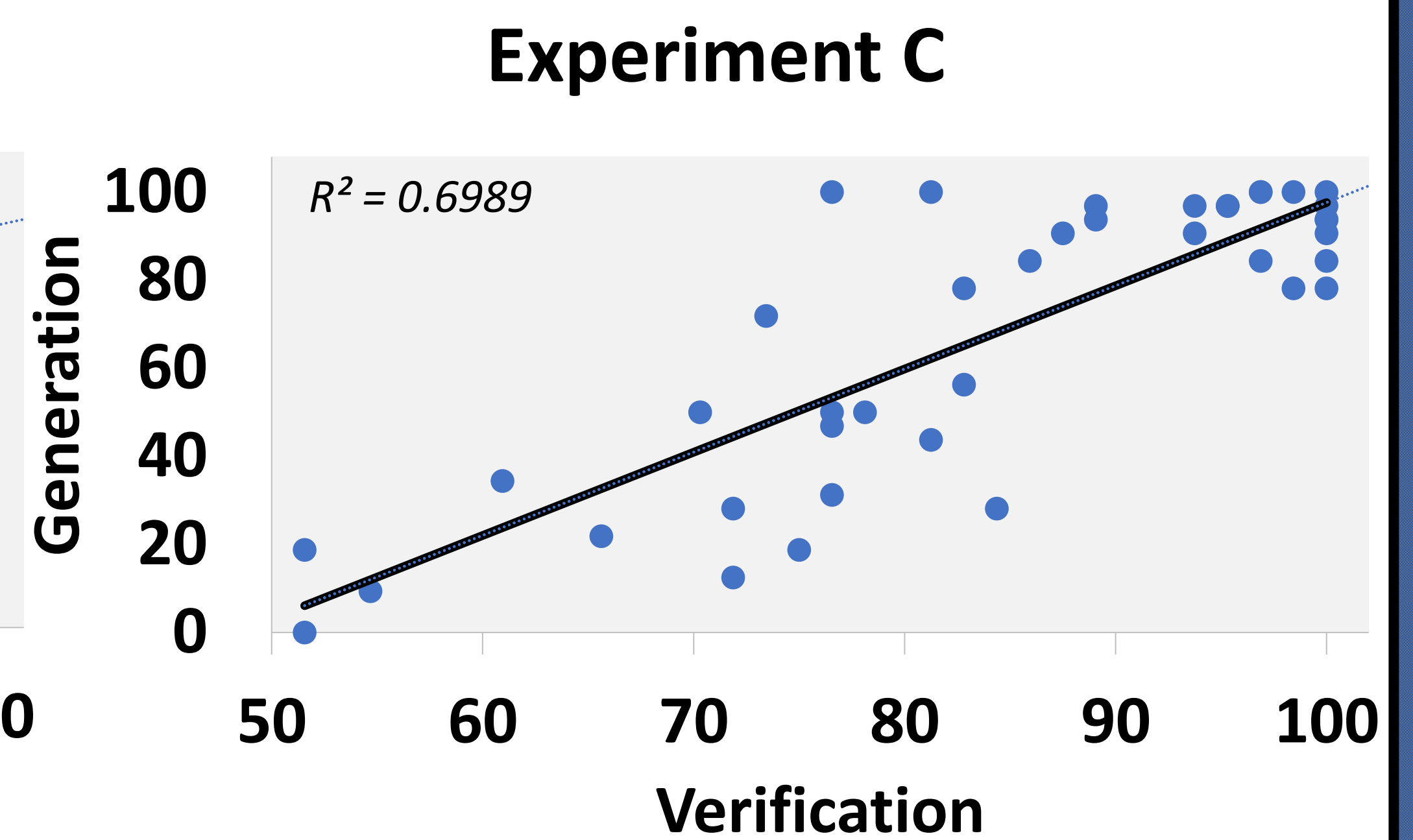
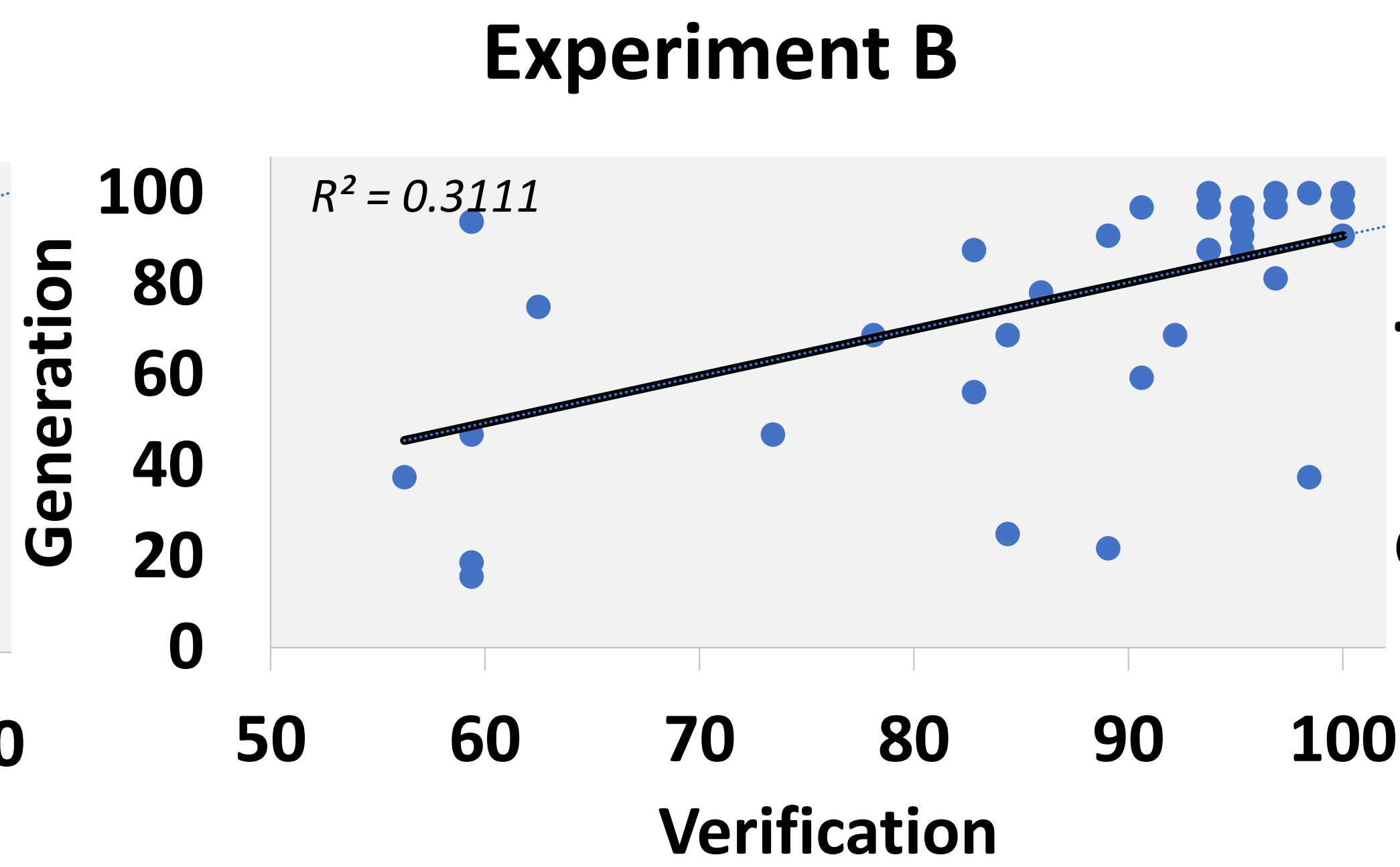
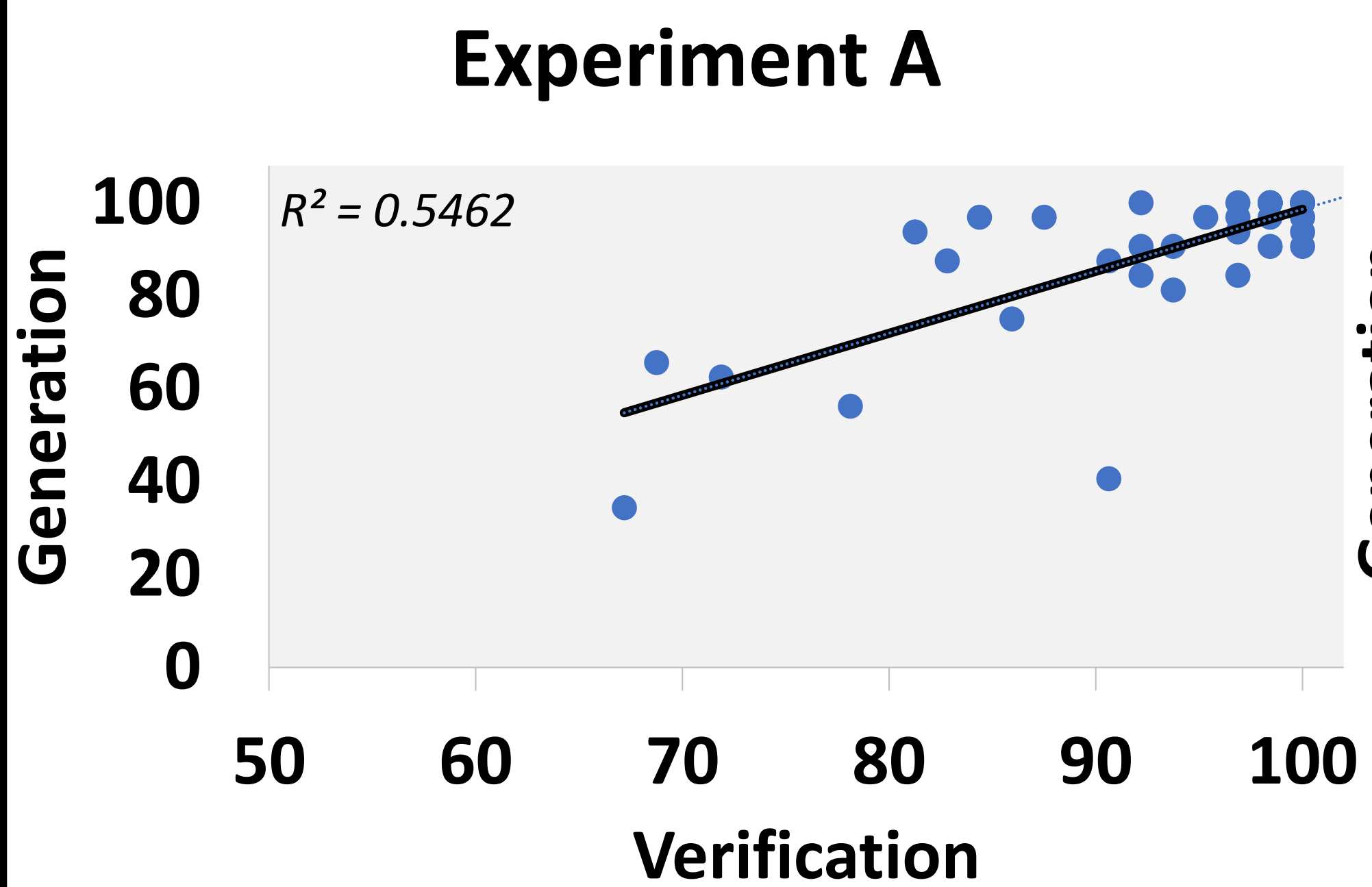
Results



Experiment : $F(2,114)=6.48, p=.002, \eta^2=.102$ **
 Task : $F(1,114)=32.26, p<.001, \eta^2=.221$ ***
 Experiment*Task : $F(2,114)=4.24, p=.017, \eta^2=.069$ *



Example Size : $F(1,38)=0.02, p=.885, \eta^2=.001$
 Task : $F(1,38)=22.61, p<.001, \eta^2=.373$ ***
 Example Size*Task : $F(1,38)=0.09, p=.771, \eta^2=.002$



Discussion

- As expected, accuracy rates in the verification task were higher than in the generation task, possibly due to the deeper understanding that is required for generating a response.
- Heterogeneous examples contribute to learning. If you can only give a limited number of examples, take care of the variety.
- In all 3 experiments a correlation between the accuracy rates of the verification and the generation test was found suggesting that those who have better results in one task, will also have better results in the second task.

Read it online:



Email: hanit.galili@gmail.com