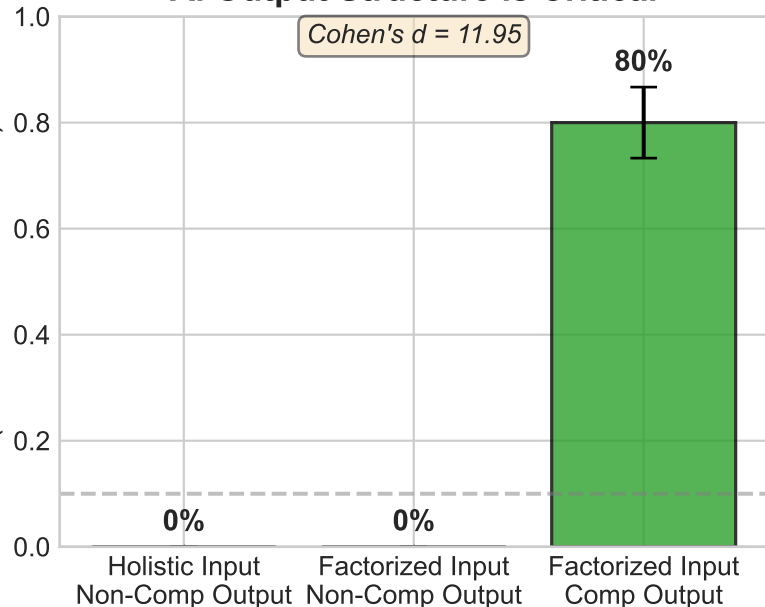
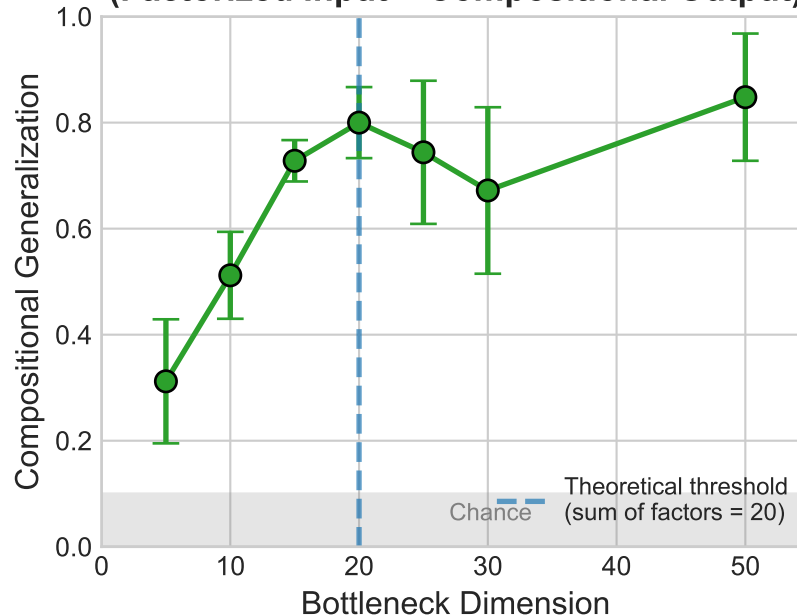


Compositional Generalization
(Both Factors Correct)

A. Output Structure is Critical



B. Bottleneck Sweep (Factorized Input + Compositional Output)



C. Summary

KEY FINDING

Compositional generalization requires compositional structure END-TO-END:

- ✗ Holistic input + Non-comp output → 0%
- ✗ Factorized input + Non-comp output → 0%
- ✓ Factorized input + Comp output → 80%

INTERPRETATION

Output structure acts as an **INDUCTIVE BIAS** that constrains the solution space.

Non-compositional output permits memorization; compositional output **FORCES** compositional solutions.

THEORETICAL IMPORT

Supports APH Section 9.2 with refinement: Conditions apply to **ENTIRE** pipeline, not just representation learning.

Reference: Lake & Baroni (2018), ICML