In search for the reversed camera angle effect

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ABSTRACT

This study was performed as a search for the reversed camera angle effect. It investigated if the evaluation of “strong” and “weak” products can be influenced by the camera angle. It was hypothesized that the strong products will be rated higher from a low camera angle and the weak products will be rated higher from a high camera angle because their intrinsic properties will be emphasized by the camera angle. The rating of the products was done on the evaluative factor with a seven point Likert scale. In this study both hypotheses were partly confirmed, there was a main camera angle effect found for one of the three strong products and there was a reversed camera angle effect found for two of the three weak products. The basis of the theory and the collected data give hope for future research for the reversed camera angle effect. Recommendations for future research are to take into account the role that Need For Cognition (NFC) has on product evaluation and to ensure a careful selection of products that carry the intrinsic properties that are hypothesized to be emphasized by the camera angle.

In search for the reversed camera angle effect

INTRODUCTION

For marketers it is very useful to know in which way consumers perceive products. So it is not surprising there is a considerable amount of literature about product design and aesthetics. While there are numerous books about aesthetics and design there is little scientific research supporting this.
An approach that Meyers-Levy and Peracchio (1992) took was to manipulate the camera angle, with respect to a product, to influence the way in which participants judged that product. It is a well known phenomenon in social science that these camera angle effects, downward-looking, eye-level or upward looking, have a significant effect on how we look at faces (Kraft, 1987). Meyers-Levy and Peracchio also found an effect that camera angle can have on the evaluation of products.

The effect that a camera angle has on products influences the way we judge these products (Kraft, 1987; Meyers-Levy & Peracchio, 1992; Peracchio & Meyers-Levy, 2005). Low camera angles looking up provide the perception of power, potency (Kraft, 1987; Meyers-Levy & Peracchio, 1992), strength, action and superiority (Giannetti, 1982). A downward-looking camera angle, on the contrary, provides the perception of an object to be less threatening and more malleable (Yang, Zhang & Peracchio, 2010).

According to Van Rompay, Hekkert, and Muller (2005) “we may also associate smallness with refinement, as in the experience of relatively small, technologically controlled details in a design. In those cases, disproportional large features may be understood as coarse. Whereas expressions like impressive, luxurious or coarse are most likely not only related to the size of people or things around us, the size schema is, at least to some degree, expected to underlie these expressions” (p. 365).

Peracchio and Meyers-Levy (2005) investigated if a high camera angle, which imparts the concept of weakness (Kraft, 1987), in a different context impart the relatively favorable notion of naturalness. They took an evolutionary stand explaining “the fact that

most natural, organic objects grow in or are found on the ground below eye level (e.g., soil, vegetation, bodies of water, etc.)" (p. 35-37).
They used a cereal advertisement with a short paragraph of copy and a priming task that activated the concept of naturalness while manipulating the camera angle. They found that stylistically imparted descriptive concepts only appeared when the viewers engage in somewhat extensive processing and the concepts conferred by the stylistic properties are otherwise activated.

It is well known that processing fluency has effect on the evaluation of products and our attitudes towards these products. The more fluently perceivers can process an object, the more positive their aesthetic response will be (Hekkert & Leder, 2008; Reber, Schwarz & Winkielman, 2004).
The interesting question is; do products that have intrinsic properties like impressiveness and potency or refinement and childlikeness have contrary camera angle effects?
The expectation will be that if camera angle effects emphasize the same properties that products carry intrinsically they will be processed more fluently and thus be judged more positively.

H1: Products that have strong, potent, powerful properties are judged more positively from a low camera angle looking up than from a high camera angle looking down, because an upward-looking camera angle emphasizes these properties.

H2: Products with charmful, refined, rounded properties are judged more positively from a high camera angle looking down than from a low camera angle looking up, because a downward-looking camera angle emphasizes these properties.

While Peracchio and Meyers-Levy (2005) primed the viewer with naturalness to perceive the product (cereal box) more favorably from a high camera angle, in the present research it is investigated if the more basic camera angle effects (e.g., Kraft 1987) emphasize the intrinsic properties of products.

METHOD

Stimuli

For this experiment two types of products were used. One type of products that carry properties like potency, powerfulness, impressiveness and strength and another type of product that carry the more positive properties of downward-looking camera effects like refinement, subtlety, delicacy and approachableness. In the search for products with those contrary intrinsic properties it is important to find some specific characteristics in products that evoke these properties. Zhang, Lawrence, & Price (2006) explained in their study that angular shapes tend to induce associations with traits that express energy, toughness and strength, and rounded shapes tend to induce associations with traits that express approachableness, friendliness, and harmony. Although these are properties that say something about the valence of potency and activity of the products (Osgood, Suci & Tannenbaum, 1957), it was the goal of this experiment to emphasize these properties by camera angle manipulation and evaluate the products on Osgood's (1957) evaluative factor.

To strengthen this experiment there were products used from the same category that have these opposite properties, to keep the participant as much in the dark about the purpose of the research as possible.

For the strong products there were pictures used of three products; a widescreen TV, a refrigerator and a big coffee machine. For the weak products there were pictures used of three products from the same branch; a small digital camera, a rounded toaster and a small kettle. Whereas the strong products distinguish themselves by their physical size and there angular appearance which confer them the image of potency, strength and impressiveness the weak products distinguish themselves by their smallness and roundness which confer them the image of refinement, approachableness and subtlety.

The products were photographed at an angle of approximately 40 degrees above and below eye level, the same angle Kraft (1987) and Meyers-Levy and Peracchio (1992) used in their search for camera angle effects.

To keep the participants in the dark about the purpose of the experiment the twelve pictures of the six products were used in two questionnaires. One picture per product (high or low camera angle) in each questionnaire. This resulted in two questionnaires that treat every product from high or low camera angle. To limit the influence of preexisting brand perceptions on evaluation all identifying brand names and logos of the products were masked.

Apparatus

The products were judged with a seven point Likert scale with an opposing term at either end of the scale rating the overall impression of the products. To prevent response tendencies some of the opposites were commuted. The scale covers the evaluative factor that Osgood et al. (1957) developed, by using seven semantic opposites that were most heavily loaded with this factor (see Table 1). The evaluative factor is the only factor that was used to judge the products, that is because the evaluative factor is the most important of the semantic space dimensions (Osgood et al., 1957) and if there were used semantic opposites from the potency or activity factor (i.e., strong – weak) this would jeopardize the validity of the experiment.

Table 1 *The seven semantic opposites:*

Good – Bad
Successful – Unsuccessful
True – False
Optimistic – Pessimistic
Beautiful – Ugly
Harmonious – Dissonant
Positive – Negative

Procedure

All participants in this study were gathered through email, social media and personal communication. In total a number of 86 participants joined the experiment, but because of some not fully completed questionnaires, 71 questionnaires were used (45 men, 26 women). Participants were between 16 and 60 years of age (M = 30,13; SD = 11,03) and they were randomly divided over the two different questionnaires, 32 participants completed questionnaire 1 and 39 participants completed questionnaire 2.

The participants entered the experiment by clicking on a URL that sends them randomly to one of the two questionnaires. First, they encountered a screen welcoming them to the experiment and saying they were to judge six different products and after each product they will be asked to judge these products using a rating scale. Next, they judged the six products independently from each other with the sevenfold semantic scale. At the end of the questionnaire they were asked to fill in their sex, education level and age and were thanked for their help.

Design

A 2x2 design was used, with camera angle (high, low) and product type (strong, weak), to analyze the data. Two questionnaires were used. Both questionnaires treated every product from high or low camera angle (see Table 2 and Table 3). The scores of each product per angle was compared to each other and analyzed with a one-sided independent-samples *t* test.

Table 2
Questionnaire 1

Product	Coffee machine	Digital camera	Refrigerator	Kettle	TV	Toaster
Camera angle	high	low	low	high	high	low
Total (*n*=32)						

Table 3
Questionnaire 2

Product	Refrigerator	Kettle	TV	Toaster	Coffee machine	Digital camera
Camera angle	high	low	low	high	low	high
Total (*n*=39)						

RESULTS

In this experiment there were no significant differences found for the scores of two strong products (the refrigerator and the widescreen TV) and one weak product (the kettle) when manipulating the camera angle, but there was a main camera angle effect found for the coffee machine and there was a reversed camera angle effect found for the digital camera and for the toaster.

The reliability of the questionnaires was tested by computing Cronbach's Alpha. A reliability coefficient of .87 was found that allows the assumption that the questionnaires did indeed measure the underlying factor.

H1: Products that have strong, potent, powerful properties are judged more positively from a low camera angle looking up than from a high camera angle looking down, because an upward-looking camera angle emphasizes these properties.

Hypothesis 1 was partly confirmed, for the strong products there was a main camera angle effect found for the coffee machine, but there was no effect found for the refrigerator and also no effect was found for the widescreen TV (see Table 4).

Table 4

Product		high angle	low angle	*t*	Sig.
	n	32	39		
Coffee machine	Mean	4.39	4.96	-2.43	.009
	Std. Dev.	.95	1.00		
	n	39	32		
Refrigerator	Mean	4.34	4.23	-.46	.323
	Std. Dev.	.93	1.06		
	n	32	39		
TV	Mean	4.21	4.17	.12	.451
	Std. Dev.	1.21	1.33		

H2: Products with charmful, refined, rounded properties are judged more positively from a high camera angle looking down than from a low camera angle looking up, because a downward-looking camera angle emphasizes these properties.

Hypothesis 2 was also partly confirmed, for the weak products a reversed camera angle effect was found for the digital camera and for the toaster, but no camera angle effect was found for the kettle (see Table 5).

Table 5

Product		high angle	low angle	*t*	Sig.
	n	39	32		
Digital camera	Mean	4.85	4.41	-1.70	.047
	Std. Dev.	1.04	1.11		
	n	32	39		
Kettle	Mean	4.46	4.40	.26	.397
	Std. Dev.	1.12	1.07		
	n	39	32		
Toaster	Mean	4.34	3.69	-2.42	.009
	Std. Dev.	1.10	1.17		

DISCUSSION

This research examined the influence of high and low camera angles on the evaluation of three strong products and three weak products of the same branch. Based on the studies of Kraft (1987), Meyers-Levy and Peracchio (1992), Peracchio and Meyers-Levy (2005) and the high reliability of the questionnaires a main camera angle effect was expected to be found. The hypotheses were not fully confirmed but the scores of the coffee machine were consistent with previous research and the scores of the digital camera and the toaster were in line with the theory of the present research.

Need For Cognition (NFC) seems to play a significant role in product evaluation. In their first study about camera angle effects Meyers-Levy and Peracchio (1992) found no camera angle effects when the participants were high in NFC and high in motivation. They attributed this to the heuristic processing hypotheses, this means that camera angle effects only arise when people make use of simple decision rules or heuristics to evaluate products. In another study of camera angle effects Peracchio and Meyers-Levy (2005) revised their vision. In this study it seems that an inverted U-shaped relationship may exist between the extensiveness of processing and both discernment and use of stylistically imparted descriptive concepts. It seems that the effect of the NFC of the participant is different for different kind of experiments. Because of this changing relationship of NFC and product evaluation it is hard to say if the NFC of the participants influenced the outcomes of the present experiment. In future research for the reversed camera angle effect it might be wise to measure peoples NFC, after taking place in the experiment, to control for NFC effects.

In the present research it is vital that the weak products carry out intrinsic properties as refinement and charm and the strong products properties as potency and powerfulness. It is questionable whether in this experiment all the chosen products did carry out these characteristics to desirable extent. This may be the reason why there were only camera angle effects found for some of the products. The chosen products were not tested for content validity. For future research therefore it is advisable to measure, on the potency

factor (Osgood et al., 1957), if the stimuli do indeed carry out these characteristics to desirable extent.

Another reason why there were only camera angle effects found for some of the products may be due to the number of participants used in the present experiment, because of the 2x2 design there are four conditions. It is preferable to use at least 25 participants per condition, this leads to a total of at least 100 participants to join the experiment. This would increase the chance to find a significant main effect.

The findings in the studies of Meyers-Levy and Peracchio (1992) and Peracchio and Meyers-Levy (2005) were never replicated in follow up studies. So the search for a camera angle effect on products seems to be a hard one. That is probably for a large part accountable for the moderation effect that NFC has on product evaluation, and this is presumably the main difference between the studies for camera angle effects for faces and for products.

So in summary the main recommendations for future research for the reversed camera angle effect are to take in account the role that NFC can play on product evaluation and also to use products that have been tested low on potency.

The observed scores of the weak products offer hope for future studies for the reversed camera angle effect. For two of the three weak products used in the present research there even was a reversed camera angle effect found, and for all weak products the mean score of the high camera angle was higher than the mean score of the low camera angle on these products, this argues for a reversed camera angle effect.

REFERENCES

- Giannetti, L. D. (1982). Understanding movies. *Englewood Cliffs, NJ: Prentice-Hall.*
- Hekkert, P. & Leder, H. (2008) Product aesthetics. *Product Experience, 10, 259-285.*
- Kraft, R. N. (1987). The influence of camera angle on comprehension and retention of pictorial events. *Memory & Cognition, 15(4), 291-307.*
- Meyers-Levy, J. & Peracchio, L. A. (1992). Getting an angle on advertising: The effect of camera angle on product evaluations. *Journal of Marketing Research, 39, 454-461*.
- Osgood, C. E., Suci, G. J. & Tannenbaum, P. H. (1957). The measurement of meaning. *University of Illinois Press.*
- Peracchio, L. A. & Meyers-Levy, J. (2005) Using stylistic properties of ad pictures to communicate with consumers. *Journal of Consumer Research, Inc., 32, 29-40.*
- Reber, R., Schwarz, N. & Winkielman, P. (2004) Processing fluency and aesthetic pleasure: Is beauty in the perceiver's processing experience? *Personality and Social Psychology Review, 8 (4), 364-382*.
- Van Rompay, T., Hekkert, P. & Muller W. (2005) The bodily basis of product experience. *Design Studies, 26, 359-377.*
- Van Rompay, T., Pruyn, A. & Tieke, P. (2009) Symbolic meaning integration in design and its influence on product and brand evaluation. *Special Issue on Design & Emotion, 3 (2), 19-26.*
- Yang, X., Zhang, J. & Peracchio, L. A. (2010) Understanding the impact of self-concept on the stylistic properties of images. *Journal of Consumer Psychology, 20, 508-520.*
- Zhang, Y., Lawrence, F. & Price, L. J. (2006) The impact of self-construal on aesthetic preference for angular versus rounded shapes. *Personality and Social Psychology Bulletin, 32 (6), 794-805*.

APPENDIX A - *Statistics*

Statistics

leeftijd

N	Valid	71
	Missing	0
Mean		30,13
Std. Deviation		11,027
Minimum		16
Maximum		60

geslacht

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	45	24,7	63,4	63,4
	Vrouw	26	14,3	36,6	100,0
	Total	71	39,0	100,0	
Missing	System	111	61,0		
Total		182	100,0		

opleiding

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	7	9,9	9,9	9,9
	4	17	23,9	23,9	33,8
	5	37	52,1	52,1	85,9
	6	10	14,1	14,1	100,0
	Total	71	100,0	100,0	

3 = MBO 4 = HAVO/VWO 5 = HBO/WO-bachelor 6 = WO-doctoraal of master

Reliability of variables

Coffee machine Bovenaf

Reliability Statistics

Cronbach's Alpha	N of Items
,838	7

Coffee machine Onderaf

Reliability Statistics

Cronbach's Alpha	N of Items
,870	7

Digital camera Onderaf

Reliability Statistics

Cronbach's Alpha	N of Items
,914	7

Digital camera Bovenaf

Reliability Statistics

Cronbach's Alpha	N of Items
,916	7

Refrigerator Onderaf

Reliability Statistics

Cronbach's Alpha	N of Items
,787	7

Refrigerator Bovenaf

Reliability Statistics

Cronbach's Alpha	N of Items
,799	7

Kettle Bovenaf

Reliability Statistics

Cronbach's Alpha	N of Items
,855	7

Kettle Onderaf

Reliability Statistics

Cronbach's Alpha	N of Items
,888	7

Widescreen TV Bovenaf

Reliability Statistics

Cronbach's Alpha	N of Items
,927	7

Widescreen TV Onderaf

Reliability Statistics

Cronbach's Alpha	N of Items
,927	7

Toaster Onderaf

Reliability Statistics

Cronbach's Alpha	N of Items
,879	7

Toaster Bovenaf

Reliability Statistics

Cronbach's Alpha	N of Items
,881	7

Overall

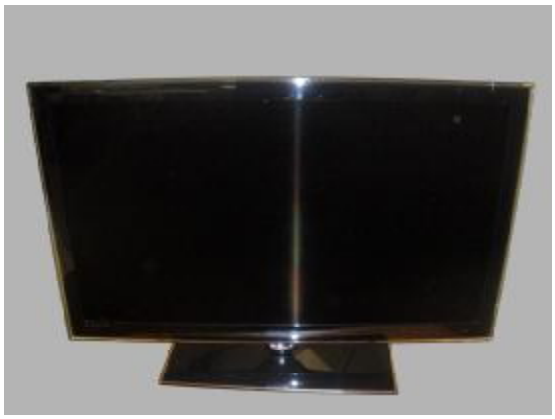
Reliability Statistics

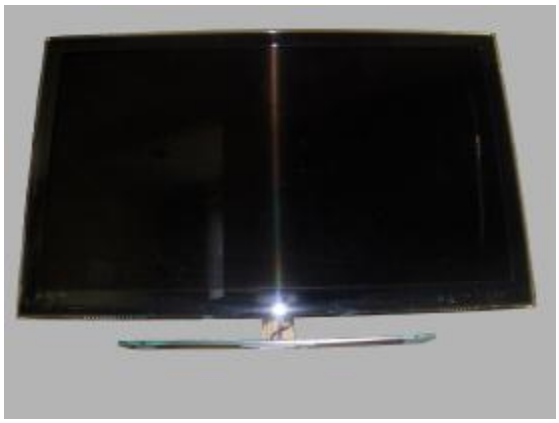
Cronbach's Alpha	N of Items
,873	42

APPENDIX B - *Stimuli*

Strong products

In search for the reversed camera angle effect





Weak products

In search for the reversed camera angle effect