Bank of Standardized Stimuli (BOSS) Updated: 1,420 Normative Photos of Various Concepts to be Used in Cognitive Science

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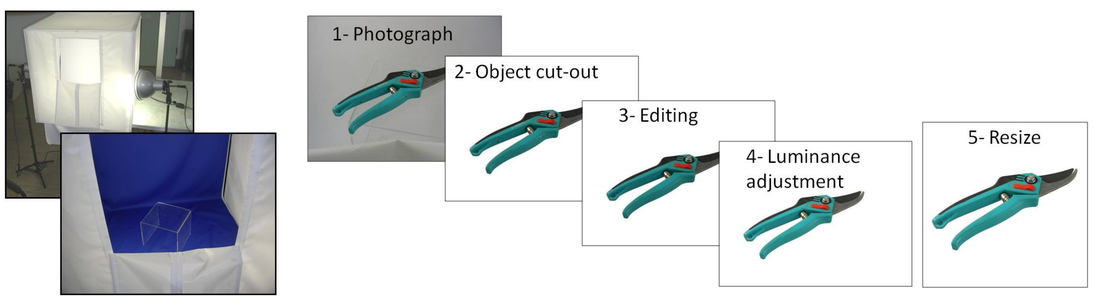
Description of the BOSS

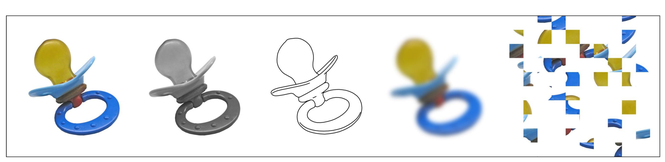
The Bank Of Standardized Stimuli (BOSS) is a normative set of photos. In its initial version, it included 480 normative photos of common objects in addition to 960 non-normative photos of other objects or objects pictured from a different point of view. The set has been expanded and now includes 1,420 normative photos and more than 1,200 non-normative photos. Concepts depicted in the set now include animals, vehicles, building infrastructures, and body parts.

Stimuli

600dpi, 2000 x 2000 frames, sRGB, JPG format



Stimuli were created in different versions including:
- Greyscale
- Line-drawing (213 pictures)
- 8 scrambling levels
- 10 blurred levels



Categories

142 animals, 15 body parts, 46 building infrastructures, 24 musical instruments, 95 tools, 176 sport items, 55 vehicles, 46 weapons, 81 clothing items, 27 toys, 142 food items, and many other categories of objects.

Norms

Norms were collected or computed for the following dimensions:
- Name
- Familiarity
- Visual complexity
- Object agreement
- Viewpoint agreement
- Manipulability
- Color diagnosticity
- Symmetry
- Category
- Grip agreement for grasping
- Grip agreement for using
- Graspability
- Ease to move
- Ease to mime
- Number of actions
- Correct name
- Incorrect name
- Equivocal name
- Name H-value

Norms were collected separately from English speakers and French-speakers.

How to get the BOSS

https://sites.google.com/site/bosstimuli/
http://www.boss.smugmug.com/

Contact the Principal investigator, Dr. Mathieu Brodeur
Mathieu.brodeur@douglas.mcgill.ca

The influence of norms on memory

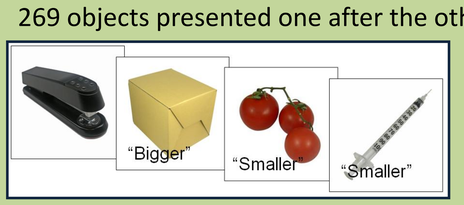
To create experimental conditions, one selects stimuli as a function of several experimental variables while controlling for the confounding ones. Measuring these variables and characterizing the stimuli are usually achieved through normalization (i.e. standardization) procedure.

There is evidence suggesting that variables that are most commonly normalized influence performances in various cognitive tasks. This study was conducted to test the effect of name agreement, familiarity, visual complexity, object agreement, manipulability, and color diagnosticity on memory. The influence of the stimuli visual modality (photo vs. line drawings) was also examined.

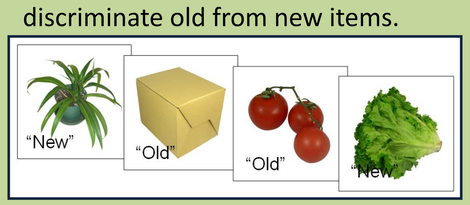
Methods Experiment 1

Subjects: 18 female/12 male
Stimuli: 538 colored photos of objects

Encoding phase: Subjects compared the size of 269 objects presented one after the other.



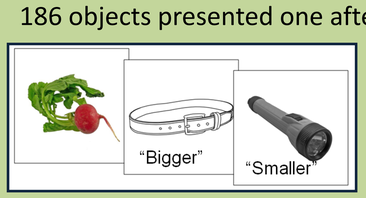
Recognition phase: The 269 encoded objects were presented again as old items, intermixed with 269 new objects. Subjects had to discriminate old from new items.



Methods Experiment 2

Subjects: 12 female/3 male
Stimuli: 124 colored photos, 124 greyscale photos, 124 black/white line drawings

Encoding phase: Subjects compared the size of 186 objects presented one after the other.

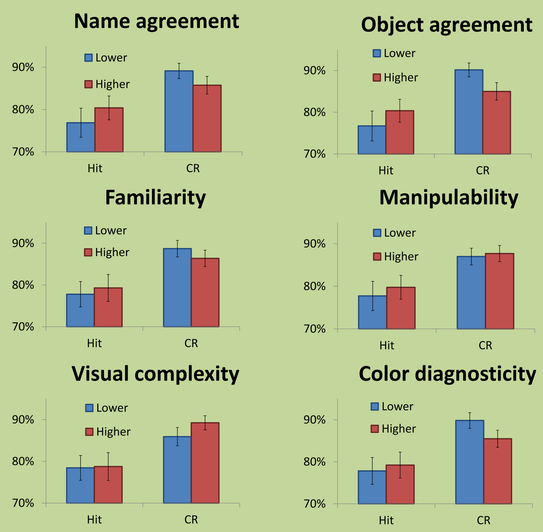


Recognition phase: The 186 encoded objects were presented again as old items, intermixed with 186 new objects. Subjects had to discriminate old from new items.

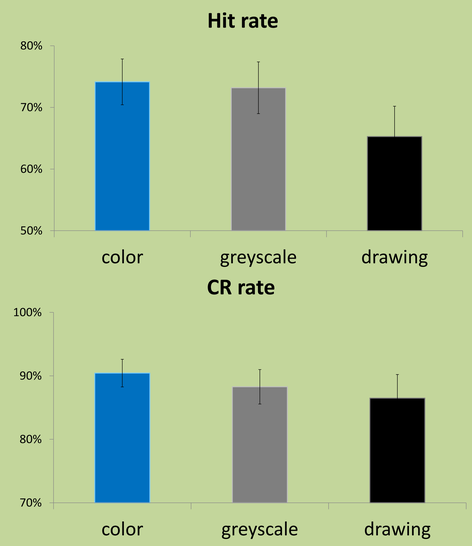
Analyses

Stimuli used in Experiment 1 were normalized according to familiarity, visual complexity, name agreement, object agreement and manipulability. Stimuli were half-split as a function of each norm (low rating vs. high rating). Hit rate and correct rejection (CR) rate of each half were compared. In Experiment 2, Hit rate and CR rate were compared as a function of stimulus modality.

Results Experiment 1



Results Experiment 2



Conclusion

Name agreement increased the feeling of familiarity of objects, while visual complexity increased the rate of CR. Object agreement and color diagnosticity both increased the rate of false recognition of new objects. Surprisingly, familiarity and manipulability did not significantly affect memory performance. Results from Experiment 2 indicate that greyscale and colored photos were correctly responded more often than drawings. These variables and their potential influence on memory should thus be taken into account when interpreting results from episodic memory experiments.