Sequential Construction of Visual Relations
Alon Hafri, Zekun Sun, & Chaz Firestone
Johns Hopkins University

Motivation
Visual scenes contain objects... ...but also relations!

Question
How does the mind combine objects into relational representations?

Hypotheses
#1: There is a canonical sequential order for “building” relations
Simultaneous
But which object comes first?

#2: A distinction inspired by psycholinguistics
 Sequential
“Reference objects” vs. “Figure objects”. Try it here!

Production: Compose the scene
Do people build scenes in a preferred order?

Do people recognize scenes in a preferred order?

Reference objects are primary in relational scene production!

Reference objects are primary in relational scene recognition!

Other Objects
Other Relations & Sentence Orders

Participants overwhelmingly placed the reference object first!

Participants recognized scenes faster when the reference object appeared first!

Recognition: Verify scene description

Reference objects

Simultaneous

Production

Recognition

Figure objects: small, mobile… last
Reference objects: large, stable… first

I’m starting a lab! Want to join?

“The laptop is on the desk.” Continue when ready.

“Referenced first” vs. “Figured first”
References placed first more often

Fig.-First – Ref.-First

Mean: 0.50

Time: 300 ms

Mean RT = 828 ms; Mean Accuracy = 96%

Mean: 1.00

Time: 500 ms

Mean: 0.50

Time: 300 ms

Reference objects

Simultaneous

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