Statistical learning creates novel object associations via transitive relations

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What mechanism supports novel associations between objects?

**Experiment 1: Does statistical learning form novel associations?**
- **Base pairs**
  - A - B
  - B - C
  - C - D
- **Transitive pairs**
  - A - C
  - D - F
  - G - I

**Exposure: 1-back task over a sequence of base pairs**
**Test phase: Which pair looks more familiar?**

**Experiment 2: What is the limit of this inference?**
- **Base pairs**
  - A - B
  - B - C
  - C - D
- **Transitive pairs**
  - A - D

**A limit of 2 pairs in transitive inference**

**Experiment 3: What explains the limit?**
- **Base triplets**
  - A - B - C
  - B - C - D
  - C - D - E
- **Sub-pairs**
  - A - B
  - B - C
  - C - D

**Constrained by the number of pairs**

**Experiment 4: Do it generalize to categorical relations?**
- **Transitive pairs (country)**
  - USA France
  - Thailand Japan
  - UK Spain
  - Canada China
- **Transitive pairs (city)**
  - London Barcelona
  - New York Paris
  - Tokyo Beijing
  - London Barcelona

**Exposure: 1-back task over a sequence of base pairs (city)**
**Test phase: Which pair looks more familiar?**

**Experiment 5: What is the limit of the inference?**
- **Transitive pairs (country)**
  - USA France
  - Japan
- **Transitive pairs (city)**
  - New York Paris

**Limited to one superordinate category**

**Experiment 6: Is the limit specific to superordinate level?**
- **Transitive pairs (park)**
  - Central Park Mars Park
  - Hyde Park
  - Champs de Mars Park

**Limited to one subordinate category**

Statistical learning provides a scaffold through which new object associations are transitively created.