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A DATABASE OF 126 IMAGES OF EVERYDAY OBJECTS STANDARDIZED FOR VISUAL ATTRACTIVENESS (BOSS EXTENSION)

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База данных 126 изображений повседневных предметов, стандартизированных по визуальной привлекательности (расширение базы данных BOSS)

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Abstract

Experimental studies in psychology and cognitive neuroscience often employ images of everyday objects as experimental stimuli. To ensure consistency and reliability across such studies, stimulus sets need to be subjected to rigorous standardization procedures leading to the creation of extensive databases that contain a wide range of detailed information regarding various properties of the depicted materials. However, while existing databases are highly effective at capturing many object attributes, they often fail to account for the aesthetic

Резюме

В качестве экспериментальных стимулов в широком спектре разнообразных исследований в области психологии и когнитивной нейронауки часто используются графические изображения повседневных предметов. Для обеспечения надежности и воспроизводимости результатов таких экспериментов, как правило, наборы таких графических стимулов проходят тщательную всестороннюю стандартизацию, в результате которой создаются обширные базы данных, содержащие как сами визуальные стимулы, так и детальную информацию о различных характеристиках изображаемых объектов. Однако существующие базы данных, как правило,

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qualities that are intrinsic to human-designed objects. There is an increasing body of evidence that suggests compelling links between aesthetic perception and a range of cognitive function encompassing, for instance, motor skills, decision-making processes and even consumer behavior. Therefore, the lack of standardized visual stimuli with controlled aesthetic properties represents a significant challenge for research. To address this gap, the present study introduces a novel set of 126 images of everyday objects (based on the BOSS database) that were evaluated by healthy adult participants (N=53) in terms of their visual appeal as well as other key standardization parameters (e.g., familiarity, visual complexity, and naming consistency). Each object is presented in three distinct conditions: neat/tidy, neutral, and untidy. As the rating data demonstrate, these three conditions closely correspond to varying levels of aesthetic visual attractiveness, ranging from highly appealing (neat) to moderately appealing (neutral) to objects with minimal aesthetic appeal (untidy). This set is designed to serve as a valuable tool for researchers investigating the intricate relationship between aesthetics and human-object interaction.

Keywords: stimuli standardization; everyday objects; neuroaesthetics; visual attractiveness; BOSS; human-object interaction; affordances.

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не учитывают эстетические качества, присущие созданным человеком объектам. Между тем все больше исследований свидетельствует о существовании связей между эстетическим восприятием и широким спектром когнитивных функций и способностей, включающим в себя, например, моторные навыки, принятие решений, потребительское поведение и т.д. Таким образом, отсутствие стандартизированных наборов визуальных стимулов с контролируемыми эстетическими характеристиками существенно ограничивает возможности экспериментальных исследований в этой области. Чтобы устранить этот пробел, в настоящей работе мы представляем новый набор из 126 изображений повседневных предметов, которые прошли оценку выборкой здоровых взрослых испытуемых (N = 53) с точки зрения их визуальной привлекательности, а также других ключевых параметров стандартизации (например, знакомости, визуальной сложности и согласованности наименований). Каждый объект представлен в трех вариантах: опрятном, нейтральном и неопрятном. Как показывают наши данные, эти три уровня опрятности соответствуют трем уровням визуальной эстетической привлекательности: очень привлекательный (опрятный), умеренно привлекательный (нейтральный) и минимально эстетически привлекательный (неопрятный). Этот набор стимулов призван стать ценным инструментом для исследователей, изучающих влияние эстетики на взаимодействие человека с объектами.

Ключевые слова: стандартизация стимулов; повседневные объекты; нейроэстетика; визуальная привлекательность; взаимодействие человека с объектами; аффордансы.

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Everyday objects, such as tools or utensils, are essential to our lives. Unsurprisingly, object images are often used as experimental stimuli in psychology and cognitive neuroscience, including studies in very diverse fields, such as memory (Brady et al., 2008), motor control (Horoufchin et al., 2018), or even effects of injury on object recognition and motor rehabilitation (Buxbaum et al., 2003). To ensure replicable results, reliable stimulus sets are essential; they are normally obtained through standardization procedures, producing databases with detailed information on a range of object properties (normative dimensions). For images, these dimensions fall into three main categories: semantic, perceptual and affective (Souza et al., 2020). Semantic norms (e.g., familiarity or affordability) describe objects' features extracted from memory and conceptual knowledge. Perceptual norms (e.g., visual complexity) rely on participants' sensory systems. Affective norms (e.g., attractiveness, arousal, or valence), in turn, rely on emotional/evaluative systems.

Psychology and neuroscience research increasingly highlight the role of aesthetic perception role in shaping human cognition and interaction with environment. Recent studies reveal a nuanced relationship between aesthetic stimuli and the motor system, influenced by emotional valence. For instance, Kawabata and Zeki (2004) showed enhanced motor cortex activity in response to "ugly" stimuli compared with "beautiful" ones. Similarly, De Tommaso and colleagues (2008) observed increased motor inhibition potentials for aesthetically pleasing stimuli. Other research has linked stimulus aesthetics to decision-making, with attractive products receiving higher usability ratings and influencing decisions even at the expense of performance (Han et al., 2016). Furthermore, both affordability and attractiveness may impact perceptual processing via attention modulation, with positive aesthetics enhancing attentional performance (Righi et al., 2014; Righi et al., 2017).

While the research field of object aesthetics is growing rapidly, there is a lack of databases systematically norming objects' attractiveness. Existing databases either standardize object valence (Prada et al., 2010), or focus on symbols rather than everyday objects (Prada et al., 2016). Overlooking attractiveness of everyday objects limit research validity, as they inherently contain aesthetic features alongside functionality (Wassiliwizky & Menninghaus, 2021). Addressing this gap, we aim to provide a comprehensive tool for controlling attractiveness variables. We present images of everyday objects standardized for key normative dimensions,

including visual attractiveness. Built upon the BOSS database (Brodeur et al., 2014), our adaptation expands normed object features to include attractiveness ratings.

Present study

In order to incorporate the parameter of attractiveness into the established normative dimensions of everyday object stimuli, we utilized a set of images from the Bank of Standardized Stimuli (BOSS) database (Brodeur et al., 2014) and extended it with modified pictures representing high, medium, and low levels of attractiveness. We chose the BOSS database because it comprises images of everyday objects presented as color original photographs and normed according to the most extensive range of parameters. Moreover, its authors provided comprehensive data on stimuli, norms, and participants, facilitating correlational studies and comparisons across samples. Building upon this, our current study aims to further normalize objects across various dimensions:

1. Familiarity (FAM): How frequently participants encounter the object directly or through media (Snodgrass & Vanderwart, 1980).

2. Name Agreement (NA): Consistency in assigning a clear and concise name to the object (Brodeur et al., 2010).

3. Category Agreement (CA): Consistency in assigning the object to a specific category (Ibid.).

4. Visual Complexity (VC): Level of detail, color and complexity of lines and edges (Snodgrass & Vanderwart, 1980).

5. Affordability (AFF): How readily the object's shape suggests its function (Righi et al., 2014).

6. Manipulability (MAN): The ease with which the object can be grasped and manipulated with one hand (Ibid.).

7. Attractiveness (ATT): Aesthetic appeal of the object (Ibid.).

The resulting set of materials includes established parameters alongside attractiveness and also incorporates measures of affordability and manipulability (MAN). Unlike the MAN from the BOSS study, our MAN measure focuses not on a pantomime depicting object use but rather on assessing the ease of interacting with an object using one hand. This variable is important as it relates to the neurocognitive systems evaluating object's position and potential actions (Goodale & Westwood, 2004).

Method

Participants

Fifty-three native Russian speakers (26 women; Mean age = 24.6, SD = 9) with normal or corrected-to-normal vision and no neurological or psychiatric disorders took part in the study. All were right-handed (mean score = 19.3, SD = 4.1) according to Russian adaptation of Annett hand preference questionnaire (Annett, 1970; Khokhlov & Burova, 2014) and had no specialized education in art, design, or architecture. This

research was approved by the HSE University Ethics Committee; all participants gave their written consent and were compensated for their time.

Stimuli

Two sets of stimuli were employed in different normative stages of the study. The original set assessed Familiarity, Name and Category Agreement, Visual Complexity, Affordability, and Manipulability parameters. It comprised 42 photographic images of everyday objects from BOSS, categorized into Household Items, Tools, Personal Items, Stationery, and Kitchen Utensils, chosen for their prevalence in empirical studies. The objects varied in size and featured identifiable manipulable parts like handles. These color photographs depicted real objects in a neutral surface state, with no alterations.

The extended set, created using Adobe Photoshop® 24.0, comprised digitally altered versions of the original images. Negative neatness depicted untidiness, incorporating dirt, scratches, or signs of use, while positive neatness involved adding gloss, shine, or decorative elements. Notably, creating negative states required actively adding visual information, making these stimuli more visually complex than neutral and positive stimuli. To control for this, we adjusted positive stimuli by introducing simple decorative patterns while preserving the original colors as much as possible. Throughout the experiment, the original images remained unchanged and were consistently referred to as neutral. The extended set therefore consisted of 126 (i.e., 42×3) images with each object presented with neat, neutral, and untidy surface.

For both sets, images were centrally aligned, had dimensions of 2000×2000 pixels, and were saved in PNG format with 32-bit color depth. Examples of stimulus material are shown in Figure 1. For the complete set of images, refer to the Supplementary Materials (https://psy-journal.hse.ru/data/2024/09/26/1882463777/Supplementary%20materials.pdf).

Procedure

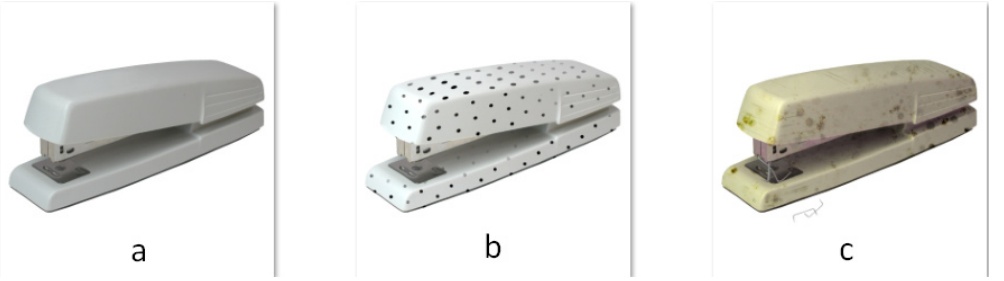
The experimental setup included Windows PC with a 27-inch monitor (1920×1080 resolution) and a keyboard. PsychoPy-2022.2.4 software was used to run the experiment. Participants were seated approximately 45 cm from the monitor. The stimuli were presented in random order. All norms, except CA and NA, were rated on a 7-point Likert scale. To minimize carryover between different norms, the FAM rating was the first in the experimental series, the ATT rating was always the last, and the remaining norms were randomized. Instructions for rating stimuli on each dimension are provided in Supplementary Materials, Table 1.

Analysis

Analysis for norms followed Brodeur et al.'s approach (2014); to compare current results with stimuli from BOSS, we adopted Sopov et al.'s analysis (2019). For each stimulus, mean values, standard deviations, minima and maxima were calculated

Figure 1

Examples of Manipulable Objects with a) Neutral (Adapted from Brodeur et al. (2014), b) Neat, and c) Untidy Surface States



for each parameter. Internal consistency (Cronbach's alpha) was assessed. Name agreement (NA) analysis involved counting provided names and the number of participants endorsing each name. The most frequent name was designated as the Modal Name, and the proportion of participants choosing it was labeled NA. Responses categorized as DKN ("don't know") and TOT ("tip of the tongue") were analyzed separately and were excluded from modal name identification. In cases of equal frequency for two names, the more precise one was chosen as modal. H-value (average binary entropy) was calculated reflecting name dispersion across participants. Higher values indicate a greater name diversity, suggesting the stimulus received a wider range of tokens. We used the following formula to calculate H-values:

$$H = \sum_{i=1}^{k} P_{(i)} log_2(\frac{1}{P_i}),$$

where H is the average binary entropy of the message, k is the number of proposed item names, P_i is the number of respondents who gave one of the name options. Category Agreement (CA) was calculated similarly to NA with "other" option included as a possible response. Mean ratings for all parameters were calculated for each object category. One-way ANOVAs compared parameter ratings across categories. Post-hoc tests (Bonferroni-corrected) were used to identify specific category differences when significant main effects were found. In addition, we divided the sample by gender with T-tests used to compare parameter ratings between genders. However, when normality was violated, as assessed by the Kolmogorov-Smirnov test ($p < .05$) for some ratings, non-parametric alternatives were employed (Kruskal-Wallis, Mann-Whitney U). To explore gender differences across categories, we also conducted item-based repeated-measures ANOVA (treating each stimulus item as an individual "subject"). Gender was considered a within-subject factor, while the object category was treated as a between-subject factor. Finally, since our work can be considered an adaptation of a subset from BOSS on a Russian-speaking sample, we conducted correlation analyses between our data and the original BOSS norms (Brodeur et al., 2014) obtained on English-speaking participants and available for open access.

Results

Table 1 displays descriptive statistics, including means, standard deviations, and agreement measures. ATT is presented three times due to assessment across an extended set with surface modifications, while other dimensions were rated for original images. On average, stimuli received high ratings for FAM and MAN, with neutral images having moderate VC and ATT. Untidy objects were less attractive, while neat objects scored highest in ATT (Table 1). Alpha coefficients for 7-point scale norms ranged from .87 to .96, indicating high internal consistency. Although some objects presented naming challenges, they constituted a relatively small proportion of the total (DKN Mean = 4%, SD = 7%, TOT Mean = 3%, SD = 5%). Supplementary Materials, Table 2 contains comprehensive norm information for each stimulus, along with corresponding data from the Brodeur study.

Table 1

Norms per Set and per Categories

Normative dimension	General			Modal category									
				Household		Stationery		Tools		Personal Use		Kitchen Utensils	
	M	SD	Cronbach's Alpha	M	SD	M	SD	M	SD	M	SD	M	SD
NA, %	76	22		84	22	71	25	65	22	78	18	91	7%
H-Name	0.85	0.73		0.54	0.66	0.88	0.80	1.31	0.81	0.91	0.62	0.50	0.34
DKN	4	7		4	6	3	9	7	8	2	4	1	2
TOT	3	5		2	3	3	6	6	5	3	6	2	4
CA, %	88	16		72*	19	97*	3	97*	4	87	15	82	26
H-Category	0.48	0.51		0.95*	0.52	0.2*	0.19	0.21*	0.22	0.56	0.56	0.74	0.74
FAM	6.07	0.68	0.93	5.89	0.61	6.5*	0.31	5.41*	0.74	6.33	0.50	6.00	0.84
VC	3.01	1.14	0.96	3.57	1.20	2.50	0.93	2.88	0.92	3.31	1.12	3.28	1.64
MAN	6.14	0.74	0.90	6.29	0.42	6.29*	0.88	5.33*	0.50	6.62*	0.31	6.19	0.63
AFF	5.21	0.95	0.95	5.11	0.75	5.75*	0.82	4.59*	0.70	4.86	0.97	5.31	1.41
ATT (neutral)	4.38	0.61	0.93	4.39	0.45	4.66	0.47	4.23	0.65	3.94	0.72	4.38	0.84
ATT (positive)	5.17	0.46	0.93	4.96	0.42	5.46	0.40	5.04	0.30	5.27	0.42	4.80	0.61
ATT (negative)	1.78	0.40	0.87	1.79	0.54	2.00*	0.37	1.77	0.19	1.45*	0.23	1.54	0.25

Note. NA — Name Agreement, DKN — 'don't know', TOT — 'tip of the tongue', CA — Category Agreement, FAM — Familiarity, VC — Visual Complexity, MAN — Manipulability, AFF — Affordability, ATT — Attractiveness.

* $p < .05$ (Bonferroni adj.)

Kruskal-Wallis test compared rating scores across categories with Bonferroni correction (Table 1). No significant effects were found for NA and H-Name or naming difficulty (DKN, TOT). However, significant differences emerged for CA (H = 14.39, $p < .05$) and H-Category (H = 13.99, $p < .05$). Post-hoc analysis showed a lower agreement for Household categorization compared to Tools and Stationery, aligning with a greater response diversity observed for the same categories (all p-values < .05).

Significant differences were also found for FAM (H = 15.91, $p < .05$), MAN (H = 16.17, $p < .05$), AFF (H = 10.13, $p < .05$), negative ATT (H = 11.09, $p < .05$), and positive ATT (H = 10.78, $p < .05$). Post-hoc analysis revealed Tools as being less familiar than Stationery and having lower MAN scores compared to Stationery and Personal Use (all p-values < .05). Tools were also rated less affordable than Stationery ($p < .05$). Regarding ATT, untidy Personal Use items received the lowest ratings, while untidy Stationery received the highest, with a significant difference between the two ($p < .05$). Notably, neat Stationery retained the higher ratings than other categories, though Bonferroni correction prevented significance.

Table 2 presents normative data grouped by gender along with results of statistical comparisons using Mann-Whitney U-tests. While no significant gender differences emerged for most dimensions, females rated attractiveness of neat objects significantly lower than males ($p < .05$).

Item-based repeated-measures ANOVA (gender: within-item; object category: between-item) revealed a range of significant effects; see Supplemantary Materials Table 3 for complete results. Specifically, men perceived Tools as more familiar ($p < .001$) and less visually complex ($p < .05$) than women did. Additionally, men rated Stationery

Table 2

Comparison of the Norms between Male and Female Participants

Normative dimension	Females (n=26)		Males (n=27)		Gender comparison
	M	SD	M	SD	U
FAM	6.05	0.87	6.1	0.55	U = 815.0
NA	77%	22%	76%	23%	U = 874.0
H-Name	0.79	0.68	0.82	0.73	U = 863.0
DKN	4%	7%	3%	7%	U = 791.5
TOT	3%	5%	4%	5%	U = 773.5
CA	89%	16%	88%	17%	U = 830.0
H-Category	0.43	0.50	0.46	0.54	U = 843.0
VC	3.03	1.12	2.98	1.17	U = 854.0
MAN	6.11	0.81	6.18	0.71	U = 855.5
AFF	4.96	1.16	5.46	0.79	U = 664.5
ATT (neutral)	4.38	0.54	4.39	0.70	U = 815.0
ATT (positive)	5.01	0.52	5.35	0.47	U = 564.0*
ATT (negative)	1.85	0.44	1.75	0.42	U = 842.0

* $p < 0.05$.

($p < .05$), Tools ($p < .001$), and Personal Items ($p < .001$) as more affordable. Moreover, gender differences were observed in judgments of object attractiveness. Women rated neat objects from all categories (except Household items) as less attractive than men ($p < .05$). Furthermore, women rated attractiveness of untidy Personal Items significantly lower than men ($p < .05$).

Correlations between Normative Dimensions

A Spearman's correlation analysis with Bonferroni correction ($\alpha = 0.0014$) explored relationships between normative dimensions (Table 3). Strong negative correlations emerged between agreement parameters (NA and CA) and their H-values ($r = -.98$, $r = .99$, respectively). Positive correlations were found between FAM and MAN (r = .62), FAM and AFF ($r = .59$), and MAN and AFF ($r = .64$). Conversely, AFF showed a negative association with VC ($r = -.60$). Notably, the ATT parameter did not correlate significantly with any other dimension. Correlations between the corresponding normative dimensions in the original BOSS data are presented in the Supplementary Materials, Table 4.

Correlations with BOSS data. Since our methodology and stimulus material are largely based on the BOSS study, comparing the two sets of results is essential to validate their replicability. We conducted a correlation analysis between corresponding parameters in both studies, normalizing data to z-scores to account for differences in scaling (Table 4). The analysis revealed positive correlations for CA ($r = .77$, $p < .001$), VC ($r = .78$, $p < .001$), H-Category ($r = .67$, $p < .001$) and Familiarity ($r = .63$, $p < .001$), and H-Name ($r = .33$, $p < .05$) between the two samples.

We built a structure of correlations between norms for both the present study and the BOSS sample to identify their respective interactions (see Supplementary

Table 3

Correlations between Normative Dimensions

Normative dimension	1	2	3	4	5	6	7	8
1. FAM								
2. NA	.252							
3. H-Name	−.305	−.977*						
4. CA	.305	−.067	.075					
5. H-Category	−.292	.070	−.078	−.997*				
6. VC	−.458	.042	−.027	−.322	.310			
7. MAN	.620*	.089	−.163	−.127	−.113	−.469		
8. AFF	.590*	.177	−.213	.272	−.265	−.598*	.639*	
9. ATT (neutral)	.389	−.008	−.081	.016	−.001	−.289	.160	.147

* $p < 0.05$ (2-tailed with Bonferroni correction (0.0014)).

Table 4

Correlations between Standardization Parameters of Present Study and BOSS-Sample

Normative dimension	Russian Sample		BOSS		Correlation	
	Mean	SD	Mean	SD	Pearson *r**	*p*
FAM	6.07	0.68	4.19	0.36	**0.630**	<0.001
NA	76%	22%	70%	21%	0.229	>0.05
H-Name	0.85	0.73	1.36	0.86	**0.331**	<0.05
CA	88%	16%	83%	19%	**0.765**	<0.001
H-Category	0.48	0.51	0.75	0.67	**0.688**	<0.001
VC	3.01	1.14	2.27	0.38	**0.783**	<0.001
MAN	6.14	0.74	3.10	0.64	0.071	>0.05

* Performed on data normalized to z-scores.

Materials, Table 5). Similarly to our study, the BOSS study revealed strong negative correlations between agreement parameters (NA and CA) and their respective H-values ($r = -.95$ and $r = -.97$, respectively). However, unlike our findings, the BOSS study showed several correlations between FAM and H-Name ($r = -.58$), FAM and MAN ($r = -.66$), MAN and NA (r = 0.62), and MAN and H-Name ($r = -.63$).

Discussion

We present a standardized database of everyday objects with aesthetic modifications (surface neatness) normed for visual attractiveness and key normative dimensions.

The analysis of norms showed a strong participant agreement in evaluating stimuli across various aspects. The obtained ratings suggest that the dataset comprises objects of moderate visual complexity (VC). The relatively high affordability (AFF) and manipulability (MAN) ratings, consistent with the authors' criteria for stimulus selection (i.e., objects with obvious manipulable components), make them suitable for object-human interaction studies including affordance research. Additionally, high Name Agreement (NA) with a low count of "don't know" and "tip-of-the-tongue" responses suggest that these stimuli are appropriate for object naming or word-picture matching tasks. Furthermore, the high Category Agreement (CA) combined with low H-Category indicate that the stimuli are easy to classify, making them suitable for categorization tasks. Object Attractiveness (ATT) ratings were moderate for neutral images, with untidy objects rated lowest and neat objects – highest. Therefore, these stimuli are suitable for studies requiring precise manipulation of attractiveness. Additionally, the moderate ATT ratings for neutral objects (original BOSS images) suggest that the BOSS authors successfully chose common everyday objects, making the set suitable for research where object attractiveness is a controlled variable, rather than the primary focus.

The category analysis revealed a distinct pattern in CA scores: Household items received the lowest ratings, while Stationery and Tools scored highest. This aligns with Brodeur et al. (2014), suggesting inherent object properties may be more influential than cultural factors for CA. One explanation lies in the greater location variability for household items. Unlike kitchen utensils (kept in kitchens), stationery (on desks), or tools (in workshops/garages), household items can be found in multiple locations, potentially leading to lower CA and higher H-value scores. Our results align with the findings of Torralba et al. (2006), who demonstrated the influence of contextual factors on visual search. This variability highlights the need for caution in using household items for semantic categorization tasks due to potential confounds.

The significant differences observed for Tools align with findings from other studies: consistent with Brodeur et al. (2014) and Sopov et al. (2019), our participants reported significantly lower familiarity with tools compared to other object categories. This pattern can be attributed to a limited exposure to tools for participants of this age group. Further research is needed to confirm this suggestion and may, for instance, additionally assess participants' hobbies and manual labor experience.

Moreover, the significant differences between Tools and other categories (Household, Stationery, Personal Items) for parameters related to object interaction (MAN and AFF) may reflect a perceived difficulty in actions using such tools. Given that our MAN-norm definition referred to the ease of using an object with one hand, low MAN-scores may reflect the perception that tools require specialized skills compared to simpler items like combs or pens. The observed lower AFF of Tools compared with Stationery might also be due to action complexity, in line with Lagacé et al.'s (2013) data on grip types for different objects. Notably, BOSS lacked MAN differences, possibly due to operationalizing manipulability via pantomiming.

In terms of attractiveness, untidy Personal Items were likely rated the lowest due to their association with poor hygiene, a universally aversive feature as evidenced by several studies (Curtis & Biran, 2001). The high ATT score for untidy stationery, on the other hand, might indicate inherent attractiveness of such items, possible specific to our student-majority sample, who frequently interact with heavily used stationery. This aligns with the exposure effect, where familiarity enhances positive evaluation (Bornstein, 1989). Alternatively, some object categories may generally possess inherent features influencing this dimension. This more general explanation is supported by the finding that also neutral and neat stationery remained the most attractive category numerically (although not significantly). This highlights the importance of analyzing and balancing stimulus materials to ensure that they are free of confounding variables. Standardization databases can be particularly valuable in this regard.

In terms of gender disparities, men rated Tools on FAM and VC significantly higher than women did. Our findings align well with prior studies suggesting women's lower exposure to tools explains these differences (Brodeur et al., 2010; Brodeur et al., 2014). However, our findings do not consistently replicate common

gender-specific patterns for other norms, as we found no gender differences in DKN and TOT responses, NA, and H-scores. This suggests that for our sample, both genders possess similar tool name knowledge, regardless of potential usage differences. Interestingly, women consistently rated AFF lower for Stationery, Tools, and Personal Items. This may relate to imagery during affordability judgments (imagining potential actions with an object). Men typically outperform women in such tasks (for review, see Campos & Lustres, 2018).

As for significantly lower ATT-scores assigned by women to untidy Personal Items and higher ratings given by men to almost all categories of neat objects, our results corroborate frequently reported valence-specific sex differences in responses to emotional stimuli (Stevens & Hamann, 2012). Specifically, women tend to react more strongly to stimuli of negative valence, while men demonstrate stronger responses to positive valence. However, as there is a lack of research using everyday objects as valence stimuli, further investigations are needed to confirm or refute this link.

The correlation analysis between present study and BOSS revealed both similarities and differences. In both Russian (this study) and English-speaking (BOSS) samples, we found no significant associations between familiarity (FAM) and visual complexity (VC), contrary to previous research (Clarke & Ludington, 2018) and complete BOSS database. This discrepancy might stem from the smaller stimulus set analyzed here. Also, unlike BOSS data, we found no significant correlations between MAN-parameter with FAM, NA, and H-Name. These disparities may be explained by differences in the operationalization of the MAN-norm, discussed above. Moreover, unlike the original BOSS data, we found no significant correlations between FAM and NA or H-Name, possibly due to cultural and linguistic differences between our participants and those in the original study.

Limitations and prospects

Whilst offering novel prospectives for studies of object perception, human-object interaction and everyday aesthetics, the present study is not without some limitations. First, the limited size of the current database (compared to BOSS) restricts generalizability. Future investigations could include a broader range of objects from diverse categories to address this limitation. Additionally, employing more objective criteria for stimulus selection could mitigate the influence of researcher subjectivity. Finally, the predominantly student-based participant pool may restrict the generalizability of our findings to other populations, particularly in regard to FAM/ATT-ratings for specific object categories (e.g., Tools). Broader samples in future research could explore the influence of experience on object evaluation.

Conclusion

This study presents a novel database of everyday objects standardized along semantic, perceptual and affective normative dimensions, with a particular focus on attractiveness. These stimuli may serve as a valuable tool for researchers studying human-object interaction. The database allows the selection of highly familiar

manipulable objects with controlled attractiveness (high, medium, low) to investigate the impact of aesthetics on various processing, including (but not limited to) memory, decision-making, and object recognition. High Name Agreement (NA) and Category Agreement (CA) ensure suitability for object naming/matching and classification tasks, respectively. Additionally, affordability and manipulability measures facilitate research on how people interact with objects. Overall, this resource and the overall experiment approach suggested in this study empower researchers to design robust, controlled experiments, particularly those exploring the influence of aesthetics on cognition and interaction with everyday environment.

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