

A Picture is Worth a Word: The Effect Of Titles On Aesthetic Judgments

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Abstract

In the present study we examined the effect of titles on aesthetic perception of artistic photographs. Based on the model of aesthetic appreciation and judgment (Leder et al., 2004) the process of aesthetic perception was divided into two components: an emotional and a cognitive dimension. It was hypothesized that the aesthetic judgment varies with both the intensity of emotional experience and the depth of cognitive processing. We further wanted to find out, whether it is possible to manipulate these two components independently. In an experiment with artistic black-and-white photos and single-word titles these assumptions could be confirmed. The present study demonstrates that one word beneath a picture can increase the depth of cognitive processing and the aesthetic judgment of an artwork.

Keywords: entitling art, title effects, art perception, aesthetic judgment, cognitive processing, visual artworks

I. Introduction

It is a popular saying that a picture is worth a thousand words. But can these ‘words’ be unique? Or may the meaning and even the aesthetic appreciation of a picture be influenced by contextual factors such as titles? And if so, which mental processes and structures are involved?

Leder et al.’s (2004) model of aesthetic appreciation and aesthetic judgment suggests that there are cognitive and emotional dimensions in the aesthetic experience. However, the main focus usually lies on cognitive aspects (perceptual analyses, implicit memory integration, explicit classification, cognitive mastering and evaluation), while the emotional dimension is seen as a by-product of these cognitive aspects. Our approach is based on this model of aesthetic experience, but with a more independent view of cognitive and emotional parts of aesthetic experience.

Up to now, researchers found some general effects of titles, but there has never been made a clear distinction between cognitive and emotional aspects of aesthetic experience. For instance, in a study by Franklin, Becklen, and Doyle (1993) changing the title affected individual interpretive reading of paintings. This finding suggests that the person’s experience of a painting depends on specific aspects of the titles. Russel and Milne (1997) examined which components of the person’s experience are affected by titles. They used abstract paintings and found an increase in meaningfulness and a decrease in abstractness. Based on Bartlett’s (1932) concept of

effort after meaning they further expected an enlarged hedonic value of the paintings, but they could not confirm this hypothesis. In a later study with a within-subject design Russel (2003) found the hypothesized connection between an increased meaningfulness and an enlarged hedonic value as an effect of elaborative titles and further descriptions of the paintings. However these findings could not be generalized to a between-subjects design, where different people viewed the paintings either with title plus description or untitled (Russel, 2003). Millis (2001) found that metaphorical titles lead to greater aesthetic experiences than no title, random titles, or descriptive titles. Specifically, his results show that elaborative titles increase the understanding of illustrations and photographs and also improve the quality of the aesthetic experience (liking, interest, elicited thoughts and emotion). That’s what he called the “elaboration effect”. Millis concluded that titles increase aesthetic experience only if they contribute to a rich and coherent representation. Leder, Carbon and Ripsas (2006) also found influences of titles on the understanding of abstract art, but not on their appreciation. In another study Belke, Leder, Strobach and Carbon (2010) focused on the fluency theory (Reber, Schwarz, & Winkielman, 2004). As expected they found that semantically related titles produced highest appreciation followed by no titles and unrelated title conditions.

Research up to now does not provide a clear picture about the actual potential of entitling art. It is clear that there are effects of titles on the understanding of (at least abstract) art. However, the connections between understanding, liking, and appreciation remain unclear. We assume that cognitive and emotional processes are two interdependent but yet separable aspects of the whole aesthetic experience. The emotional dimension was operationalized as [1] implicit liking, [2] spontaneous interest, and [3] extent of emotions, whereas the cognitive dimension referred to [1] the attributed meaningfulness, [2] thoughts, and [3] understanding of the artwork. The idea was that aesthetic judgments vary with both the intensity of emotional experience and the depth of cognitive processing. Therefore, it should be possible to separately affect them by either cognitive or emotional structuring of the context (in our study context manipulation was title manipulation). Figure 1 illustrates our assumptions. A title presented along with the artwork could either increase the intensity of the emotional component (titles such as

satisfaction or *love*) or it could deepen the cognitive processing (examples would be titles like *equality* or *emancipation*). Titles are seen as contextual factors, which guide the beholder's aesthetic experience, even if there is no attention actively drawn to them. In this framework one could also think of effects of emotional music in the background or of cognitive information provided by an audio guide while visiting an art exhibition.

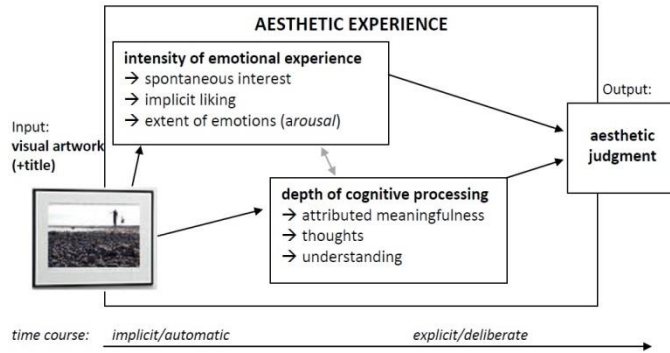


Figure 1: a two-process-model of aesthetic experience

We hypothesized that it should be possible to manipulate the cognitive dimension of aesthetic experience by using “cognitive demanding”, elaborative titles. These titles should increase the cognitive component of aesthetic experience (more attributed meaningfulness, more thoughts, and a deeper understanding of the artwork), whereas the emotional component should not be affected (no changes in implicit liking, extent of emotions, or spontaneous interest). The deepened cognitive processing should further lead to better aesthetic judgments for titled than for untitled photographs.

In most of the rare studies long titles were used and participants' attention was actively drawn to them. Therefore, it could be possible that participants rated only their understanding of the words or sentences presented along with the artwork. For our objective, we wanted to use single-word titles located underneath the pictures in small letters, without any active attention drawn to them. For untitled photos, the word “untitled” appeared at the title position. Figure 2 shows an example of the setup of photo and title.

II. Methods

III. Materials

Twelve artistic black-and-white photographs by Magnum photographers Elliott Erwitt and Henry Cartier-Bresson were used as stimuli. They were presented on the screen on a black background surrounded by a small white frame. On the white frame beneath the picture the corresponding single-word title was presented (see Figure 2).



Figure 2: Example of an untitled photo. The German label “Ohne Titel” means “without title”

After a pretest, the pictures were divided into two comparable sets, each consisting of six photographs. Neither a priori nor a posteriori there were differences in the dependent variables (emotional intensity, cognitive depth, aesthetic judgment) between Set 1 and Set 2.

IV. Participants and Design

Sixty-two Konstanz University undergraduate psychology students, fifty of them female, participated in our study for course credit. All were art novices. No person should see the same picture with and without title. Nevertheless, we wanted to perform within-subject comparisons between the title conditions. Therefore participants were randomly assigned to one of two groups (group A and group B). All members of each group viewed and evaluated the two parallelized sets of photographs (see Table 1). Consequently, each participant viewed all twelve photographs in random order. This design made it possible to analyze both within-subject differences between title conditions (Set 1 vs. Set 2 in both groups) and between-subjects differences between title conditions (Group A vs. Group B in both sets).

Table 1: Title conditions in the two groups

	Group A (n=32)	Group B (n=30)
Picture Set 1	with title	untitled
Picture Set 2	untitled	with title

V. Procedure

Initially, the participants were informed that they would attend a virtual tour through an art exhibition with black-and-white photographs from the early to mid 20th century. Then, they were asked to look carefully at every photo and answer some questions. It was stressed that there were no right or wrong answers and that honest opinion was needed. According to the theoretically assumed time course of aesthetic experience subjects should first answer the three

emotional items and afterwards the three cognitive items on a six-point scale. See Table 2 for the exact wording of the items. After all photographs had been evaluated, participants were asked to rank the twelve photographs by their aesthetic goodness.

Table 2: Items used in the study

emotional items	1. "How much do you enjoy watching this photo?" (liking) 2. "How high was your spontaneous interest in this photo?" (interest) 3. "To what extent did this photo evoke your emotions?" (emotion)
cognitive items	4. "How meaningful does the picture seem to you?" (meaningfulness) 5. "How well do you understand the meaning of the photo?" (understanding) 6. "To what extent does the picture elicit thoughts?" (thoughts)
aesthetic judgment	7. "Rate the picture's aesthetic goodness. You can award up to 10 points with a minimum of one point." (rating)

After all photos were viewed and evaluated: "Please rank all twelve pictures. Start with the picture which is the aesthetically best artwork in your opinion." (ranking)

For analyses we formed sum scores for the variables 'emotional intensity' and 'cognitive depth', each based on three items and, therefore, potentially ranging from three to 18.

VI. Results

The results were analyzed in two steps. We first used linear regression analyses to determine whether emotional intensity and cognitive depth correlated with aesthetic judgment (rating). All 744 cases of aesthetic evaluations (62 participants \times 12 pictures) were used to examine whether they support the *theoretical framework* (Figure 1). We then compared emotional intensity, cognitive depth, and aesthetic judgments between picture sets and participant groups with respect to the *title condition* to see whether titles deepened cognitive processing and enhanced aesthetic judgments (rating and ranking).

VII. Evaluation of the theoretical framework

Firstly, internal consistency of the two variables (emotional intensity and cognitive depth) was calculated as Cronbach's Alpha. We found $\alpha_{\text{emotional}} = .84$ and $\alpha_{\text{cognitive}} = .66$. According to George and Mallery (2003), the internal consistency of survey instruments should at least achieve alphas of .60. This limit could be succeeded, even though our small number of items (three per variable) would generally rather lead to an underestimation of Cronbach's Alpha.

Linear regression analyses revealed that the intensity of the emotional experience accounted for 62% of the variance in the aesthetic ratings, while the depth of cognitive processing alone accounted for 43% of the variance. Both predictors together accounted for 68% of the variance in the aesthetic ratings (see Table 3). In the multiple regression the error reduction was significant, regardless of the order of predictors (emotional first: $F(1,741) = 152.695$, $p < .001$; cognitive first: $F(1,741) = 599.738$, $p < .001$). This pattern does not change when titled and untitled photographs are considered separately.

Table 3: Linear regression analyses

Dependent variable: <i>aesthetic rating</i>				
	β	t	p	R^2
Regression 1				
intensity of emotional experience	.786	34.60	.000	.617
Regression 2				
depth of cognitive processing	.653	23.47	.000	.426
Multiple regression				
intensity of emotional experience	.612	24.49	.000	
and depth of cognitive processing	.309	12.36	.000	.683

VIII. Effects of Title Condition

Paired t-tests were applied to examine title effects on the two aspects of the aesthetic experience: emotional intensity and cognitive depth. Therefore, mean differences between titled and untitled photos were calculated for each participant (Group A: Set 1 - Set 2; Group B: Set 2 - Set 1). There were positive title effects on both emotional intensity and cognitive depth. However, there was a substantially larger effect on the cognitive depth ($t(61) = 5.584$, $p < .001$, Cohens $d = 0.92$) than on the emotional intensity ($t(61) = 2.992$, $p < .01$, Cohens $d = 0.41$). Figure 3 illustrates these findings.

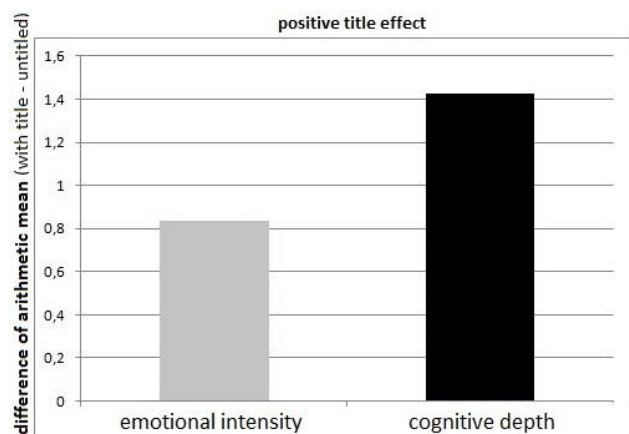


Figure 3: Titles lead to an increase in both dimensions of the aesthetic experience

On the side of the aesthetic judgments there was also a significant title effect on the ratings ($t(61) = 3.031, p < .01$, Cohen's $d = 0.43$). For the ordinal aesthetic ranking we used a nonparametric paired sample Wilcoxon sign-rank test, which likewise showed significant positive title effects ($z = 2.969, p < .01, \phi = 0.38$). Figure 4 illustrates title effects on the aesthetic ranking. It should be noted that 62 rankings (by the 62 participants) were included in our analyses, so that every rank (from one to twelve) was assigned 62 times. The pattern is clear: high ranks were more often given to titled than untitled photographs. Also note that the same picture stimuli occurred in the titled and untitled condition (due to inverse title condition of the sets for group A and B).

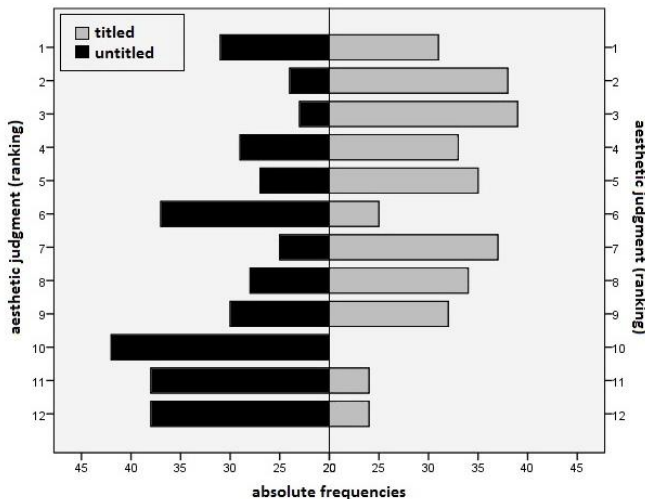


Figure 4: Ranking distribution in the titled and untitled condition.

Secondly, we analyzed the ratings for the two picture sets by computing univariate ANOVAs across the two independent samples (Groups A and B) with title condition as factor. Emotional intensity, cognitive depth and aesthetic rating served as dependent variables. For both sets there were highly significant positive title effects on the depth of cognitive processing (Set 1: $F(1,60) = 17.166, p < .001$, Cohen's $d = 1.07$; Set 2: $F(1,60) = 10.454, p < .01$, Cohen's $d = 0.84$). Differences in the aesthetic ratings were in the expected direction, but not significant (Set 1: $F(1,60) = 2.159, p = .147$, Cohen's $d = 0.38$; Set 2: $F(1,60) = 3.367, p = .061$, Cohen's $d = 0.50$). Regarding emotional intensity, there were no title effects in Set 1, but significant effects in Set 2 ($F(1,60) = 4.618, p < .05$, Cohen's $d = 0.56$). Figure 5 illustrates these findings.

For the rankings we used nonparametric Mann-Whitney-U-tests for independent samples. There were title effects on the mean ranks in both sets with 99% confidence (Set 1: mean rank_{titled} = 38.22, mean rank_{untitled} = 24.33, $z = -3.032, p < .01$, effect size $\phi = 0.39$; Set 2: mean rank_{titled} = 38.67, mean rank_{untitled} = 24.78, $z = -3.032, p < .01$, effect size $\phi = 0.39$).

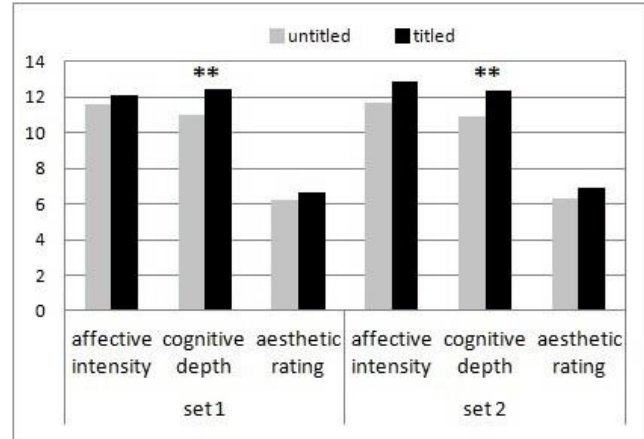


Figure 5: univariate ANOVA for Set 1 and Set 2, title effects (** $p < .001, * p < .01$)

In order to give a quick overview, Table 4 summarizes the resulting effect sizes. Cohen suggested that $d = 0.2$ be considered a small effect size, 0.5 represents a medium effect size and 0.8 a large effect size. Therefore we found large title effects on the depth of the cognitive processing, while effects on the emotional intensity were rather small and in the sets not even significant. For the aesthetic judgments (compiled as ratings and rankings), there were constantly small positive title effects.

Table 4: effect sizes (Cohen's d/ϕ)

Cohen's d	paired sample t-test	Set 1	Set 2
		t-test for independent samples	
aesthetic experience			
emotional intensity	0.41*	0.29	0.56
cognitive depth	0.92**	1.07**	0.84**
aesthetic judgment			
rating	0.42*	0.38	0.50
ranking ^a	0.38*	0.39*	0.39*

a. nonparametric Wilcoxon-t-test instead of paired sample t-test and Mann-Whitney-U-tests instead of t-test for independent samples. Therefore effect sizes are phi-coefficients here.
** $p < .001, * p < .01$

IX. Discussion

Regression analyses revealed that the emotional component accounts to a larger extent for the aesthetic judgments (ratings) than the cognitive component, which suggests that emotion is a major source for a good aesthetic judgment. Interestingly, this result is inconsistent with the common view that the aesthetic value of a picture mainly depends on cognitive processes extracting the meaning of pictures. It rather appears that the immediate implicit liking, interest, and emotional attraction can explain the aesthetic judgment better than cognitive aspects of the aesthetic

experience – at least in our sample of art novices. In view of other research one might hypothesize that these findings could be reversed for art-experts, who generally have a better understanding of artworks (see Leder et al., 2006). Better understanding could also indicate a greater influence of cognitive aspects on aesthetic experience or judgment.

In fact, titles did not affect the described connections between aspects of the aesthetic experience and the aesthetic judgment. But there were title effects on the absolute level of evaluations. The largest title effects appeared with respect to the *depth of the cognitive processing* in the aesthetic experience. That is, there were higher attributed meaningfulness, more thoughts, and better understanding of titled rather than untitled photographs. Due to the much smaller effects on the *emotional component* of the aesthetic experience it can reasonably be concluded that it is possible to manipulate emotional and cognitive aspects separately, as hypothesized. Moreover, there were small but reliable effects on *aesthetic judgment*. Titled photographs were consequently ranked and rated higher than untitled photos. In the between-subjects comparisons of the picture sets the rating differences were not significant, but differences and effect sizes tended to be in line with the positive effects of entitling photographs for within-subjects comparisons. Possibly, these weak effects are due to the small sample size in the two groups. Further research with larger samples may be required. Due to the finding that emotion is – at least for our non-expert-sample – the major source of a good aesthetic judgment the question arises, whether emotional intensifying titles would lead to even greater effects on the aesthetic judgments.

After all, we conclude that titles – even if they are just single-worded without attention actively drawn to them – are a promising and powerful way to modify the aesthetic experience in art perception.

X. References

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