

# Beauty in The Context of Ugliness – The Similarities and Differences of Their Semantic Differentials

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## Abstract

This study focuses on the characteristics of the term of Beauty in the context of its opposite – Ugliness. In a natural language these two terms are considered to be counterparts, although several areas of research into aesthetics have suggested that they might actually overlap and may co-exist. The identification of the possible differences and similarities of the terms Beauty and Ugliness may contribute to a better understanding of Beauty. In order to define these terms, the study utilises the method of semantic differential and aims to establish which adjectives best describe the concepts of Beauty and Ugliness, based on an assessment through twenty-one bipolar adjectives grouped into the dimensions: activity, evaluation and potency. The main objective is to discover which adjectives differ in the evaluations of the terms of Beauty and Ugliness, and to what extent they differ. The research involved 1,991 subjects (53.1% of whom were female) in the age range 18 – 89 (M = 41.53 years; SD = 16.48). The term Beauty was most closely linked to adjectives such as pleasant, inviting and inspiring; Ugliness to unpleasant, repulsive and bad. In the analysis of the similarities and differences between the terms Beauty and Ugliness, a paired T-Test identified statistically significant differences in all the bipolar adjective pairs, with the exception of impulsive/judicious. The most significant differences were found in the adjective pairs of pleasant/unpleasant ( $t = 90.538$ ), inviting/repulsive ( $t = 62.7640$ ) and good/bad ( $t = 61.244$ ) from the evaluation dimension. The method of semantic differential as well as the adjective pairs used provided a good degree of discrimination, meaning they have the potential to describe the meaning of the concepts through connotations within future studies that examine the similarities and differences between various expressions, or for the replication of this study in other linguistic or cultural regions.

**Keywords:** semantic differential, Beauty, Ugliness, meaning

## 1. Introduction

The content of the term Beauty may be modified by numerous factors: etymological (Demuth, 2022), cultural (Jacobsen, 2010), historical (Sorokowski, 2010), gender (Vavrova & Demuthova, 2021), age (Wulff et al., 2022) and others. It is quite complicated to fully describe and define this term due to its multi-aetiological nature. Furthermore, research into the term Beauty is often inter-disciplinary in nature; Beauty is studied through the prism of various scientific disciplines – mathematics (Zeki et al., 2018), aesthetics (Dietrich & Knieper, 2022), ethics (Diessner, 2019), art (Sidhu et al., 2018), medicine (Feng, 2020), psychology (Yarosh, 2019), philosophy (Scruton, 2011) or biology (Jones & Jaeger, 2019), all of which perceive it from their specific scientific point of view. The term Beauty is one of the broadest terms used in a language (Kenett et al., 2021) and studies into this term represent a highly dynamic area of investigation – research results continually provide new opportunities for study and identify areas where more information is required.

An important data resource for the definition of Beauty is to study how it is understood and used by the common population. Data on the use of terms by common users of a natural language can be obtained by various methods – from text analyses (Mikolov et al., 2013; de Boer et al., 2018), via the administration of questionnaires (Redaelli et al., 2020), or by studying connotations (Manchaiah et al., 2015; Page et al., 2021). It is also possible to study the situations in which the term Beauty is used; or the words that are most often associated with the term Beauty, or the characteristics that are attributed to it. A very powerful method for the study of expressions within a language is the method of semantic differential that allows us to measure the relationship between the studied term and its various connotations. Within this method, these connotations are bipolar adjective pairs that characterise the specific term, and measurements then evaluate the proximity of the studied term to one or other of the extremes of the adjective pair on a Likert scale. Since it was first invented in the 1950s (Osgood 1957, Osgood et al., 1957), the semantic differential method has been used rather frequently; one of its great advantages is that it not only allows the identification of typical characteristics (connotations) of the term under study, but also the measurement of several other terms using the same “set” of adjective pairs. Thus, it is possible to determine the extent to which the individual terms differ, in which characteristics (adjectives) they differ and in which characteristics they are similar. The use of semantic differential has also revealed that most of the connotations associated with terms under study may be characterised in terms of three areas – activity, evaluation and potency (Osgood et al., 1957), which have also become the basic dimensions of the semantic differential.

The study of Beauty and its relationship with other concepts has been the subject of a vast body of research – Beauty is closely linked to health, fitness, fertility and symmetry (Zaidel et al., 2005; Yarosh, 2019). Only a few of them studied the proximity of the terms using the semantic differential. One of the few contemporary studies that used this method was that of Kenett et al. (2021), who discovered that the term Beauty was consistently related to words such as: Elegance, Feminine, Gorgeous, Lovely, Sexy, and Stylish. The semantic differential

allows the identification of terms that are close to the term Beauty; however, in order to define and classify it, it is equally important to define it in contrast to the opposites that are used in the language. The application of the method of semantic differential to Beauty and its antonym/s may potentially identify the key areas in which these terms differ to the greatest extent. This should highlight the unique and typical characteristics of the term Beauty and help to describe the way it is understood by common language users. Certain characteristics of objects and phenomena only become visible when they are contrasted with the characteristics of different/opposite terms. One of the terms that is most frequently studied as a counterpart to Beauty is Ugliness (see e.g., Dietrich & Knieper, 2022; Martín-Loeches et al., 2014). The fact that Beauty and Ugliness are antonyms does not automatically mean that they will have opposite meanings at all levels. Ugliness and Beauty can co-exist in many areas (Felisberti, 2022) – one such example is the concept of wabi-sabi (Garcia, 2015), a fascination of Ugliness in art (Eco, 2007), its appreciation in architecture or the existence of aesthetic experiences associated with Ugliness (Felisberti, 2022). Hence, the semantic relationship between the terms Beauty and Ugliness is up for debate as is the characteristics that differentiate them.

## 2. Objective

The primary objective of the paper is to identify and quantify the similarities and differences between the terms Beauty and Ugliness using the semantic differential method. A partial objective is to also reveal the typical (the most accurate) connotations of the terms Beauty and Ugliness.

## 3. Method

### 3.1 Procedure

The data collection was carried out throughout the whole of Slovakia, in an effort to cover all age categories and ensure the approximately equal representation of men and women. The questionnaire was administered either individually (data collection in the field, the available participants were individually invited to complete the questionnaire), or in groups (mostly at schools and places of work). The data collection was voluntary and anonymous. Prior to the administration of the questionnaire, the participants were informed of the purpose and nature of the data to be collected and were given the opportunity to withdraw from the research or data collection without consequences. The informed consent and basic information about the research were also explicitly stated in the introduction to the questionnaire. The anonymity of the data obtained when the questionnaire was completed by an individual was ensured as the completed questionnaire was put into a closed ballot box containing other questionnaires, which made it impossible to identify a specific questionnaire.

### 3.2 Instruments

The data was collected through a questionnaire, made up of three parts. The first part included the informed consent and questions of a basic demographic nature. The second part included the semantic differential of the term Beauty, it was made up of twenty-one bipolar adjective pairs in three dimensions – activity, evaluation and potency (see Table 1).

Table 1. Bipolar adjectives that describe the concepts of Beauty and Ugliness and their categorisation into the dimensions of activity, evaluation, and potency plus the data on internal consistency

Dimensions	Activity	Evaluation	Potency
Bipolar Adjectives	Exciting/Soothing	Inviting/Repulsive	Orderly/Chaotic
	Aggressive/Moderate	Inspiring/Boring	Balanced/Unbalanced
	Erotic/Romantic	Kind/Hateful	Understandable/Unintelligible
	Expressive/Inconspicuous	Calm/Restless	Logical/Illogical
	Strict/Lenient	Pure/Dirty	Knowable/Unknowable
	Impulsive/Judicious	Pleasant/Unpleasant	Familiar/Strange
	Fast/Slow	Good/Bad	Simple/Complicated
	Cronbach's $\alpha$		
Beauty	0.563	0.747	0.742
Ugliness	0.570	0.763	0.747

Source: Authors

In the semantic differential, the participants were asked to evaluate to what extent they associate the term Beauty with the specific adjective on a seven-point scale (see Table 2).

Table 2. An example of the adjective evaluation within the semantic differential

	Strongly Agree	Agree	Slightly Agree	„In the Middle“	Slightly Agree	Agree	Strongly Agree	
Good	1	2	3	4	5	6	7	Bad

Source: Authors

The third part of the questionnaire was an assessment of the term Ugliness in the same way. Data on the reliability (Cronbach's alpha) of the activity, evaluation, and potency dimensions for both concepts are presented in Table 1.

### 3.3 Participants

The data was collected throughout the whole of Slovakia and involved 2,216 adult participants. During the review of the questionnaires, 197 were eliminated from further analysis as they were incomplete and 28 were eliminated as the questionnaire was incorrectly completed. Thus, a total of 1,991 participants (53.1% of whom were female) from 18 to 89 years of age ( $M = 41.53$  years;  $SD = 16.48$ ) were included in the statistical analysis.

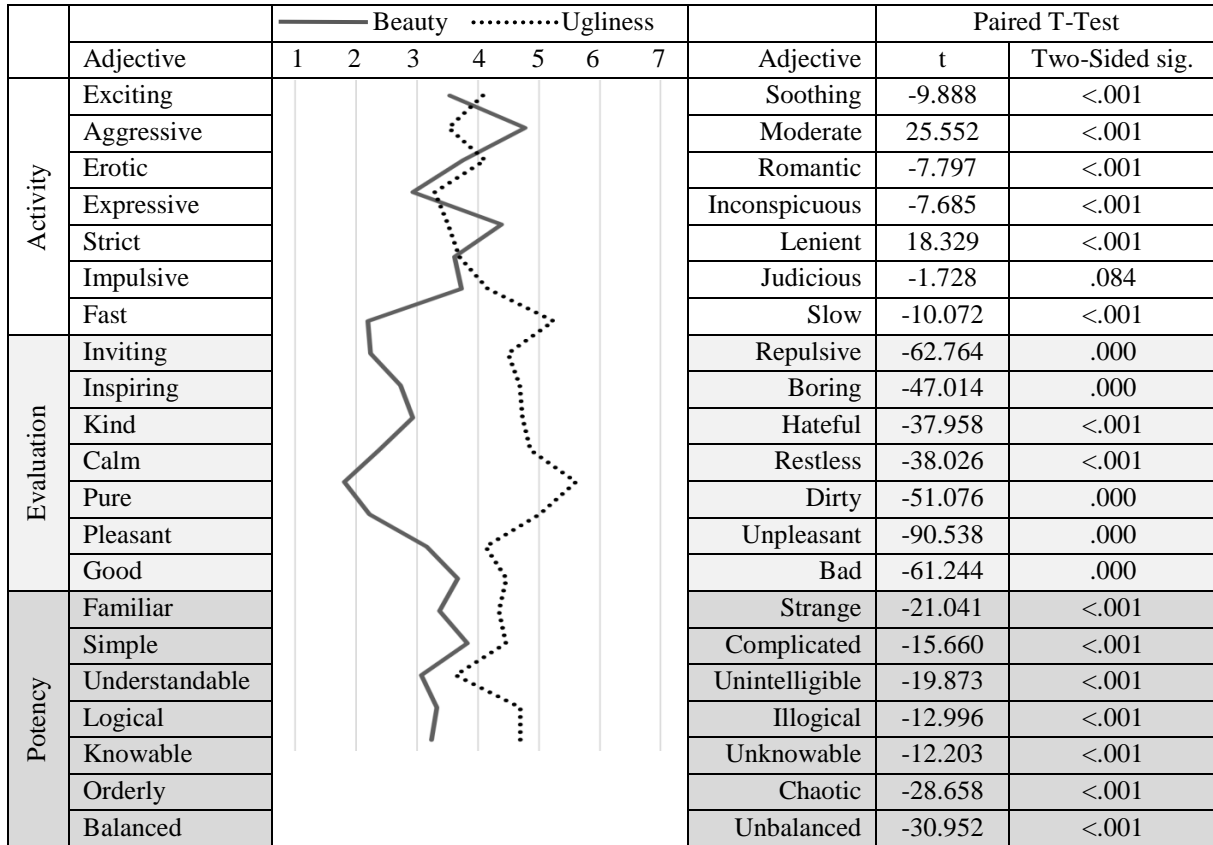
### 3.4 Data Analysis

Statistical analyses were conducted using the IBM Statistical Package for Social Sciences (SPSS), version 28. The threshold for statistical significance was set to 95% (0.05).

### 4. Results

Based on the mean values of each adjective, assessed on a Likert scale, the inclination towards the poles of the bipolar adjective pairs were plotted (see Figure 1).

Figure 1. Differences in the semantic differentials of the terms Beauty and Ugliness



Source: Authors

Figure 1 demonstrates that the lowest degree of differentiation between the adjectives occurred in those within the activity dimension, while greater differences can be observed in the potency dimension (Ugliness is generally less: Familiar, Simple, Understandable, Logical, Knowable, Orderly and also less Balanced than Beauty). The adjectives from the evaluation dimension exhibited the greatest differences. The paired T-test confirmed this tendency in a graphical representation of the results – the greatest statistical significance of the differences was found in the activity dimension,  $p_{Activity} = 0.024$ ,  $p_{Potency} <.001$  and  $p_{Evaluation} = 0.000$  (see Table 3).

Table 3. Differences between the terms Beauty and Ugliness in the dimensions of the semantic differential

Dimension	Beauty	Ugliness	Paired T-Test	
	Mean	Mean	t	Two-Sided sig.
Activity	26.7449	26.3882	1.982	.024
Evaluation	16.5083	34.6354	-78.692	.000
Potency	23.6675	30.4239	-31.231	<.001

Source: Authors

The paired T-Test revealed statistically significant differences in all the adjective pairs used to describe the terms Beauty and Ugliness, except for the Impulsive/ Judicious pair (see Figure 1). The greatest differences in the pairs of bipolar adjectives used to describe the terms Beauty and Ugliness were as follows: Pleasant/Unpleasant ( $t = 90.538$ ), Inviting/Repulsive ( $t = 62.764$ ), Good/Bad ( $t = 61.244$ ); on the other hand, the differences are less discernible with the adjective pairs such as Impulsive/Judicious ( $t = 1.728$ ), Erotic/Romantic ( $t = 7.797$ ), and Expressive/Inconspicuous ( $t = 7.685$ ).

The graphical representation of the mean values of the bipolar adjectives for the assessment of the terms Beauty and Ugliness allows us to identify those characteristics that are most typical of these two terms. When describing Beauty, the adjectives with mean values (see Table 4) that were closest to the extreme (to the values of 1 and 7) included the following: Pleasant ( $M = 1.809$ ), Inviting ( $M = 2.195$ ), and Inspiring ( $M = 2.240$ ); the term Ugliness was characterised by adjectives, such as Unpleasant ( $M = 5.605$ ), Repulsive ( $M = 5.244$ ), and Bad ( $M = 5.010$ ).

Table 4. Mean values of bipolar adjectives for the terms Beauty and Ugliness

	Adjective	Beauty	Ugliness	Adjective
Activity	Exciting	3.540	4.083	Soothing
	Aggressive	4.772	3.523	Moderate
	Erotic	3.762	4.118	Romantic
	Expressive	2.930	3.295	Inconspicuous
	Strict	4.393	3.509	Lenient
	Impulsive	3.616	3.697	Judicious
	Fast	3.731	4.163	Slow
Evaluation	Inviting	2.195	5.244	Repulsive
	Inspiring	2.240	4.492	Boring
	Kind	2.733	4.691	Hateful
	Calm	2.934	4.734	Restless
	Pure	2.377	4.859	Dirty
	Pleasant	1.809	5.605	Unpleasant
	Good	2.221	5.010	Bad
Potency	Familiar	3.159	4.127	Strange
	Simple	3.666	4.465	Complicated
	Understandable	3.375	4.347	Unintelligible
	Logical	3.829	4.457	Illogical
	Knowable	3.070	3.634	Unknowable
	Orderly	3.329	4.696	Chaotic
	Balanced	3.239	4.699	Unbalanced

Source: Authors

## 5. Discussion

### 5.1 Interpretation of Results

In the most general sense, the paired T-Test showed that the terms Beauty and Ugliness differed in all of the observed bipolar adjectives (with the exception of “Impulsive/Judicious”). Hence, it can be said that the two terms are used as opposites in Slovak, the language in which the study was conducted. At the same time, the presence of statistically significant differences in twenty out of twenty-one bipolar adjectives proves that the semantic differential method and the adjectives used within it are capable of discerning the meaning of the individual terms and their connotations; hence, the methodology may be considered to be appropriate for further research.

A more detailed analysis of the intensity of the inclination towards one or the other of the two extremes of the bipolar adjectives revealed the connotations that are most characteristic of the terms Beauty and Ugliness – for Beauty, these included Pleasant, Inviting, and Inspiring, while Ugliness was characterised as Unpleasant, Repulsive, and Bad. The association of the term Beauty with positive connotations has also been demonstrated in other studies and insights in the fields of social psychology and aesthetics. The term Beauty is most commonly associated with the adjective “good”, to such an extent that it has become one of the “aesthetic rules”. This is referred to as the “what is beautiful is good” stereotype (Dion et al., 1972), and it describes the tendency to attribute desirable interpersonal qualities to physically attractive targets (Lemay et al., 2010). This is similar to the “halo effect” (Nisbett & Wilson, 1977), which is mostly found in social psychology and explains the fact that people create an overall positive image of the various (even unrelated) characteristics of person based on their impression and evaluation of a single feature. What is more, neuroscience has provided many studies in which the perception of beautiful objects, such as faces (Ito et al., 2016) or paintings (Abitbol et al., 2015), is associated with the ratings of pleasantness. Hence, Beauty is generally associated with positive connotations.

The link between the term Ugliness and its characteristic adjectives (Unpleasant, Repulsive, and Bad) resembles the link between Beauty and the good in attractiveness stereotypes – in this case, the rule “ugly is bad” highlights the fact that unattractiveness is a disadvantage, consistent with negativity bias (Griffin & Langlois, 2006). The link between Ugliness and negative characteristics is not only demonstrated in the evaluation of others – it is a broader phenomenon that is even included in the definition of the word “ugly” (“ugly represents unpleasant visual or behavioural traits” – Fraser et al., 2016). According to the psychoanalysts, the experience of Ugliness results from the emergence into consciousness of certain fantasies that alter the person’s aesthetic sense in such a way that they become the source of our most disturbing and repulsive feelings (Hagman, 2003). The link between Ugliness and repulsiveness implies a tendency to avoid negative impulses or to try to escape from them when they are encountered (physically or mentally). Therefore, Ugliness evokes mostly negative reactions in several areas.

The most characteristic adjectives were those in the evaluation dimension – this semantic differential factor generally provided the greatest degree of differentiation. This means that the terms Beauty and Ugliness are substantially associated with values.

## 5.2 Limits of the Research and Suggestions for Further Research

One of the limits of the method was the lower degree of internal reliability of the activity scale (Cronbach's  $\alpha_{\text{Beauty}} = 0.563$ ;  $\alpha_{\text{Ugliness}} = 0.570$ ). That being said, the lower degree of internal consistency of the scale is not necessarily caused by the selection of the wrong adjectives – it is understandable that some beautiful objects may activate individuals, trigger reactions or behaviours, while other beautiful objects (or the same objects in a different setting or with other viewers) may have a relaxing, contemplative effect. The same applies to Ugliness – it can trigger both a flight response (averting gaze, turning away or even escaping), but when it provokes terror, the individual may “freeze” or even be stunned by fascination. Despite the existence of such an explanation, it would undoubtedly be beneficial to expand the list of bipolar adjectives. Even if the search for more consistent items was unsuccessful, the data obtained by describing the relationship between the terms Beauty and Ugliness in the context of the new characteristics (other bipolar adjectives) would bring additional information.

Considering the fact that the research was conducted purely on a sample of Slovak adults, it is questionable whether the results obtained can be generalised. The term Beauty may be culturally and linguistically conditioned to a certain extent, and it is debatable whether the findings will also apply to other language groups and cultures. On the other hand, this limitation might possibly inspire other research teams to carry out comparative research. The discrimination sensitivity of the adjective pairs used and the subsequent ability of the methodology to identify the observed differences provides the motivation for the study to be

replicated in other languages and cultural backgrounds. Since the method of semantic differential is suitable for the study of the connotations of the terms Beauty and Ugliness and the selected bipolar adjectives were able to differentiate the terms rather well; the methodology has the potential to also be used for further studies of the term Beauty in our language region – including its opposites or synonyms.

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