Object Color Preferences

Karen B. Schloss[1], Eli D. Strauss[2], and Stephen E. Palmer[1,2]

[1]Department of Psychology, [2]Program in Cognitive Science, UC Berkeley

Do color preferences vary for different objects?

US preferences for abstract "contextless" colored squares

Hue. Peak at blue, trough around yellow - chartreuse.

Saturation. Saturated colors preferred to Light and Muted colors.

Lightness. Preference for dark red and dark green versus dislike for dark yellow (olive) and dark orange (brown) relative to Light and Muted colors.
(Palmer & Schloss, 2010)
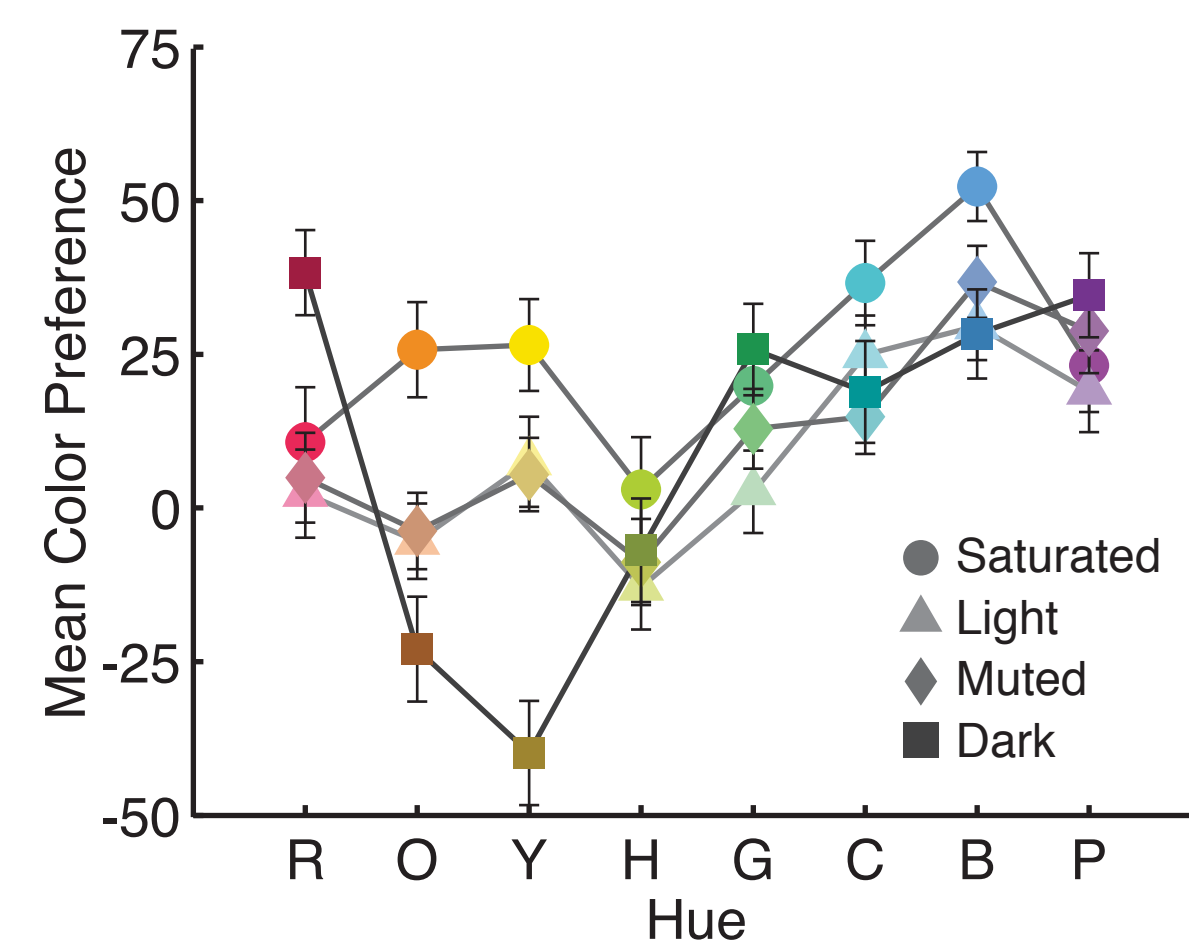
Research Questions:

1. **Do abstract color preferences generalize to other objects/contexts?**

   Not for objects with diagnostic colors ...

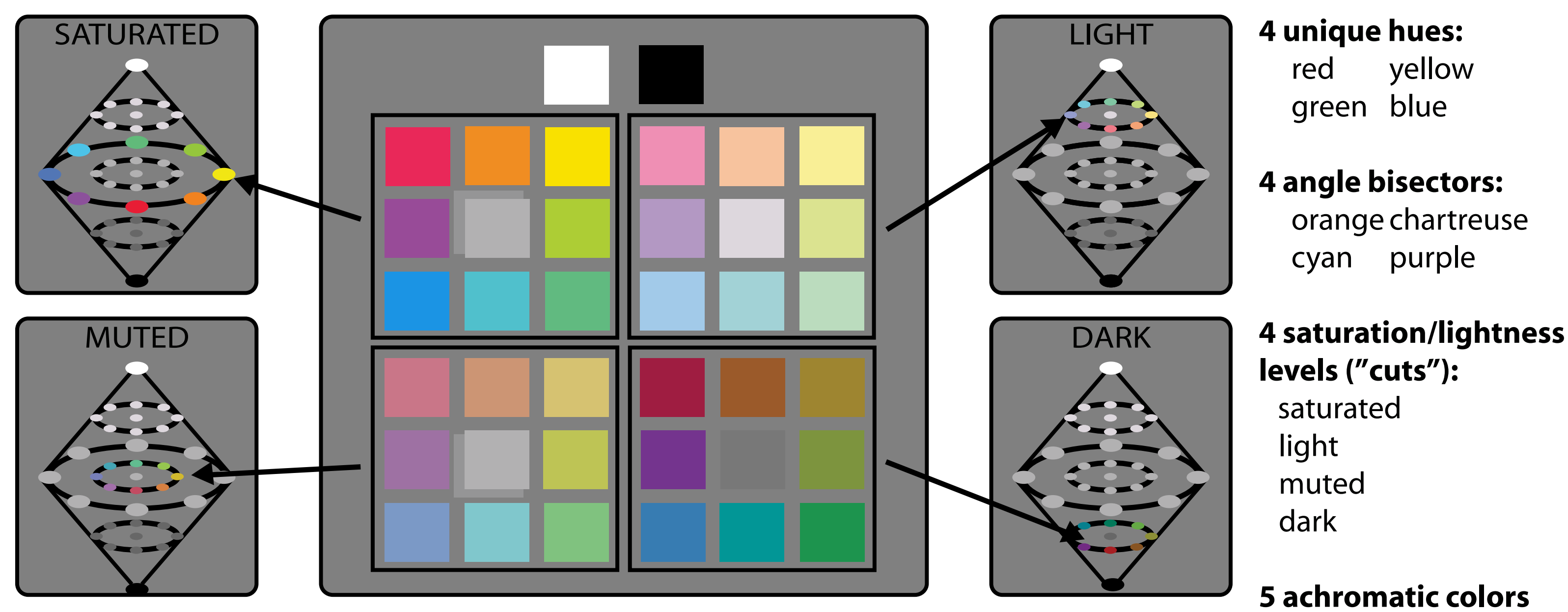   ... but what about objects that can be any color?

2. **Why might color preferences vary across object contexts?**
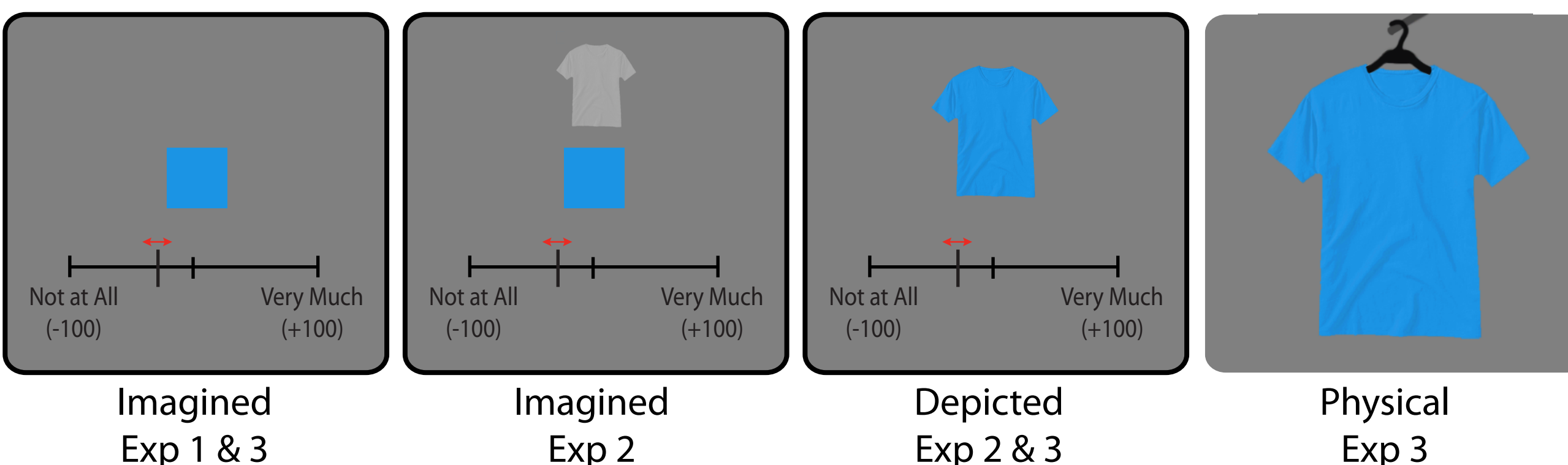   Appropriateness/conventionality (Sivik, 1974; Whitfield & Slatter, 1978; Taft, 1997)
   Desired emotional experience (Manav, 2007; Destefani and Whitfield, 2008)

3. **How good are people at imagining their color preference for a particular object without seeing the colored object?**

General Methods

4 unique hues:
red yellow
green blue

4 angle bisectors:
orange chartreuse
cyan purple

4 saturation/lightness levels ("cuts"):
saturated
light
muted
dark

5 achromatic colors

How much do you like this color for ...
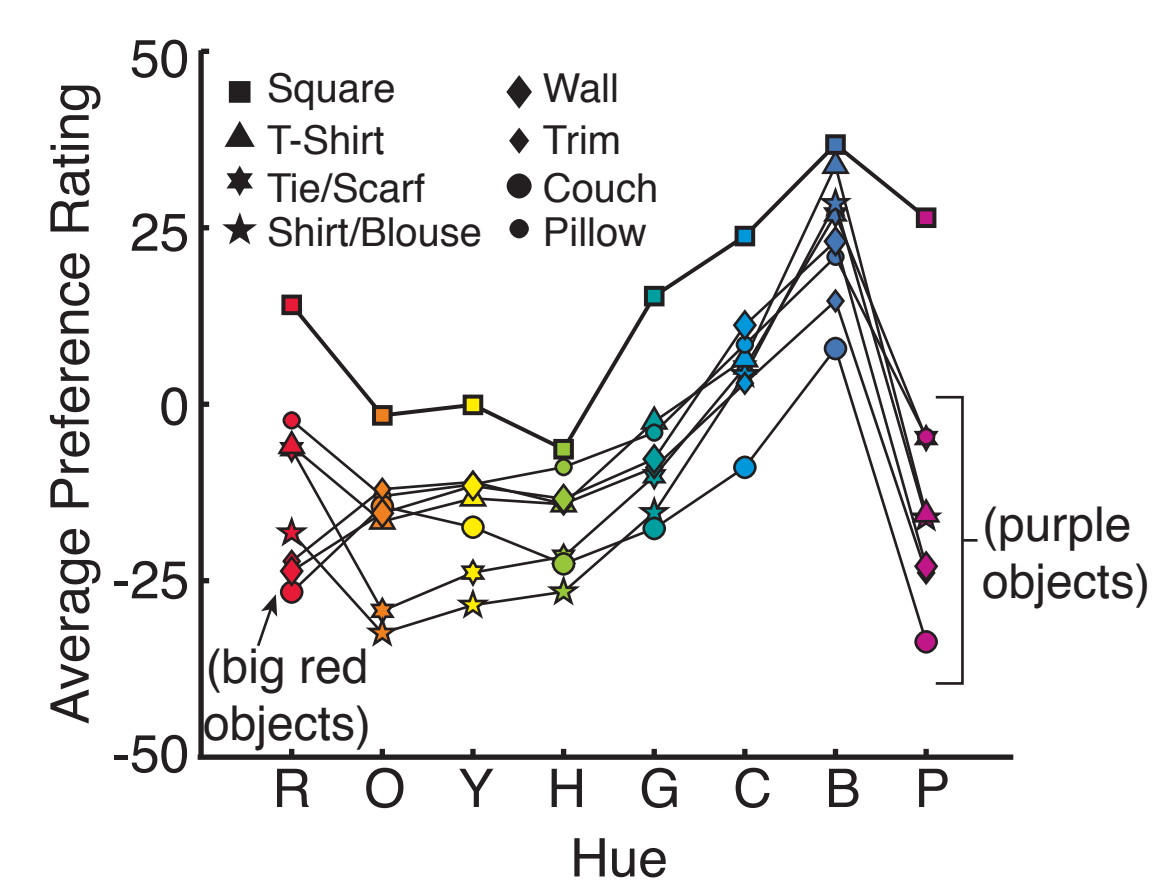

...T-shirts?
...walls?
...trim?
...couches?
...throw pillows?
...dress shirts/blouses?
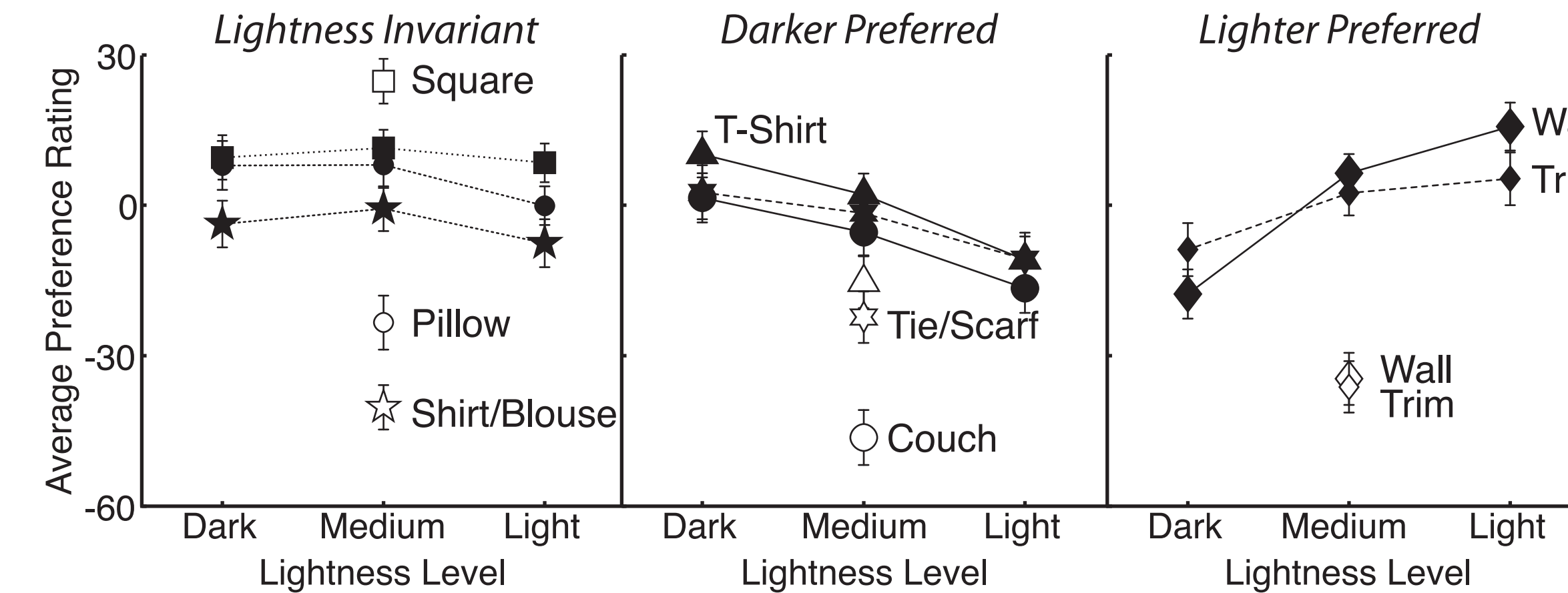...ties/scarfs?
...luxury sedans?
...VW Bugs?

Imagined Exp 1 & 3
Imagined Exp 2
Depicted Exp 2 & 3
Physical Exp 3

Color preferences vary across objects

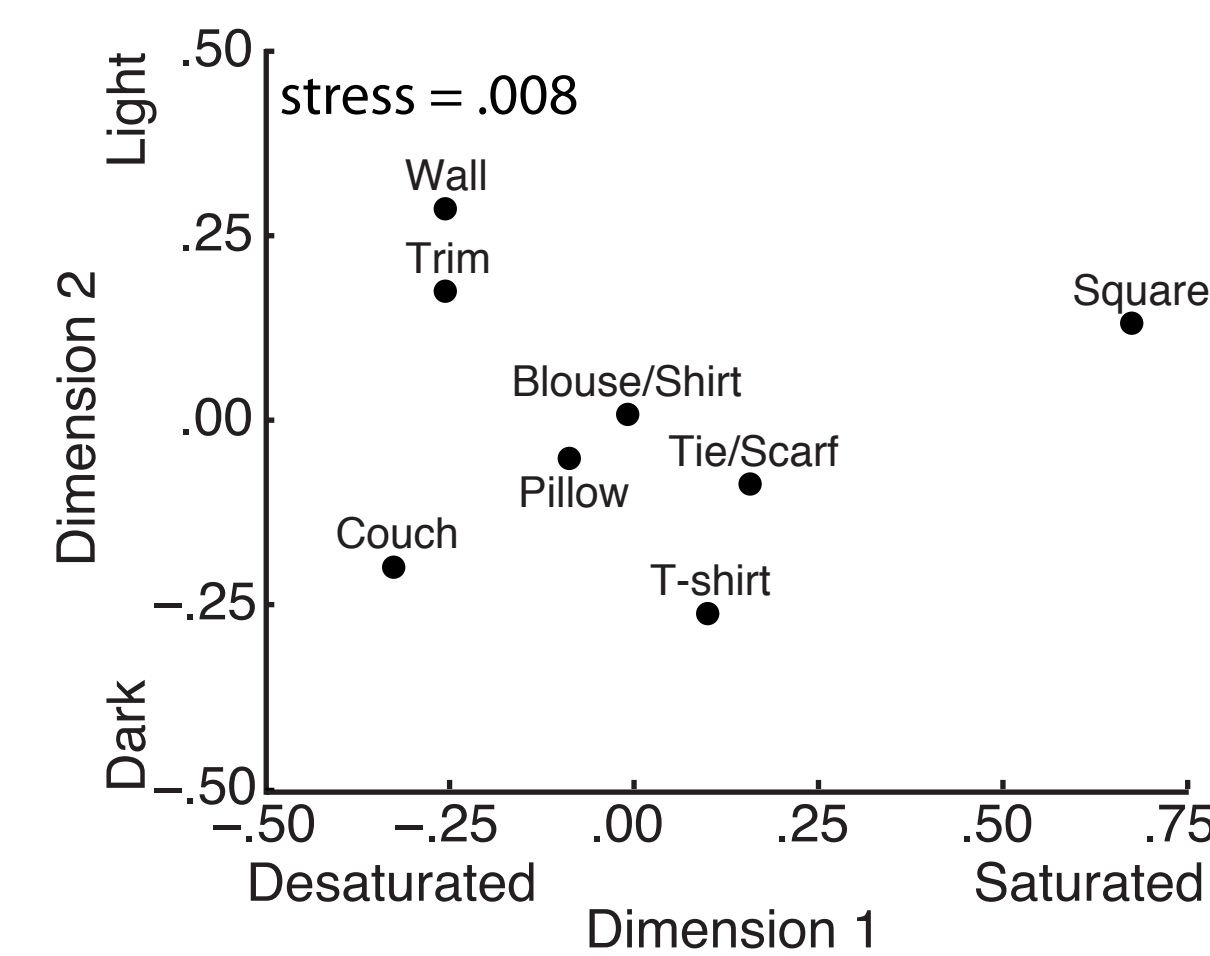### Experiment 1: Imagined Object Color Preferences

Consistent Preferences for Hue

Variable Preferences for Saturation and Lightness

Multidimensional scaling (MDS) based on color preference correlations for each pair of objects

Dimension 1 correlates (r = .96) with the difference in preference between saturated and muted colors for each object.

Dimension 2 correlates (r = .94) with the slope of preference functions over lightness levels .

Note: These dimensions are defined by color preferences for the objects, not by inherent color properties of the objects

"Imagined" object preferences generalize well

Experiment 2: Imagined vs. Depicted Object Color Preferences

Imagined and depicted object preferences are highly correlated for all objects, but there are some reliable differences in preference for pictures of colored objects.

Wall r = .94	Couch r = .96	Sedan r = .98	VW Bug r = .89	T-Shirt r = .97
Depicted dark (p < .001) and red (p<.006) walls more preferred	Depicted red (p<.006) couches more preferred	Depicted Sedans preferred (p<.001)	Depicted Bugs in the orange to green range more preferred	No differences

However, when there is a discrepancy between imagined and depicted color preferences, it is not clear which judgment better reflects color preferences for physical objects.

Experiment 3: Imagined vs. Depicted vs. Physical T-shirt Color Preferences

T-shirt color preferences are consistent across tasks
imagined vs. depicted: r = .97
imagined vs. physical: r = .94
depicted vs. physical: r = .95

Functional reasons for object color preferences

Participants reported the following features as important when choosing object colors:
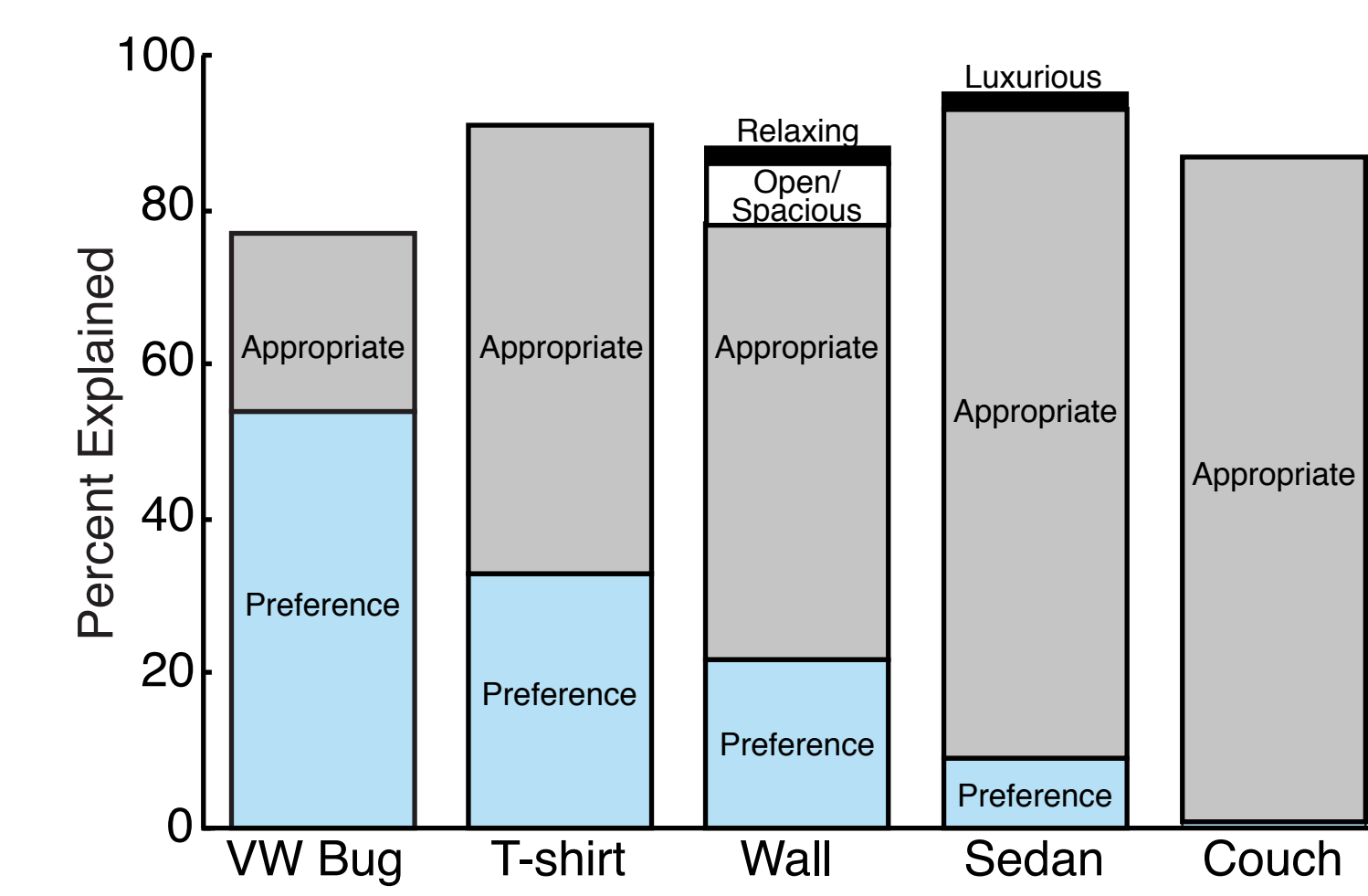
1. Appropriate (all)
2. Relaxing (all)
3. Luxurious (cars)
4. Open/Spacious (walls)
5. Dirt Hiding (couches)
6. Not Police Attracting (cars)

Other participants rated each color for each of these six features, for appropriate objects.
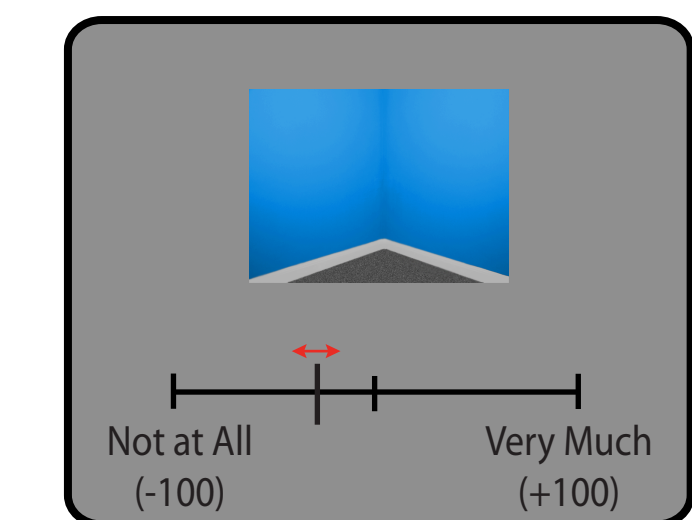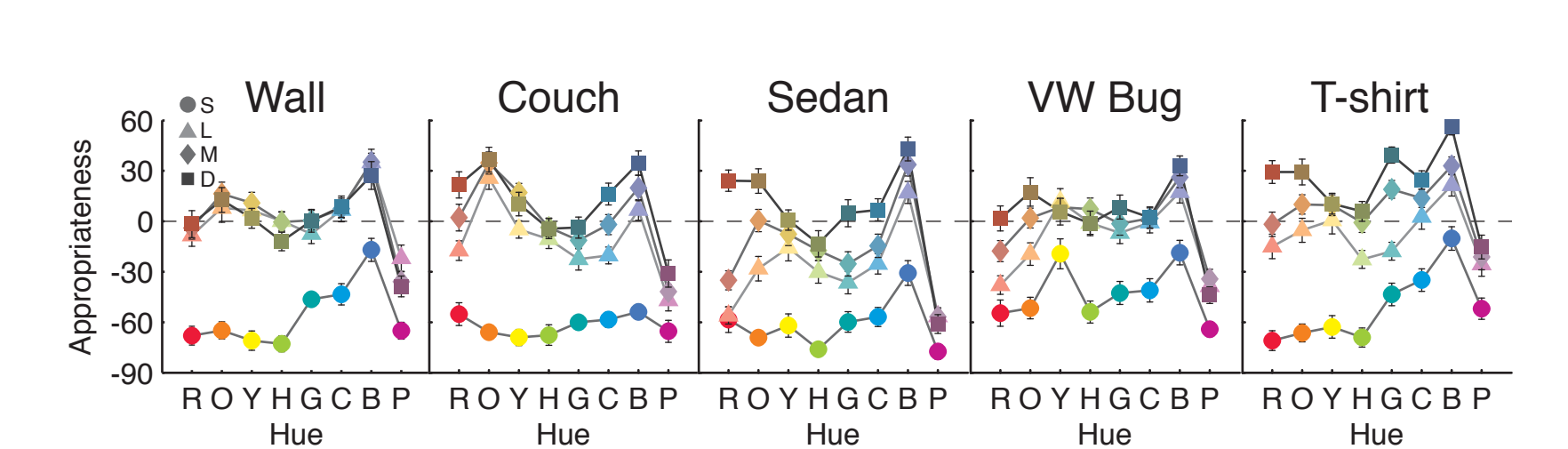

For a wall color, how...
...appropriate?
...open/spacious?
...etc.
is this color?

Functional features explained variance in addition to contextless preferences:

The importance of contextless preference is inversely related to importance of appropriateness, consistent with Taft (1997) and Sivik (1974).

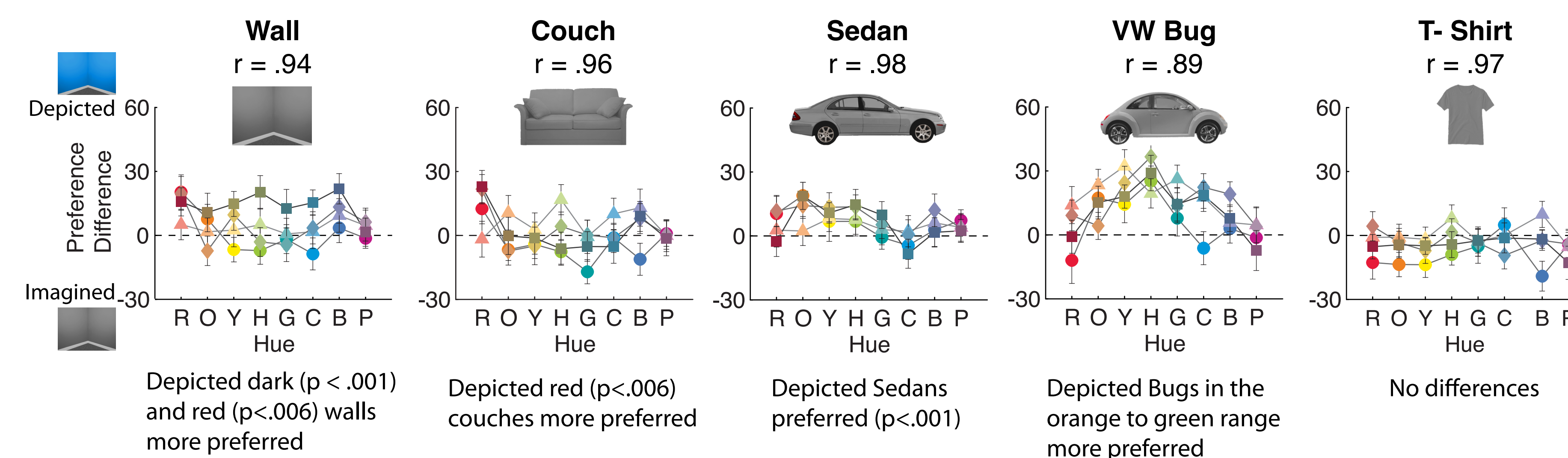**Appropriateness varies across objects:**

Why?

1. They may reflect the ecological statistics of the colors of that type of object (Bayesian priors).

2. Saturated colors may seem inappropriate because they are "loud" and "flashy," which can be undesirable.

3. Objects in appropriate colors may be more recognizable and thus more fluently processed (Reber et al. 2004).
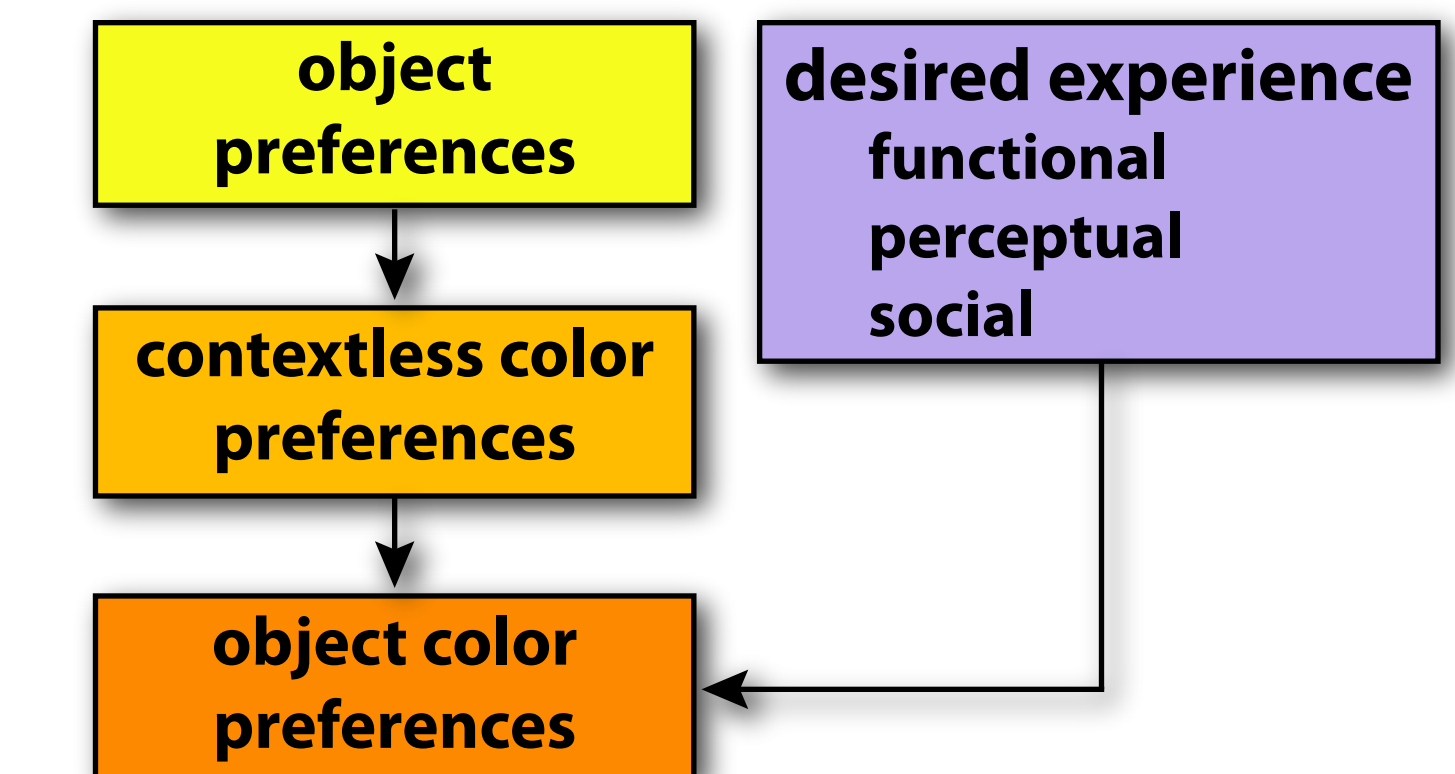
What determines object color preferences?

Low-level biological factors: e.g., cone contrast theory? (Hurlbert & Ling, 2007)

Unlikely, because cone responses would not depend on the object viewed.

Ecological factors: e.g., ecological valence theory (EVT)? (Palmer & Schloss, 2010)?

Highly likely, because EVT is based on the degree of liking/disliking colored objects. However, a direct application is inappropriate because people do experience every object in every color.

The EVT must be augmented to include effects of desired experiences with objects.

References and Acknowledgments

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