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[HOW CAMERA ANGLES INFLUENCE PEOPLE'S OPINIONS ABOUT OBJECTS]

Abstract

This study investigated if the influence of camera angles on people's opinions of objects could be fit into an embodied cognitive theory. A high or a low camera angle in combination with a negative or positive message was hypothesized to have different effects on the feelings evoked by objects, which were to be measured with the PrEmo, a visual measurement of emotions. No effects of camera angle were found, although both the accompanying message (negative or positive) and the opinion about the general product category of the shown stimuli were found to influence people's opinions as measured by the PrEmo.

How Camera Angles Influence People's Opinions About Objects

Today's world is filled with pictures. Television, print media and the internet are bursting with images to supplement the stories told. Advertisements, too, often rely on pictures for success. Dutch marketplace site Marktplaats.nl alone hosts over two hundred thousand new advertisements every day (Marktplaats.nl, 2010), most of which are accompanied by photographs. But does it matter how an object is photographed? Do the stylistic properties, things like the camera angle at which the photograph is shot, or whether the object is turned left, right or shown face-on, have an influence on what people think and feel about the object shown? There is research showing that stylistic properties do indeed have an effect (e.g., Meyers-Levy & Peracchio, 1992; Larsen, Luna, Peracchio, 2004; Peracchio & Meyers-Levy, 2005), however, this study wants to explore the effect of stylistic properties in a different theoretical framework – Embodiment.

On Camera Angles and Embodiment

One of the ways in which the stylistic properties of a photographed object can vary, and the one on which this study focuses, is the vertical camera angle, i.e., whether the object in a picture is shown from above or from below. With regard to this vertical camera angle, Meyers-Levy & Peracchio (1992) relied on research by several authors (Kraft 1987; Mandell and Shaw 1973; Tiemens 1970) in their assumption that when an object is photographed from a low angle, so it seems that the viewer would seem to be looking up at it, the object was judged more positively (e.g., larger, stronger, bolder) than when the same object was photographed from a high camera angle. When the object appeared to be at eye level, viewer's judgments were in between the two extremes.

When an object considered from a traditional cognitive psychological point of view, in which perceptual and motor systems are seen as input- and output devices serving the central cognitive processes (Wilson, 2002), this does not seem like an odd take on things. After all, the object and how it is shown are processed by the mind as abstract information processor, which only concerns itself with the objective information of the object at hand. However, when looking from an embodied perspective, another possible interpretation of camera angle and corresponding judgment arises. In contrast with the traditional cognitive psychological standpoint, in embodied cognition it is thought that human reasoning, how we make sense of things, cannot work without the body and the brain (or more specifically how it is structured and works). Lakeoff and Johnson (1999) phrase it as: "[..] human reason is [...] a reason inextricably tied to our bodies and the peculiarities of our brain. [...] our bodies, brains and our interactions with our environment provide the mostly unconscious basis for our everyday metaphysics, that is, our sense of what is real." (p. 17) In addition, Wilson (2002), mentions "[...] the mind must be understood in the context of its relationship to a physical body that interacts with the world" (p. 625), and "...human cognition, rather than being centralised, abstract, and sharply distinct from peripheral input and output modules, may instead have deep roots in sensorimotor processing" (p. 625). This perspective, one that tries to understand the relationship between people and their environment and thus the objects in it, through the interactions between the two, opens up the way for another possibility when it comes to judging objects.

Van Rompay (2008) talks about embodied interactions between an individual and their environment that share a similar spatial relational structure (i.e. all interactions involve an individual's bodily orientation in the vertical plane), which is basically what the different camera angles are about – giving a person a different point of view on an object, and in effect

altering their bodily orientation in the vertical plane. In this context, Van Rompay mentions that typically, people find they have control over objects and other people if they are literally higher. On the other hand, people may feel threatened or vulnerable when someone or something rises above them. However, a bit further on in the text, Van Rompay also says that following the logic of the verticality schema, an object that rises higher upward is perceived as more dominant, impressive or proud.

While the high camera angle (looking down on the object) in this embodied perspective doesn't necessarily conflict with the findings in Meyers-Levy & Peracchio's (1992) experiments, according to the embodied perspective, the low camera angle, the 'looking up to something', doesn't have to elicit all positive feelings about the person or object that is being looked up to. As may be surmised from Van Rompay's writings, when looking up to an object, (e.g. pictures taken from a low camera angle) people's feelings about the object could go two ways; the object being thought of as impressive and strong, or the object being thought of as dominating and menacing, thus resulting in feeling threatened or vulnerable.

On Influencing the Mindset of People.

What would make the observer feel either in awe of or dominated by the same object, process the same picture as either benevolent or menacing? It seems that subliminally inducing positive affect (e.g., priming with happy faces) leads to more positive evaluations of stimuli presented subsequently (e.g., faces, products, politicians) (e.g., Clore, 1992). In their experiments, Meyers-Levy & Peracchio (1992) accompanied their object's photographs with small ad-like pieces of text, and used only positive messages in those texts. Stimuli in both their first and second experiment were accompanied by a positive message, designed to resemble an ad message that wants to persuade the reader to buy the product shown. In effect, one could say the participants were positively primed as they viewed the picture of the object.

Could a negative message turn the person looking at the picture around to view the same picture not as impressive and good, but as dominating and menacing?

> H1: Accompanying a picture looking at an object from a low camera angle with a positive message will result in the object being evaluated more positively than when the same picture is accompanied with a negative message.

Neither Meyers-Levy and Peracchio or Van Rompay are very clear on characteristics attributed to an object that is looked down at, from a high camera angle. However, Van Rompay (2008) talks about "the individual's bodily orientation in the vertical plane" (p.26), which can be considered a continuum, and Meyers-Levy and Peracchio (2005) mention "When the object appeared to be at eye level, viewer's judgments were between the two extremes" (p. 454), which implies the characteristics attributed to the objects are also ranged along a continuum. Characteristics attributed to an object when looking down on it, from a high camera angle, could be considered opposites to the characteristics attributed to an object when looking up to it from a low camera angle. (As illustrated in Figure 1.)

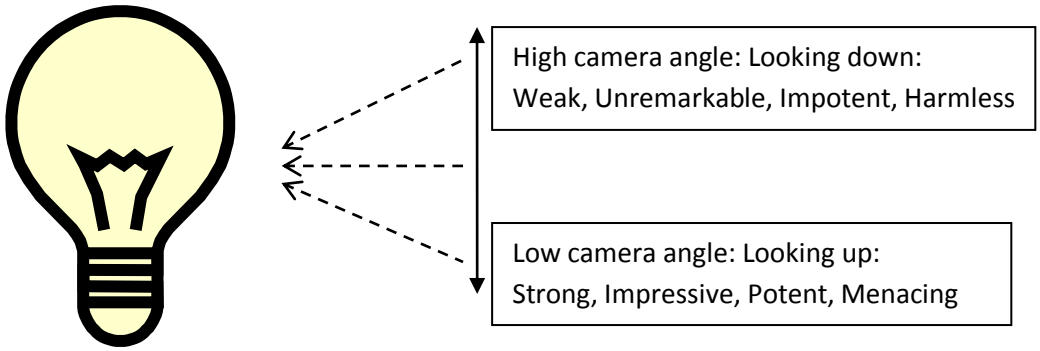

Figure 1 - Illustration of angle and characteristic attribution along a continuum

The high camera angle could also result in different feelings about an object, depending on the state of mind the person judging would be in, although the hypothesis is more tentative

because of the lack of clarity on the characteristics attributed when looking down on an object.

> H2: Accompanying a picture looking at an object from a high camera angle with a positive message will result in the object being evaluated less negatively than when the same picture is accompanied by a negative message

Although the looking up to an object has two very distinct and very opposed suspected outcomes depending on a positive or a negative message, the looking down on an object seems to have merely negative and slightly less negative outcomes. As Meyers-Levy and Peracchio (1992) mentioned, in objects where small size or harmlessness is an asset rather than a liability (for instance toys or 'cute' baby animals), there may be more positive outcomes expected, however for most objects being tiny or helpless elicits a negative feeling. When accompanied by a positive message, the negativity elicited by high camera angle of the picture would be moderated, while a negative message would enhance the negativity of looking down on the same object.

To measure how people will evaluate an object, whether they rate an object positively or negatively, opens up new problems. The proposed way of how an object is attributed characteristics that range along a continuum, according to where on the vertical continuum the viewer is in relation to the object, would suggest the use of semantic differentials in rating. However, in the research by Peracchio & Meyers-Levy (2005), it is feared that with use of specific characteristics on which the participants had to rate objects, the participants' opinion about the objects may be influenced. To refrain from prematurely attributing characteristics to an object that the viewer might not have thought about, and because it is not the characteristics of the object that are of interest, but how positively or negatively people feel

about the object they see, and if this differs depending on the camera angle, the solution to the measurement problem may be found in product emotion.

On Product Emotion.

Product emotion, in short, is a term that refers to the emotions evoked by products. On emotion in general, Frijda (2005), makes several interesting remarks. According to his theory, the experiencing of emotions can have the form of affectively meaningful perception of the world: of an object, an event, or the external world as a whole. One perceives, for example, a threatening object or a lovely person. If attention is focused on the world, there is emotion experience. In addition, Frijda says, the emotion experience is *about* something, not merely *of* something. In self-reports, descriptions of emotion experiences typically consist of descriptions of the meanings of objects or events, and the different emotions participants name correspond to different patterns of meaning. Another thing Frijda says is "Situational meaning structures consist of perceived felt qualities that lead a person to use epithets like 'attractive', 'fantastic', 'repulsive', 'uncanny', 'weird', or 'open', and to identify the event as a threat, a loss, or an invitation, as confusing, oppressive or yielding. All these are the conscious outcomes of appraisal processes that themselves are largely non-conscious. When explicated, the felt qualities appear to represent fused information of several kinds: Mainly the event's or the object's affective valence, the kinds of benefit or harm it may offer or do, and what it allows or prevents one to do to deal with it." (p.477) Considering these points, the emotions evoked by products seem a good measure for the experiment at hand. Product emotion is a topic of increasing interest, owing to the fact that in present-day society the technical differences between products are often negligible, and emphasis on experiential aspects of products become more important. (Postrel, 2004)

Among different ways to measure product emotion, the Product Emotion Measurement instrument (PrEmo) stands out among those instruments that measure emotions evoked by products. This instrument was specifically developed over a number of years to combine the advantages of existing non-verbal and verbal self-report instruments: it measures subtle (i.e. low intensity) emotions, and mixed emotions (i.e. more than one emotion experienced simultaneously) (Desmet, 2003), but does not require the participants to verbalise their emotions. The instrument consists of a set of 12 emotions, each of which is shown by an animated cartoon character by means of dynamic facial, bodily, and vocal expression. The emotions cover both the positive and the negative spectrum, making the tool extremely suited for the experiment at hand.

Embodiment (e.g., Sandidni, Metta & Vernon, 2004), as well as emotion theories (e.g., Frijda, 2005), mention that the past people have with an object can influence people's current opinions (and what emotions they feel) about objects. Considering how past experiences could influence scores on the PrEmo, participants will be asked to rate the general category the objects come from (e.g., televisions). The scores people give to the different product categories will be taken into account.

Recapitulating, the combination of the general scores people will give to product categories and the scores on the product emotion measurement tool PrEmo, is thought to give an excellent lead to either falsifying or verifying the hypotheses. Considering both the research in traditional cognitional vein and the research on embodied cognition, it's hypothesized that accompanying a picture of an object taken from a low camera angle by a positive message will make the object being rated more positively than when the same picture is being accompanied by a negative message. In addition, it is hypothesized that accompanying a picture of an object taken from a high camera angle by a positive message

will make the object being rated less negatively than when the same picture is being accompanied by a negative message.

Methods

Design.

A 2x2 within subjects design will be used, with camera angle (high, low) and message (positive, negative) being the independent variables. Dependant variable will be the scores on the PrEmo. As possible co-variables, the general product opinion scores, general mood measurement scores and various demographic data will be gathered.

Participants.

Exactly 100 people participated in the experiment. Unfortunately, 14 datasets were incomplete and had to be excluded from analysis, bringing the total number of usable datasets to 86. Of these, 18 were male and 68 were female. The average age was 22.5 (SD= 6.1). 61 of the 86 participants were students drafted through the university's participant pool, and received course credits for participating. The remaining 25 participants were drafted through email and messages on various social networks.

Materials.

Photographs of 2 different objects, (a frying pan and a mini stereo set, see Appendix B), each from 2 different camera angles (high, low) are used. High and low camera angles differ by 18 degrees from the eye level position. This angle makes for a strong camera angle (Kepplinger, 1987) and is chosen to be sure that the effect of camera angles is clearly visible. A more extreme angle of 40 degrees as Meyers-Levy and Peracchio (1992) used was

originally tried, but made the medium sized stimulus objects look exceedingly out of place. Each photograph has the original background removed and replaced by a neutral gray background. The texts accompanying the photographs were adapted from texts that may be found on a consumer review website or magazine, although they were specifically made either very negative or very positive. (See Appendix A)

The PrEmo or Product Emotion Measurement instrument (Desmet, 2003; SusaGroup, 2007) was used in this experiment. The instrument consists of a set of 12 emotions, each of which is shown by an animated cartoon character by means of dynamic facial, bodily, and vocal expression. After first seeing the stimulus, in this experiment a photograph of an object with accompanying text (See Appendix C), participants have to rate for each of the 12 emotions shown in how far they feel that emotion was elicited by the stimulus, on a scale of 0-4. Usage of the PrEmo was graciously permitted by the SusaGroup.

Procedure.

Participants entered the experiment through a web link or URL. First, they encountered a screen welcoming them to the experiment and saying the experiment is about how online review influence people's opinions about objects. Next, they ran through a list of general product categories, accompanied by photographs taken from an eye level camera angle, which they had to rate on how they liked them in general. This was done by awarding each product category a mark between 1 and 10. Next, they had to enter some demographical information. After that, they completed a general mood assessment, asking them to rate their current mood on a scale of 1 to 10. Subsequently, they got information on how to use the PrEmo and ran through an example of how to use the PrEmo. After that, they used the PrEmo to rate 2 objects, each accompanied by a review of the product. Each object was randomly shown from a high or low camera angle, and randomly accompanied by a positive or negative review. To

conclude the experiment, the participants were heartily thanked for participating in the experiment and making their contribution to science.

Results

A multivariate analysis of co-variance (MANCOVA) of the data showed no evidence to support any kind of effect of camera angle on the PrEmo scores (see Table 1). Both hypotheses were falsified on account of these results, as both assumed an effect of the different camera angles. There was, however, an effect of the review and the co-variable general product opinion.

When having a closer look at the analysis of the effects for the review and the general product opinion (See Table 2), it appears the review has a significant effect on the PrEmo scores for positive emotions, with significances between .000 and .003, all with observed powers between .857 and .998. Exception is Fascination, which has a significance of .017, but an observed power of .668. In addition, the general product opinion also has a significant effect on Boredom in the negative scale of PrEmo scores, with a significance of .003 and an observed power of .856.

The review also seems to have a significant effect on the majority of the positive emotions, with significances between .000 and .001, with observed powers between .928 and 1.000. Exceptions here are the emotions Hope and Fascination, with significances of .043 and .023 and observed powers of .528 and .623, respectively. Contrary to the product opinion however, the review also seems to have an effect on the negative emotions, most notable on Disgust, Dissatisfaction and Fear, all with significance of .000, and observed powers of .999, 1.000

and .994 respectively. Shame, Sadness and Boredom seem to be exceptions, with significances of .203, .089 and .101, and observed powers of .246, .398 and .374, respectively.

Discussion

The lack of any sort of effect of the camera angle is slightly puzzling. Some effect of the different camera angles, regardless of the effect would be in line with the hypotheses of this study, had been expected, based on the results of the Meyers-Levy & Peracchio's (1992) and Peracchio & Meyers-Levy (2005). One possibility of this lack of effects might be that in this study's set up, the picture may have appeared as secondary to the accompanying review. Possibly, the set up emphasised the importance of the review over the picture, therefore the review was processed more thoroughly and having the actual effect upon the scores. In fact, even in the introduction of this study there was a referral to Clore (1992), which said that the induced affect effected opinions. Apparently this effect was stronger than expected during this study.

Except Hope and Fascination, which have insufficient observed power to be taken into account, the Review has an effect on all the positive emotions. For the negative emotions, Review has an effect on Disgust, Dissatisfaction and Fear, while Shame, Sadness and Boredom have all have observed power lower than .398. It can be assumed that the reviews did indeed induce affect, and this was transferred onto the PrEmo scores.

The general product opinion having an effect on PrEmo scores was expected from an embodied standpoint, as explained in the introduction. The past someone has with an object would influence their opinion of the object. In the results, this is in fact reflected in the effect of the general product opinion on the positive emotion PrEmo scores. With the notable

exception of Boredom, none of the negative emotions have sufficient observed power to be taken into account. The significant effect of the product opinion on boredom might be connected with people's familiarity with an object. If they give it a high general score, they are probably very familiar with it. Although the positive spectrum of emotions would still be triggered by a positive general opinion, the familiarity with the object might also incur a higher Boredom score. All things considered, the effect of the general product opinion scores on the scores of the PrEmo does seem to argue in favour of embodiment.

If future studies would wish to explore the effect of camera angles from an embodied standpoint, it would be advisable to make the picture of the object the primary item in the stimulus, and the accompanying message or text very short or circumstantial. A few words in ad-like fashion, as Meyers-Levy & Peracchio (1992) did, or possibly a picture with a subscript like a newspaper photograph might work. Considering the effect of the general product opinion scores on the PrEmo, it is still quite possible the camera angles would indeed have an embodied way of being interpreted, provided the picture of the object were the primary processed object.

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Appendix A – Reviews

Positive reviews

Review Fryingpan F001a

Gebruiksgemak: 3
Mogelijkheden: 2
Vormgeving: 1

Hoewel deze friteuse er op het oog aardig uit ziet, is het erg onhandig apparaat. Zowel zijkanten en deksel worden erg heet, en binnen twee keer gebruiken had hete lucht die langs de deksel ontsnapte de tempratuur indeling bij de draaiknop weggesmolten. Ook schoonmaken is lastig, het hele apparaat moet scheefgehouden worden en vet loopt dan alsnog langs de zijkanten.

Review Stereo S002b

Gebruiksgemak: 8
Mogelijkheden: 9
Vormgeving: 9

Mooi klein strak torentje met zowel radio, cd en dubbel cassettedek, waar vind je dat nog! Radio ontvangst is uitstekend, helemaal geen last van ruis. Er zijn uitgebreide equalizer instellingen die makkelijk in te stellen zijn, naast een aantal netjes voorgeprogrammeerde instellingen. Ook handige timer- en sleepfuncties.

Negative reviews

Review Fryingpan F001a

Gebruiksgemak: 9
Mogelijkheden: 8
Vormgeving: 9

Mooie no-nonsense roestvrijstalen friteuse. Temperatuur instellen is simpel met de draaiknop, en het vet is erg snel op de goede temperatuur. Door de koude zones worden de zijkanten nooit heet, dus je kunt je niet branden. Handige uitneembare binnenbak maakt schoonmaken erg makkelijk.

Review Fryingpan F001a

Gebruiksgemak: 3
Mogelijkheden: 1
Vormgeving:2

Voor een mini-toren een vrij groot apparaat, met aanzienlijke boxen. Indeling van de knoppen is onhandig, de voorgeprogrameerde equalizer instellingen laten te wensen over en het is niet mogelijk de equalizer handmatig in te stellen. Instellen van de klok is mogelijk, maar het ontbreekt aan ontwaak- of slaapfuncties waardoor de klok nogal overbodig wordt.

Appendix B – Stimulus photographs

Photograph 1 - Stereo Set from High Camera Angle

Photograph 2 - Stereo Set from Low Camera Angle

Photograph 3 - Frying Pan from High Camera Angle

Photograph 4 - Frying Pan from Low Camera Angle

Appendix C – Example Stimulus

Het Effect van Online Reviews

Review Friteuse F001a

- Gebruiksgemak: **3**
- Mogelijkheden: **2**
- Vormgeving: **1**

Hoewel deze friteuse er op het oog aardig uit ziet, is het erg onhandig apparaat. Zowel zijkanten en deksel worden erg heet, en binnen twee keer gebruiken had hete lucht die langs de deksel ontsnapte de tempratuur indeling bij de draaiknop weggesmolten. Ook schoonmaken is lastig, het hele apparaat moet scheefgehouden worden en vet loopt dan alsnog langs de zijkanten.

Volgende >>

Appendix D – PrEmo example

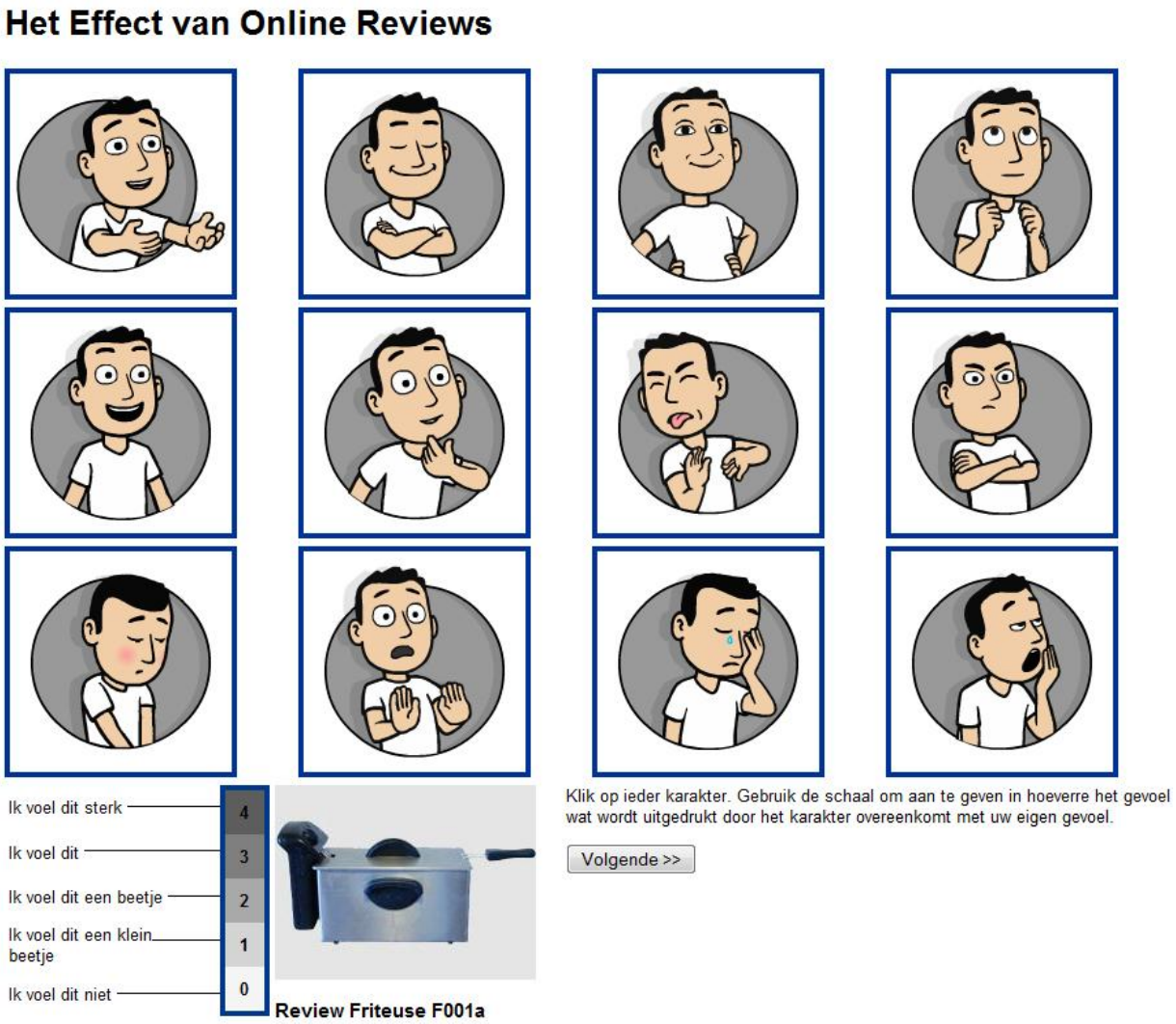

Table 1

Results of Multivariate Analysis: Effects of Product score, Mood, Camera Angle and Review on PrEmo.

Effect		Value	F	Significance	Observed Power[b]
Productscore	Pillai's Trace	,155	2,366[a]	,008	,956
	Wilks' Lambda	,845	2,366[a]	,008	,956
	Hotelling's Trace	,183	2,366[a]	,008	,956
	Roy's Largest Root	,183	2,366[a]	,008	,956
Mood	Pillai's Trace	,058	,794[a]	,656	,450
	Wilks' Lambda	,942	,794[a]	,656	,450
	Hotelling's Trace	,061	,794[a]	,656	,450
	Roy's Largest Root	,061	,794[a]	,656	,450
Camera Angle	Pillai's Trace	,036	,479[a]	,925	,265
	Wilks' Lambda	,964	,479[a]	,925	,265
	Hotelling's Trace	,037	,479[a]	,925	,265
	Roy's Largest Root	,037	,479[a]	,925	,265
Review	Pillai's Trace	,303	5,617[a]	,000	1,000
	Wilks' Lambda	,697	5,617[a]	,000	1,000
	Hotelling's Trace	,435	5,617[a]	,000	1,000
	Roy's Largest Root	,435	5,617[a]	,000	1,000

a. Exact statistic

b. Computed using alpha = ,05

Table 2

Test results for Product Opinion and Review Variables

Source	Dependent Variable	F	Sig.	Observed Power[b]
Productscore	Desire	23,730	,000	,998
	Satisfaction	9,261	,003	,857
	Pride	11,419	,001	,919
	Hope	12,728	,000	,944
	Joy	14,475	,000	,966
	Fascination	5,804	,017	,668
	Disgust	2,868	,092	,391
	Dissatisfaction	3,946	,049	,506
	Shame	,224	,636	,076
	Fear	,034	,853	,054
	Sadness	,066	,797	,058
	Boredom	9,239	,003	,856
Review	Desire	27,646	,000	,999
	Satisfaction	21,480	,000	,996
	Pride	11,825	,001	,928
	Hope	4,164	,043	,528
	Joy	28,315	,000	1,000
	Fascination	5,230	,023	,623
	Disgust	27,491	,000	,999
	Dissatisfaction	50,660	,000	1,000
	Shame	1,636	,203	,246
	Fear	20,447	,000	,994
	Sadness	2,926	,089	,398
	Boredom	2,715	,101	,374

b. Computed using alpha = ,05