

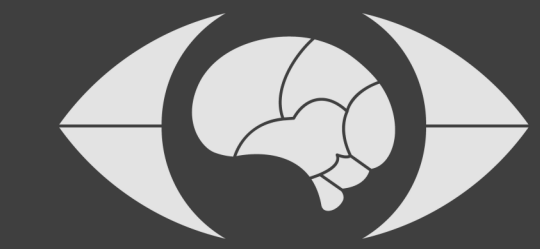
THINGS+: New Norms and Metadata for the THINGS Database of 1,854 Object Concepts and 26,107 Natural Object Images



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BACKGROUND

- Need for well curated object concepts and image stimuli
- But: most classical object & image databases face several limitations
 - e.g., too small, unstandardized selection, non-naturalistic images ...

THINGS database (Hebart et al., 2019)

- 1,854 systematically selected object concepts
- 26,107 naturalistic images of those objects
- Memberships for 27 higher-level categories



- **THINGS+:** New object & image specific norms, metadata & license free object images

METHOD

- 8,353 individual workers from Amazon Mechanical Turk

Object Specific Norms & Metadata

- (1) **Object property** ratings (7-point Likert scale; N=40/obj.)
manmadeness, aliveness, heaviness, naturalness, ability to move, graspability, holdability, ability to be moved, preciousness, pleasantness, & arousal level
- (2) + 26 manually assigned **higher-level category** memberships
- (3) **Typicality** ranks (N≈100/member)
- (4) Real-world **size and size range** (N=50/obj.)

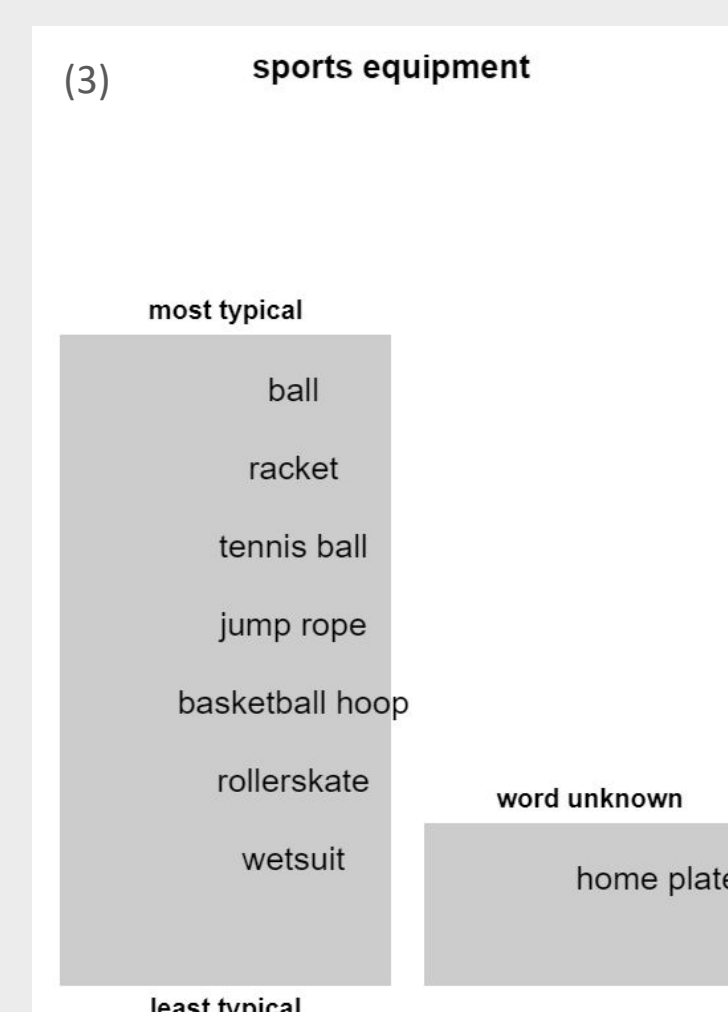
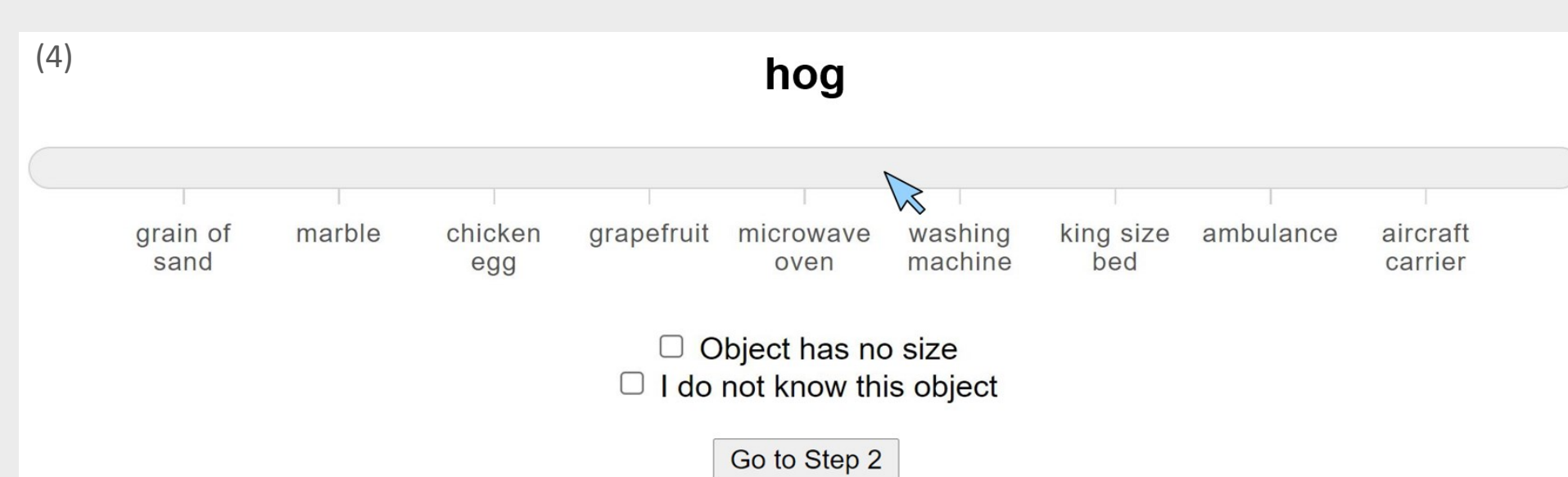
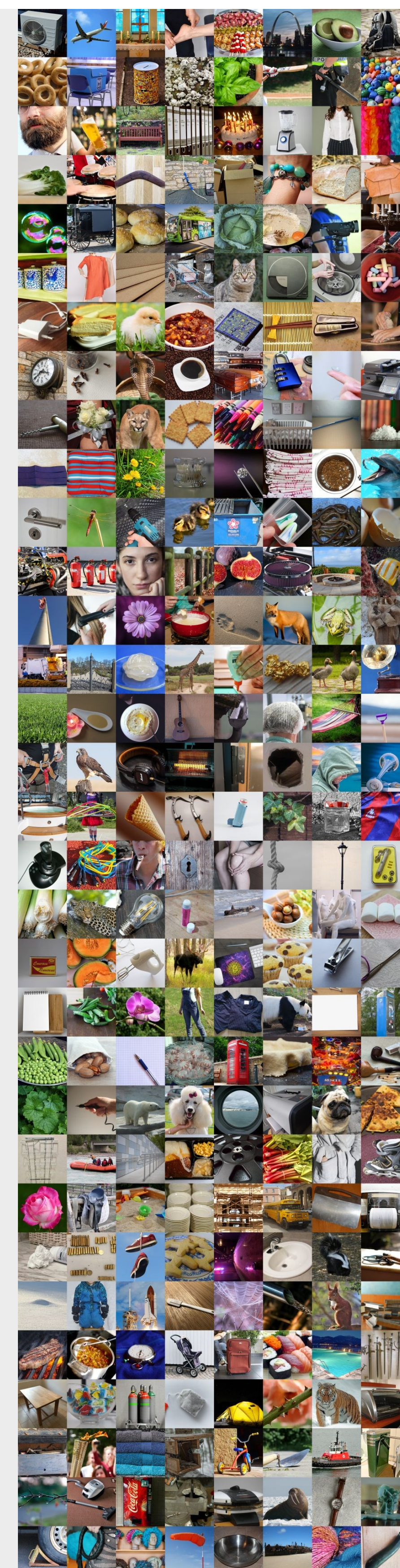
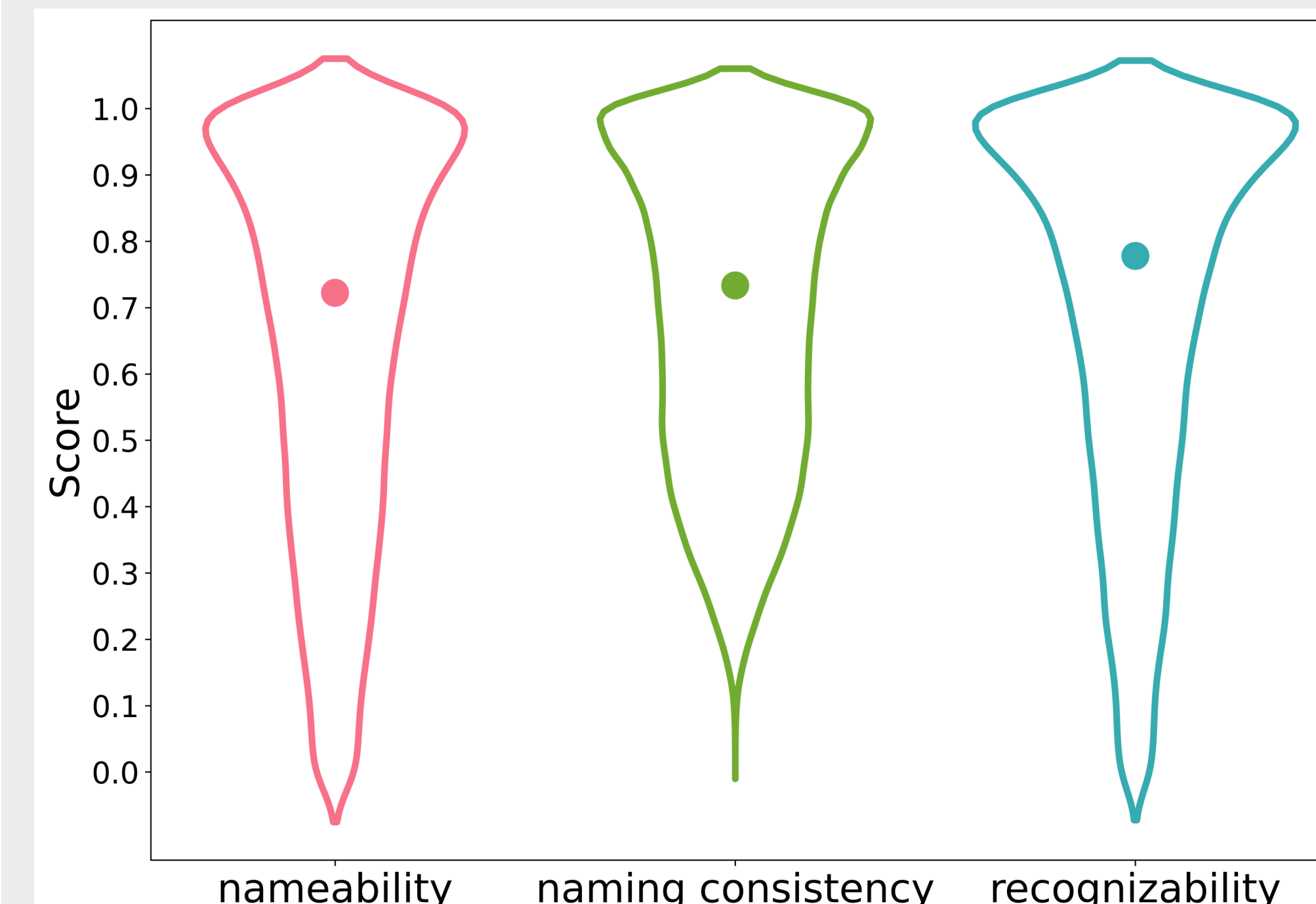


Image Specific Norms & Metadata

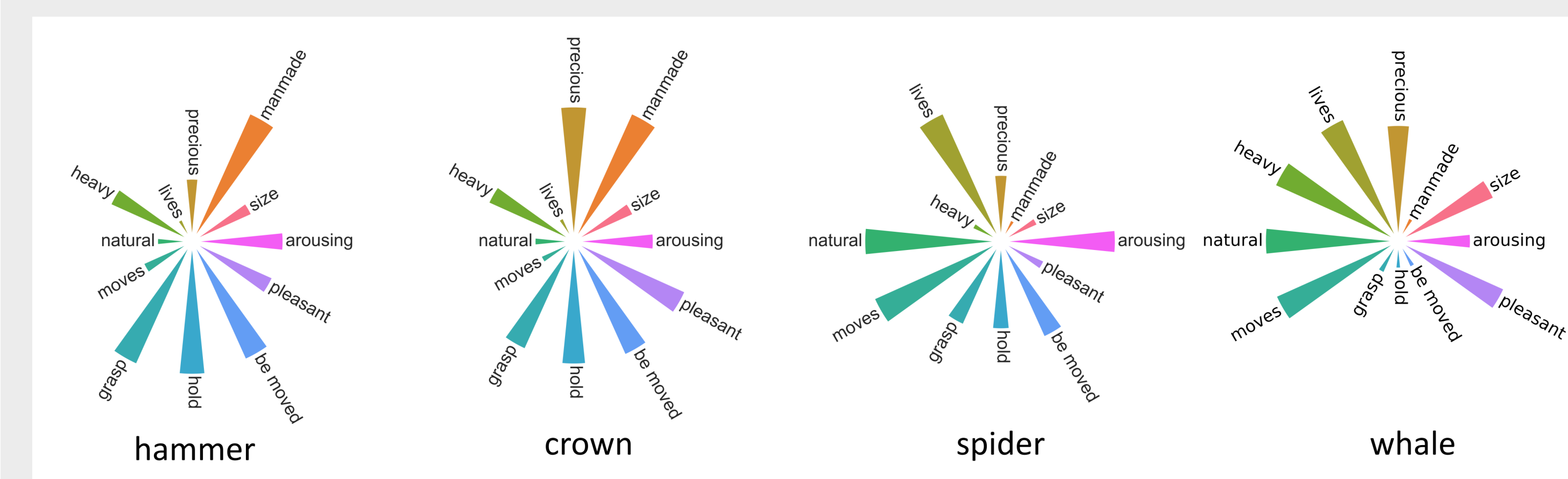
- (5) Participant generated **image labels** (N=20/image)
 - concept nameability (% identical labels)
 - recognizability (% identical or synonymous labels)
 - naming consistency (% most common label)
- (6) 1,854 novel, manually selected **public domain images**



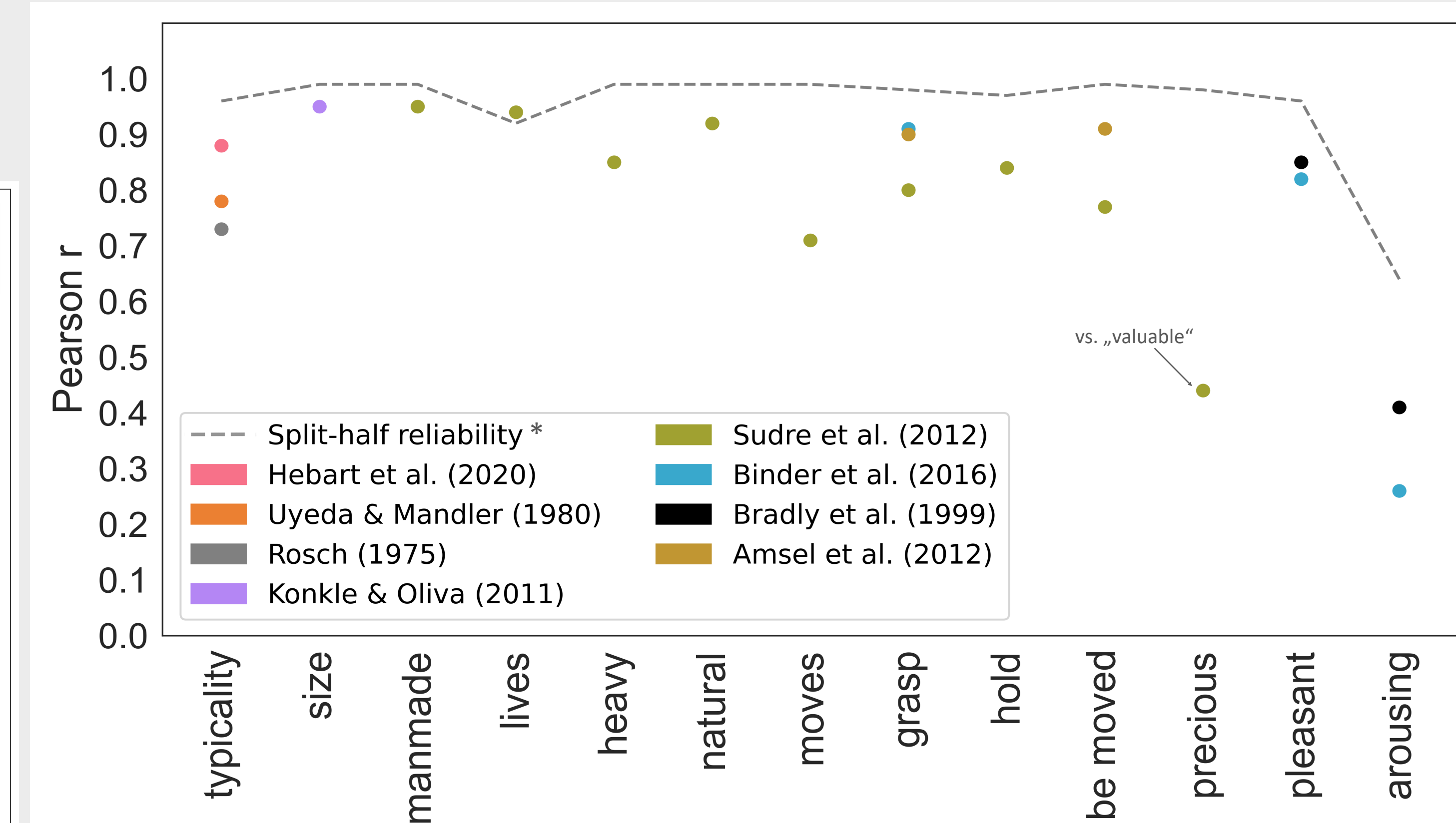
- Image-wise distribution of concept naming consistency, nameability & recognizability



- Object properties of four example concepts

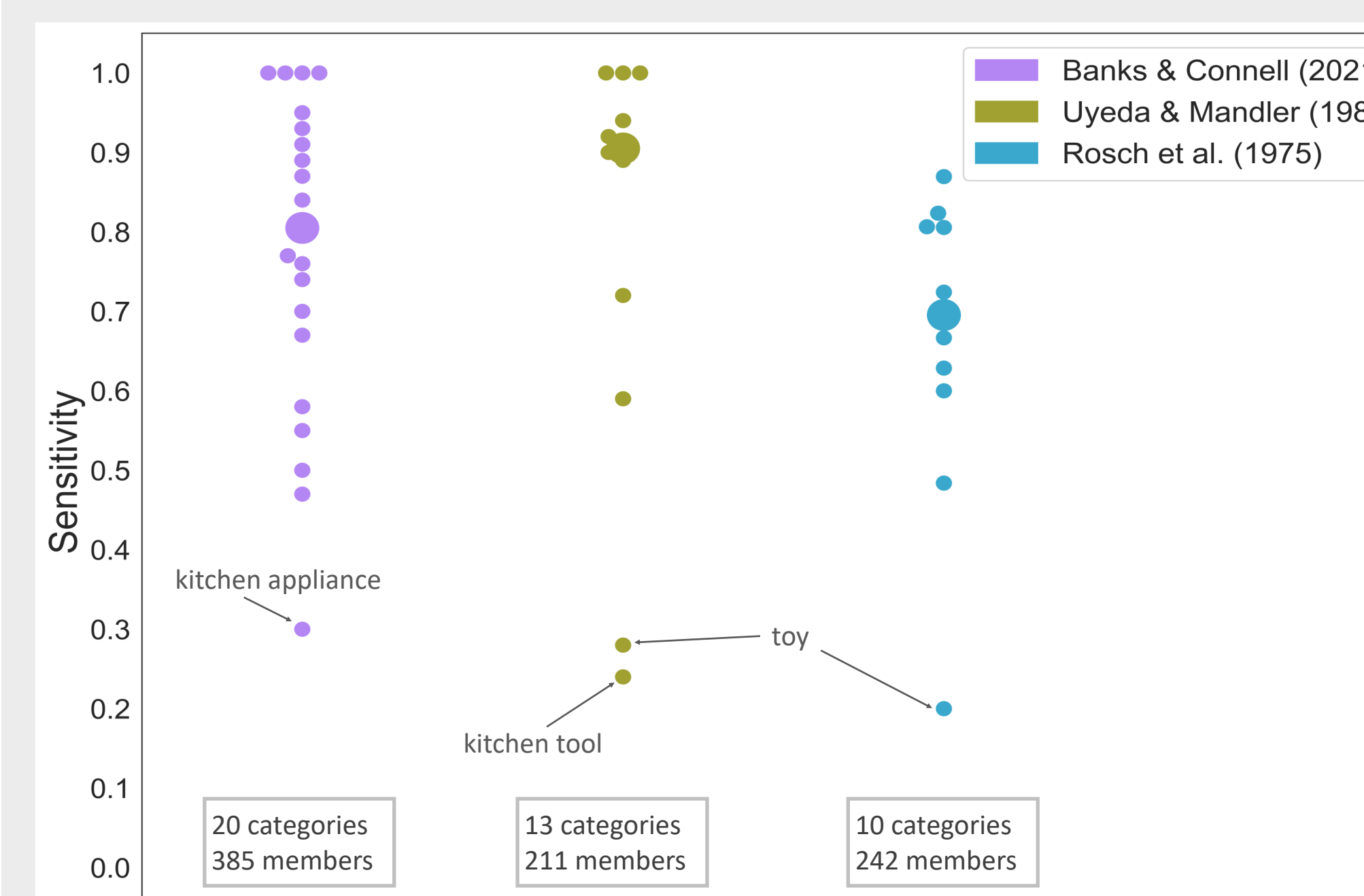


- Ratings consistency (split-half reliability) & correlation of object norms with external data sets



* Spearman-Brown corrected

- Sensitivity (% equally categorized members) per higher-level category



DISCUSSION

Conclusion

- THINGS+ = valuable resource of object concepts, object images, & related norms and metadata
- Allows elaborate and standardized selection of stimuli & control variables
- **THINGS Initiative:** Comparing results & sharing data

Limitations

- Low to moderate validity of arousal ratings
- Inconsistent definition of exclusion criteria
- Compromises due to availability or efficiency

Future directions

- Image curvature & rectilinearity
- Image segmentation

... what else?



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