Personal marketing appeals: How personality dimensions influence feelings toward emotional images

by
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Abstract. The aim of this study is to explore how the five-factor model of personality (openness, conscientiousness, extraversion, agreeableness and neuroticism) influences emotional responses to visual stimuli. An experimental design was used where 148 students completed a personality test and reported their emotional response to fourteen visual images. The key-findings are (1) high degree of extraversion influences pleasant affect (i.e. happiness), (2) high degree of neuroticism influences unpleasant affect (i.e. fear and disgust), (3) low degree of openness, extraversion and/or neuroticism influences the absence of emotions (i.e. neutral response). Our results demonstrate that consumers’ immediate perceptions of visual images as stimuli at least partly depend on their personality dimensions, which are shaped by nature and nurture.

Key words: Affect, Appraisal, Emotion, Marketing and Advertising, Personality
JEL classification: M31

1 Introduction

Much publication in consumer behavior and information processing has focused on verbal, rather than visual, information as a source for input (Wyer et al., 2008). Several models (such as the traditional decision model and the multiattribute model) emphasize this predominance of understanding the consumers’ information process verbally, rather than visually (Hobrook & More, 1981). In all fairness, this approach seems to be more appropriate to use when expected benefits of a purchase are primarily utilitarian, but less appropriate where decisions mainly depend on hedonic attributes, such as: aesthetics, taste, symbolic meaning, sensory experience, or other high subjective phenomena (Holbrook & More, 1981). The hedonic approach thus recognizes the importance of variables that have been neglected in the traditional and utilitarian approach, such as the roles of emotions, the fact that consumers are “feelers” as well as “thinkers and doers”, the significance of symbolism and the need for fun and pleasure (Carù & Cova, 2003). This move, in turn, would then imply an increased importance in generating knowledge about visual cues in consumers information processing.

The concept psychological appraisal is related to the discussion of verbal and visual information processing. In general, verbal messages are used by marketers for designing rational appeals that should influence consumers through cognitive appraisal while visual images are used to design emotional appeals that should influence consumers through affective appraisal. Cognitive appraisal refers to propositional evaluations (i.e. explicit or evaluative judgment based on syllogistic inferences) while affective appraisal refers to associative evaluations (i.e. implicit or automatic affective responses). (Ruckler et al., 2014). Despite that most theoretical models in economics and marketing are based on verbal processing and cognitive appraisal, the marketing practice increasingly relies on visual images as emotional appeals in order to persuade consumers (Aaker & Bruzzone, 1981; Lau-Gesk & Meyers-Levy, 2009; Berg, Söderlund & Lindström, 2014). Affects and emotions are highly subjective in nature, and thus vary between different consumers. These different emotions results in a landscape where we need to gain knowledge of the consumers as “feelers”. Researchers thus need to devote more attention to understand consumers’ affective appraisal and how they respond differently toward the one and same visual stimuli (Lau-Gesk & Meyers-Levy, 2009).
The aim of this study is to shed light on how personality dimensions influence emotional responses to visual images. So far, researchers have discovered that consumers with a high degree of affect intensity consistently react on emotional appeals in ads more than other consumers (Moore, Harris & Chen, 1995; Söderlund, 2003). We find it essential to learn more about how affect intensity is related to general and robust psychological personality dimensions (e.g. openness, conscientiousness, extraversion, agreeableness, neuroticism).

2 Theoretical Background

We use appraisal theories to establish our predictions about the effect of personality dimensions on the likelihood of a certain emotional response, because appraisal theories offer a well-established theoretical framework in the marketing field for understanding affects and emotions (Bagozzi, Gopinath & Nyer, 1999; Ruckler et al., 2014). Appraisal theories have been used to study emotional responses to visual stimuli, for instance in advertising and emotional design (Bagozzi, Gopinath & Nyer, 1999; Desmet, 2008). In this article, we refer to appraisal as a fast and immediate response rather than a slow process of cognitive elaborations. In our theorizing we use (1) visual images as stimuli, (2) personality dimensions as independent variable, (3) affective appraisal and (4) emotional and affective response as dependent variable (figure 1).

2.1 Appraisal of stimuli

An appraisal is an evaluation of stimuli´s in relation to the consumers´ personal well-being (Bagozzi & Moore, 1994). When stimuli are appraised as having significance for the subjective well-being, they become perceived in emotion-laden terms. This imply that an emotional response only occur toward a stimulus if the stimulus is relevant for the subjective well-being (Bagozzi & Moore, 1994; Bagozzi, Gopinath & Nyer, 1999; Demir, Desmet & Hekkert, 2009). Appraisal processes might be automatic and nonverbal although they deal with the significant question "What does this stimuli mean for my subjective well-being?" (Demir, Desmet & Hekkert, 2009). As previously discussed, researchers usually distinguish between affective appraisal and cognitive appraisal. Affective appraisal refers to more automatic and implicit processes while cognitive appraisal refers to more deliberative and explicit processes (Ruckler et al., 2014). However, affective appraisal needs to be related to cognitive appraisal, because a consumer would like to keep his or her immediate feelings in line with preferred long-term goals (Trudel & Murray, 2012).

Cognitive appraisal processes are much studied in marketing, while researchers have paid less attention to affective appraisal (Ruckler et al., 2014). It seems as the feelings-as-information theory, which propose that a spontaneous feeling, “How do I feel about this”, is essential in affective appraisal of stimuli (Schwarz & Clore, 1983; Kim, Park & Schwarz, 2009). Immediate appraisal processes have been discussed in terms of mood-maintaining and mood-repairing (Isen & Means, 1983; Tice, Baratsiavsky & Baumeister, 2001). Mood-maintaining occur when consumers feel good and want to maintain their momentary happiness, while mood-repairing happen when people feel unpleasant affect and indulge in order to repair the momentary mood rather than exert restraint to accomplish long-term goals (Isen & Means, 1983; Tice, Baratsiavsky & Baumeister, 2001; Shen & Wyer, 2008).

Appraisal processes of visual stimuli have been discussed regarding consumers ability to mentally transport themselves into the situation described by the sender (Escalas, 2004; Wyer, Hung & Jiang, 2008). Consumers are more able to transport themselves to familiar situations and identify with persons that are similar to themselves. This fact seems to work whether the similarity is related to opinions, personality, background or lifestyle.
(Cialdini, 2001). In advertising, similarity is often used to evoke empathy for the person shown in the ad and getting the consumers to think “I see myself in that situation” (Belch & Belch, 1998).

Finally, the appraisal process (i.e. the significance of what is happening for our personal well-being) is related to the cognitive resources consumers need to invest for understanding what is happening for their personal well-being. The appraisal process of mixed, complex and self-conscious emotions demand more cognitive resources than univalenced, basic and non-self-conscious emotions (Lau-Gesk & Meyers-Levy, 2009). When individuals do not have the ability (or motivation) to engage in the appraisal process, they can be said to have a neutral appraisal (Ruckler et al., 2014).

2.2 Five factor model of personality

Distinctions among individuals receive considerable support from an increasingly extensive psychological literature on personality. Personality is the particular combination of feelings (i.e. emotions, affects), thoughts (i.e. cognitions) and behavior. The framework that has received the most attention and support from personality researchers has been the five-factor model. According to the five-factor model, human personalities can be divided in five broad categories of personality dimensions (Larsen & Buss, 2005):

1. Openness (versus reticence). Open people are open for innovations, different cultures, new information and emotions of other people. Reticent people are more conservative and reserved to innovations, cultures, information and emotions.

2. Conscientiousness (versus spontaneity). Conscientious people are forward thinking and plan their lives. Spontaneous people are more impulsive and act on the spur of the moment.

3. Extraversion (versus introversion). Extravert people have a great impact on their social environment and tend to be happy. Introvert people are more quite and tend to be more like wallflowers.

4. Agreeableness (versus antagonistic). Agreeable people negotiate to resolve conflicts and strive for an agreement. Antagonistic people are aggressive, assert their power to resolve social conflicts and seem to get themselves into a lot of social conflicts.

5. Neuroticism (versus emotional stability). Neurotic people have a variability of moods over time, are anxious, stressed and disconnected from life and other people. Emotional stable people are more composed, relaxed and tend to be like boats that remain on course through choppy waters.

2.3 Basic emotions

The emotional responses in the present study are based on six basic emotions: anger, fear, disgust, sadness, surprise and happiness (Ekman & Friesen, 2003). The basic emotions are universally recognized and universally expressed through facial expressions. The basic emotions are pure and not amenable to deconstructions. Despite evidence that basic emotions seem to be universal (Ekman & Friesen, 2003), emotional response toward a specific object may differ among persons. Losing a loved one might be expressed in a number of ways: by openly crying and wailing, by anger and irritation, by silence and isolation or by singing and dancing (Atkinson et al., 2000). We have a good reason to believe that emotional responses also differ toward less dramatic stimuli, such as visual images. In the introduction, we discussed how consumers’ appraisal can be related to several psychological factors, such as moods, imagination, empathy, cognitive capacity and motivation. All such factors are highly individually and might therefore vary between consumers.

3 Method

This study was based on an experiment conducted with student samples. One hundred forty-eight undergraduate students from the University of Gothenburg in Sweden participated in the study. First, participants completed a personality test (Gustavsson, Jönsson, Linder & Weinryb, 2003). Next, participant observed 14 visual images on a large screen that lasted for 12 seconds each. Participants were told to report the emotion in the moment of experience. After each image, a white screen was showed in order to neutralize the spill-over between images.

The 14 stimuli images were derived from the Geneva Affective Picture Database (GAPED). This database consists of 730 visual images that have been tested for measuring pleasant affect (e.g. babies and nature), unpleasant affect (e.g. disrespect of social standards and scary animals) and neutrality (e.g. inanimate objects) (Dan-Glauser and Scherer, 2011).

In an ongoing project, 480 images in GAPED have been tested for identifying a more precise emotion than pleasant-, unpleasant- and neutral affect. For
this ongoing project 48 participants were recruited. Each unpleasant image was evaluated by 15 participants while each neutral and pleasant image was evaluated by 24 people. Participants were asked to look at the visual image and to report when they felt an emotion. Once felt, the emotion had to be defined by the participant in an open question (E. Dan-Glauser, personal communication, October – December, 2012). In the present study, each basic emotion (sadness, anger, fear, disgust, positive surprise and happiness) was represented by the 2 images that scored highest on that specific emotion. Neutral emotion was represented by two images from the neutral category in GAPED that nobody in the test felt any emotion toward.

The emotional responses were measured through a combined verbal and visual self-report measure. The visual self-report measure is based on photographs of universal facial expressions of basic emotions (Ekman & Friesen, 2003) and constructed together with designers at Veryday in Sweden (figure 2).

![Figure 2. Emotions used in the self-report measure.](image)

Logistic regression analyses were performed with a subjective emotional response (e.g. happiness) or a certain affect (e.g. pleasant affect) as the dependent variable and the five personality dimensions as independent variables. A total of 1916 visual images were analyzed, based on responses from 148 individuals.

4 Findings

We have found that personality dimensions influence emotional response in terms of pleasant affect (i.e. happiness and positive surprise), unpleasant affect (i.e. sadness, anger, fear and disgust) and absence of affect (i.e. neutral). The study shows that pleasant affect to visual images can be explained through the degree of extraversion. An increase in one unit of extraversion is associated with an increase in the odds of a positive emotion (i.e. happiness or positive surprise) by a factor of 1.31 [log odds 0.27]. Extraversion is especially associated with the positive emotion happiness. An increase in one unit of extraversion is associated with an increase in the odds of happiness by a factor of 1.38 [log odds 0.32]. We found that low degree of extraversion result in absence of emotions: A decrease of one unit of extraversion (i.e. increase in introversion) is associated with an increase in the odds of a neutral response by a factor of 0.64 [log odds -0.45].

Table 1 illustrates that absence of affect to visual images can be explained through low degree of openness. A decrease of one unit of the reversal scale of openness (i.e. increase in reticence) is associated with an increase in the odds of a neutral response by a factor of 1.28 [log odds 0.25]. Further, we found that low degree of neuroticism result in absence of emotions. An increase of one unit of neuroticism is associated with a decrease in the odds of a neutral response by a factor of 0.69 [log odds -0.37].

<table>
<thead>
<tr>
<th>Personality Dimension</th>
<th>Positive surprise</th>
<th>Happiness</th>
<th>Pleasant affect</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness (r)</td>
<td>0.56</td>
<td>-0.18</td>
<td>-0.08</td>
<td>0.25*</td>
</tr>
<tr>
<td>Conscientiousness (r)</td>
<td>0.07</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.10</td>
</tr>
<tr>
<td>Extraversion</td>
<td>0.07</td>
<td>0.32**</td>
<td>0.27*</td>
<td>-0.45**</td>
</tr>
<tr>
<td>Agreeableness (r)</td>
<td>0.91</td>
<td>0.01</td>
<td>0.05</td>
<td>-0.12</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>0.01</td>
<td>-0.13</td>
<td>-0.09</td>
<td>-0.37**</td>
</tr>
<tr>
<td>Intercept</td>
<td>-3.43**</td>
<td>-2.00*</td>
<td>-1.77**</td>
<td>0.65</td>
</tr>
<tr>
<td>Nagelkerke R²</td>
<td>0.00</td>
<td>0.01</td>
<td>0.01</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Note. Binominal logistic regression. Log odds. *p<.05. **p<.01. r = reversal. n = 1916 visual images.

Pleasant affect = Positive surprise + Happiness.

Unpleasant affect = sadness + anger + fear + disgust.

Table 2 illustrates that unpleasant affect to visual images can be explained through the degree of neuroticism. An increase in one unit of neuroticism is associated with an increase in the odds of an unpleasant emotion (i.e. sadness, anger, fear or disgust) to a random image by a factor of 1.52 [log odds 0.42]. Neuroticism is especially associated with the negative emotions fear and disgust (table 2). An increase in one unit of neuroticism is associated with an increase in the odds of fear by a factor of 1.87 [log odds 0.63] and an increase of the odds of disgust by a factor of 1.56 [log odds 0.44].
Table 2. Personality dimensions related to negative emotions and unpleasant affect.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Sadness</th>
<th>Anger</th>
<th>Fear</th>
<th>Disgust</th>
<th>Unpleasant affect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness(r)</td>
<td>-0.15</td>
<td>-0.13</td>
<td>-0.29</td>
<td>0.05</td>
<td>-0.16</td>
</tr>
<tr>
<td>Conscientiousness(r)</td>
<td>0.12</td>
<td>-0.32</td>
<td>-0.05</td>
<td>-0.23</td>
<td>-0.12</td>
</tr>
<tr>
<td>Extraversion</td>
<td>0.18</td>
<td>0.01</td>
<td>0.02</td>
<td>0.05</td>
<td>0.20</td>
</tr>
<tr>
<td>Agreeableness(r)</td>
<td>-0.02</td>
<td>-0.03</td>
<td>-0.31</td>
<td>0.07</td>
<td>-0.12</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>-0.02</td>
<td>0.23</td>
<td>0.65</td>
<td>0.44</td>
<td>0.41</td>
</tr>
<tr>
<td>Intercept</td>
<td>-2.22**</td>
<td>-2.22</td>
<td>-3.85</td>
<td>-2.46</td>
<td>-1.05</td>
</tr>
<tr>
<td>Nagelkerke R²</td>
<td>0.00</td>
<td>0.01</td>
<td>0.03</td>
<td>0.01</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note. Binominal logistic regression. Log odds. *p<.05. **p<.01. r = reversal. n = 1916 visual images.

Pleasant affect = Positive surprise + Happiness.
Unpleasant affect = sadness + anger + fear + disgust.

Table 1 and 2 illustrate that neither degree of agreeableness nor conscientiousness influence emotional immediate responses to visual images.

5 Discussion

We set out to better understand the variation in affect intensity among consumers through the five factor model of personality. We found that affect intensity toward visual images can be explained through underlying personality dimensions. Consumers with a high degree of affect intensity have a high degree of extraversion and neuroticism, while consumers with a low degree of affect intensity have a low degree of openness, extraversion and neuroticism. Further, it is necessary to distinguish between pleasant affect intensity and unpleasant affect intensity. Regarding visual stimuli, consumers with high degree of extraversion experience more pleasant affect (i.e. happiness) but not more unpleasant affect, while consumers with high degree of neuroticism experience more unpleasant affect (i.e. fear and disgust) but not more pleasant affect.

5.1 Theoretical implication

Our findings, that increase in extraversion increase likelihood for happiness and that increase in neuroticism increase likelihood for fear and disgust, are consistent with the feeling-as-information theory (Schwarz & Clore, 1983; Kim, Park & Schwarz, 2009). Our results are in line with mood-maintaining theories and suggest that consumers decode visual stimuli in relation to how they feel (Isen & Means, 1983). From our theoretical discussion, this might be explained through identification and recognition which facilitate mental transformation and thereby demand less cognitive resources (see for instance Belch & Belch, 1998; Cialdini, 2001; Escalas, 2004; Wyer, Hung & Jiang, 2008; Lau-Gesk & Meyers-Levy, 2009; Ruckler et al., 2014).

This study focuses on attention, which is the first step that occurs when a consumer is influenced by visual stimuli. The exposure of visual stimuli (e.g., an ad) should not only attract attention, it should also motivate additional processing to maintain long-term goals related to the consumer’s identity with respect to self-esteem, moral values and self and others well-being (Bagozzi & Moore, 1994). Sometimes, affective appraisal is perceived as cognitive appraisal, because a consumer is assumed to keep his or her self in line with preferred long-term goals (Trudel & Murray, 2012). However, the present study can help us understand why the self sometimes [for some individuals] is in discrepancy with long-term goals, such as in compulsive buying and problem gambling. According to Bagozzi, Gopinath and Nyer (1999), appraisal theories have traditionally dominated the theoretical framework for understanding emotions in marketing. The appraisal they refer to is primary cognitive in nature. If we try to understand emotions through cognitive appraisal there is a risk that we rationalize emotions too much and neglect the pure role of emotions and consumers as “feelers”. The present study highlights the subjectivity in emotions through introducing the five-factor model of personality in appraisal theories. Already in 2001, Lewin stated that it is necessary to take a closer look at individual differences in order to better understand the development of appraisal. To the best of our knowledge, this is the first time the five-factor model of personality is studied in relation to appraisal.

5.2 Consistency with neuroscience

Canli et. al (2001) have used brain imaging techniques (i.e. fMRI) to study the relation between the five-factor model of personality and automatic and implicit responses to visual images. Despite different methods, our key-findings are the same. Firstly, both studies found that extraversion and neuroticism are the relevant personality dimensions that influence emotional responses evoked by visual images. Secondly, both studies found that extraversion influences pleasant emotional responses but not unpleasant emotional responses, while degree of neuroticism influences unpleasant emotional responses but not pleasant emotional responses.
Canli et al. (2001) only measured responses in terms of pleasant and unpleasant affect. However, several researchers (e.g. Russel, 1980; Desmet, 2008) have found that the level of arousal differ among emotions. Regarding unpleasant affect, fear has the highest level of arousal while sadness has the lowest level of arousal (Russel, 1980; Desmet, 2008). In contrast to Canli et al. (2001), the present study measured basic emotions independently. The findings indicate that high degree of neuroticism especially influences the emotional response of unpleasant affect with high arousal (i.e. fear and disgust) rather than unpleasant affect with low arousal (i.e. sadness). This is consistent with findings by Fox (2012), who primary measured unpleasant affect through fear: “People with a short form of serotonin transporter gene have an emergency brain that reacts much more vigorously to danger, which is why they are more vulnerable when things go wrong” (Fox, 2012, p. 111).

Our findings are also consistent with a study by Fox, Ridgewell and Ashwin (2009), which shows that people differ in terms of biased attention for emotional images. People that score high on extraversion (i.e. sociability and well-being) are more frequently paying attention to pleased images, while people that score high on neuroticism more frequently pay attention to unpleasant images. Fox, Ridgewell and Ashwin (2009) explain the differences through neurobiological mechanisms, so-called serotonin transporter genes. People with short serotonin transporter genes are automatically drawn toward unpleasant images, while people with long serotonin transporter genes automatically are drawn to pleasant images. However, in contrast to Fox, Ridgewell and Ashwin (2009), we did not find support for that people with high degree on neuroticism are biased to selectively avoid positive images and that people with low degree of extraversion are biased to selectively avoid negative images.

In contrast to Fox, Ridgewell and Ashwin (2009) and Canli et al. (2001), the present study measured personality dimensions in relation to neutral response of visual images. The findings show that low degree of neuroticism, extraversion and openness influence the absence of emotional response.

5.3 Practical implication

We believe that our findings can be useful for marketers and applied in their real work contexts. The study shows that consumers with high degree of pleasant affect intensity (i.e. extroverts) are more recipient for happy emotional appeals, while consumers with high degree of unpleasant affect intensity are more recipient for fear- and disgust appeals. Such insights can for instance be used for selecting fear- and disgust appeals in anti-drug campaigns and happy appeal in charity promotion. Why? Because previous research has showed that neuroticism is overrepresented among drug and substance users (Gunnarsson et al., 2008) while extraversion is overrepresented among charity givers (Anik et al, 2009).

Also information about low (or no) affect intensity is relevant for advertisers, in order to select an appropriate appeal. If the advertisers know that the target group mainly consists of consumers with low degree of extraversion, neuroticism and/or openness, they might benefit from using verbal messages rather than visual images.

Further our findings have political implications in terms of justice, citizen protection and equality. Both personality dimensions and basic emotions are at least partly viewed as innate properties. Evolution has endowed humans with the innate preparedness to react to specific stimuli. Though using personality dimensions, evolution can not only help us predicting the types of universal stimuli that are likely to trigger certain kind of emotional responses, but it also elucidates individuals differential ability to process emotion-inducing stimuli in terms of fear-, disgust- and happiness appeals.

5.4 Limitations and further research

We would like to discuss some limitations with the present study. Firstly, the study is based on general visual images instead of using real marketing specific stimuli, such as advertising appeals or design aesthetics. Secondly, the study was conducted in an unnatural context; a class room where the students were “forced” to look at and think about the visual images. Thirdly, the study only focused on basic and univalenced emotions (compared to complex and mixed emotions). Fourthly, the study only focused on measuring emotions in the moment (compared to reflections and memory).
We suggest more research on personality dimensions related to appeals with mixed and complex emotions, and related to appeals with enduring and long lasting effects. Interesting directions for future research is to find out what personality dimensions that influence affective and cognitive processes beyond attention. Future research might for instance explore the relation between personality dimensions and mood-repairing in cognitive appraisal and how different people use coping strategies.

In this study we have used a self-report verbal and visual measure. For understanding emotional responses evoked by advertising, several advertising researchers propose brain imaging techniques, such as fMRI (Poels & Dewitte, 2006). The present study indicates that advertisers can rely on self-reported measure (as used in this study), since the result seems to be the same as from brain imaging techniques (as used by Canli et al., 2001).

Acknowledgment

The author is greatly indebted to Riksbankens Jubileumsfond in Stockholm for providing funding. The author would like to thank Elise S. Dan-Glauser at Stanford University for support during the selection process of the 14 stimuli images from GAPED (Geneva affective picture database). The author would like to thank Andreas Enebrand and Lina Nilsson at Veryday for graphic design. The author would also like to thank colleges at Veryday (especially Fredrik Eriksson, Thomas Nilsson, Ellen Wheatley and Andrew Whitcomb) and at the University of Gothenburg (especially Ulrika Holmberg and Peter Zackariasson) for fruitful discussions and scientific support.

References


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