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**IMAGERY VIVIDNESS AND EMOTIONALITY OF CONCRETE AND
ABSTRACT WORDS: A CLASSROOM ACTIVITY**

**IMAXE E EMOTIVIDADE DE PALABRAS CONCRETAS E ABSTRACTAS:
UNHA ACTIVIDADE DE CLASE**

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RESUMO

As palabras teñen moitas propiedades psicolóxicas, entre as máis importantes está a viveza de imaxe e a emotividade. Un dos coñecementos básicos que deben ter os estudantes de psicoloxía é o de os valores das palabras. Cando as palabras son seleccionadas ó chou, as palabras concretas suscitan máis viveza de imaxe que as palabras abstractas, estas suscitan máis emotividade que as palabras concretas. Neste artigo describo unha actividade de clase deseñada para axudar os estudantes a comprender o concepto de viveza e emotividade das palabras, así como a súa concreción e abstracción. Apliquei este procedemento a un grupo de 58 estudantes, os que se lles deu unha lista de 40 palabras, e se lles pediu que puntuasen a viveza de imaxe e a emotividade de cada unha das palabras. Eles mesmos fixeron a análise estatística dos seus propios datos e dos datos do grupo, tratando

de descubrir por eles mesmos a negativa correlación entre a viveza da imaxe e a emotividade. As palabras abstractas suscitaron unha maior emotividade que as palabras concretas.

PALABRAS CHAVE: Actividade de clase, Psicoloxía, Imaxe, Emotividade, Concreción.

RESUMEN

Las palabras tienen muchas propiedades psicológicas, entre las más importantes está la viveza y la emotividad. Uno de los conocimientos básicos que deben poseer los estudiantes de psicología es el de los valores de las palabras. Cuando las palabras son seleccionadas al azar, las palabras concretas suscitan más viveza de imagen que las palabras abstractas, y éstas suscitan más emotividad que las palabras concretas. En este artículo

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describo una actividad de clase diseñada para ayudar a los estudiantes a comprender el concepto de viveza y emotividad de las palabras, así como su concreción y abstracción. Apliqué este procedimiento a un grupo de 58 estudiantes, a los que se le dio una lista de 40 palabras y se les pidió que puntuasen la viveza de imagen y la emotividad de cada una de las palabras. Ellos mismos efectuaron el análisis estadístico de sus propios datos y de los datos de grupo, tratando de descubrir por ellos mismos la negativa correlación entre viveza de imagen y emotividad. Las palabras abstractas suscitaron una mayor emotividad que las palabras concretas.

PALABRAS CLAVE: Actividad de clase, Psicología, Imagen, Emotividad, Concreción.

ABSTRACT

Words have numerous “psychological” properties, among the most important of which are imagery vividness and emotionality. Achieving understanding of these properties of words is a basic requirement in undergraduate psychology courses. Here I describe a classroom procedure designed to help students understand the concepts of imagery vividness and emotionality, as well as concreteness and abstractness. We applied this procedure to a group of 58 students, who were each given a list of 40 words and asked to rate the imagery vividness and emotionality of each word. They then performed simple statistical analyses of their own data and of the group data, enabling them to discover for themselves the well-known negative correlation between imagery vividness and emotionality, the typically high imagery vividness and low emotionality of concrete words, and the typically low imagery vividness and high emotionality of abstract words.

KEY WORDS: Classroom activity, Psychology, Imagery, Emotionality, Concreteness

INTRODUCTION

Word properties like imagery vividness and emotionality have been studied for many years, considering words in many languages. For example, Rubin (1980) analysed a total of 51 properties of words. A knowledge of word properties is relevant not only for psychological research (Paivio, Yuille, & Madigan, 1968), but also in applied contexts including language learning (Campos, Gómez-Juncal, & Pérez-Fabello, 2007; Campos, González, y Amor, 2003). Note that it is important to independently assess the properties of words in different languages, since the properties of semantic analogues may of course differ.

The most widely studied word properties include imagery vividness and emotionality (see Campos, 1995). In studies in which words are randomly selected, imagery vividness is generally higher for concrete words than for abstract words (Paivio et al., 1968), and there is generally a strong positive correlation between concreteness and imagery vividness: in a previous review article (Campos, 1995), I found that reported correlations ranged from .65 (Paivio, 1968) to .97 (Campos, 1989). In contrast, emotionality is generally higher for abstract words than for concrete words (see Paivio, 1968): in my 1995 review I found that reported correlations ranged from -.38 (Brown & Ure, 1969) and -.54 (Paivio, 1968), again considering studies in which words were randomly selected. These general rules have some exceptions: notably, some words are abstract but nonetheless have high affective load (for example *anger*, *anxiety* or *sadness*) or emotional load (for example *death* or *tragedy*), and thus have high imagery vividness (Denis, 1979). In addition, some words (for example *goddess*, *demon* and *ghost*), although they have low concreteness, tend to have high imagery vividness, since we are familiar with pictorial representations of these beings.

Studies that have analysed relationships between imagery vividness and emotionality have

in all cases obtained negative correlations, ranging from $-.12$ (Rubin, 1980) to $-.47$ (Campos, 1989) (see Campos, 1995, for a review).

The undergraduate classroom activity described in the present report aims to familiarize students with these two word properties, imagery vividness and emotionality, considering both abstract and concrete words. Our goal is that students should comprehend these properties by scoring the words themselves. We also aim for them to work out for themselves that these two properties are negatively correlated, again considering both abstract and concrete words.

METHOD

I used a sample of 40 words, selected at random, from the list published by Paivio et al. (1968), using the first 20 concrete words and the first 20 abstract words obtained. The 40 words were placed in random order; the resulting word list is shown in Table 1. This list was presented twice to small groups, on separate sheets, one with written instructions requesting that each word be scored for imagery vividness, the other with written instructions requesting that each word be scored for emotionality. Some students completed the imagery vividness sheet first; others completed the emotionality sheet first.

The written instructions on each sheet were also read out loud by the class teacher. These instructions were as follows: "Some words readily evoke a sensory experience, like a mental image or sound, while other words do not readily evoke any image. Your task is to rate, on a 7-point scale, the ease with which each word evokes an image. If the word evokes a very clear image, you should give it a score of 7; if it evokes little or no image, you should give it a score of 1; and if it's intermediate, you should give it an intermediate score. For example, the words 'car' and 'fact'. 'Car' readily evokes an image, and

would be given a high score; whereas 'fact' evokes an image much less readily, and would be given a low score. Write the number to the right of each word. Work fast, but try not to be too hasty in your judgements. Don't worry if you repeat the same number lots of times. You can start now."

Once the imagery vividness scores have been obtained, the word list is presented again on a new sheet for evaluation of emotionality, with the following instructions: "You should now rate each of the words below according to the intensity of emotion it provokes in you, independently of whether it's a positive or negative emotion. The score should be between 1 = no emotion, and 7 = strong emotion. For intermediate emotions, use intermediate scores. The important thing is your sincere judgement. Work impartially and rapidly, but try not to be too hasty in your judgements. In each case, write the number to the right of the word. You can start now."

RESULTS AND DISCUSSION

The test is scored and analysed in small groups. The first thing students have to do is find the mean imagery vividness of each word: to do this they sum the scores given to that word by each student, then divide by the number of students. They find the mean emotionality of each word in the same way. Next they calculate Pearson coefficients of correlation between imagery vividness and emotionality. They then assess whether concrete and abstract words differ in imagery vividness or emotionality: specifically, students calculate the mean imagery vividness and mean emotionality of concrete words and of abstract words, then apply *t* tests (one for imagery vividness, one for emotionality) to assess whether the means differ significantly between the two types of word.

We went through this procedure in a class of 58 second-year undergraduate psychology

students. For the present study, the word list was presented to subjects in translation to Spanish. Mean imagery vividness and emotionality scores, and corresponding standard deviations ($n = 58$), obtained for each word

are listed in Table 1. The Pearson coefficient of correlation between imagery vividness and emotionality was $-.12$ ($p > .05$): i.e. words with high imagery vividness tend to have low emotionality, and vice versa.

TABLE 1. The Word List Used in the Present Study, Showing Mean Imagery Vividness and Emotionality Values Scores Given to Each Word by 48 Participants

Words	Concrete-Abstract	Imagery		Emotionality	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mountain	C	6.86	.44	3.64	2.17
Shoes	C	6.79	.61	2.19	1.59
Delirium	A	2.41	1.64	4.29	2.18
Cat	C	6.78	.65	3.57	2.20
Tendency	A	2.12	1.55	2.48	1.88
Knowledge	A	2.26	1.45	3.95	2.13
Essence	A	2.66	1.73	4.36	2.13
Restaurant	C	6.59	.62	3.43	1.99
Health	A	3.67	1.92	5.81	1.56
Grass	C	6.64	.81	4.12	2.27
Crag	C	5.16	2.0	2.52	2.08
Photograph	C	6.69	.82	5.69	1.74
Disparity	A	2.07	1.60	1.57	1.27
Pupil	C	6.16	1.36	2.98	1.96
Life	A	3.97	2.09	6.31	1.10
Obsession	A	2.40	1.60	4.86	2.00
Vanity	A	1.91	1.35	3.52	2.27
Iron	C	5.36	1.80	1.29	1.01
Banality	A	2.60	1.74	2.86	2.20
Infant	C	6.84	.49	5.93	1.51
Economy	A	2.91	1.86	3.14	2.25
Mind	A	2.88	1.89	4.52	2.30
Air	C	3.57	2.06	3.91	2.40
Bronze	C	4.86	2.10	1.67	1.41
Theory	A	2.45	1.65	2.12	1.55
Blasphemy	A	2.60	1.91	3.31	2.13
Student	C	6.33	1.08	3.48	2.27
Hostility	A	2.88	1.92	4.10	2.01
Painter	C	6.52	.96	3.02	2.15
Tripod	C	5.84	1.96	1.59	1.27
Power	A	3.26	1.94	4.47	1.98
Procession	C	5.43	1.77	4.50	2.16
Garret	C	6.05	1.41	3.02	2.34
Concept	A	2.00	1.69	1.81	1.56
Malice	A	2.74	1.83	4.48	2.17
Fork	C	6.86	.51	1.34	.95
Speaker	C	5.26	1.99	2.22	1.68
Aptitude	A	2.16	1.60	3.88	2.26
Fault	A	2.79	2.04	3.79	2.17
Circle	C	6.83	.63	1.38	1.07

Again considering scores obtained by these 58 students, the mean imagery vividness of concrete words (6.00 , $SD = .60$) was significantly higher, $t(57) = 22.20$, $p < .001$, than that of abstract words (2.68 , $SD = 1.17$) (Fig. 1). Our results were thus in agreement with those of Campos (1989) and Paivio et

al (1968). The mean emotionality of concrete words (2.97 , $SD = .88$) was significantly lower, $t(57) = -5.75$, $p < .001$) than that of abstract words (3.71 , $SD = .97$) (Fig. 2). This result is consistent with the results obtained by Brown and Ure (1969) and Paivio (1968).

Figures 1 and 2 clearly illustrate the opposing characteristics of concrete and abstract words: concrete words with high imagery

and low emotionality, abstract words with low imagery vividness and high emotionality.

FIGURE 1. Mean imagery vividness scores given to concrete and abstract words by the 58 participants in the present study.

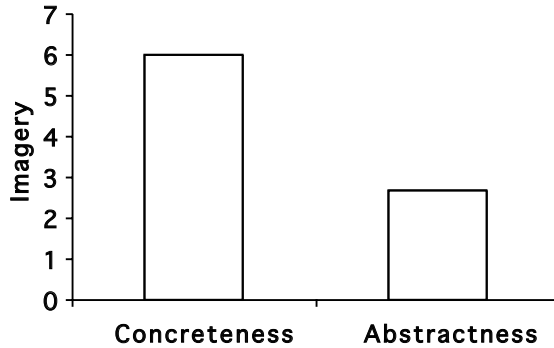
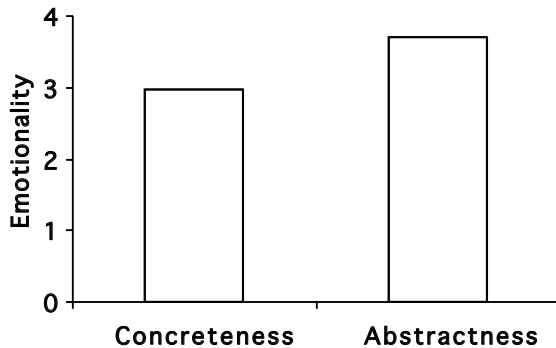


FIGURE 2. Mean emotionality given to concrete and abstract words by the 48 participants in the present study.



In conclusion, the procedure described here is effective for helping students to understand the concepts of concreteness, abstractness, imagery vividness, and emotionality. Furthermore, it enables them to discover for themselves the negative correlation between imagery vividness and emotionality, and provides basic training in data collection and simple statistical analysis.

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