

Preliminary Master Thesis Report

The Ups and Downs of Consumer Behavior: The Effect of Emotions on Vertical Attention

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Abstract

Emotion and rationality are abstract concepts dependent on each other. In this study we aim to see how emotional stimuli (happy and sad) can impact the vertical attention as a precedent of the products choice. The investigation consists of two studies based on a similar general procedure, but using different manipulation techniques. Participants in Study 1a will be emotionally manipulated by movie clips associated to each group (happy, sad, neutral), and tested for their attention on a vertical spatial axis, introducing some fictitious brands above and below a neutral written text. Study 1b will be a conceptual replication of Study 1a and is supposed to increase the probability that the mechanisms introduced in the theory part are true. The manipulation technique will be changed to a combination of autobiographical recall and music, also associated to each group (happy, sad, neutral). We expect that happy emotional state will lead the participant's attention to the upper space, which will cause an easier recall of the brands placed above, while sad emotional state will lead the participant's attention to the lower space, which will cause an easier recall of the brands placed below.

Introduction

The association between emotionally valenced concepts and verticality are widely present in different life aspects. For instance, we say “I feel down” when we are sad and “Cheer up” in order to make a person feel more positive. People tend to jump, when they are happy and sit down, when they hear bad news. A man would carry his head up and look up-forward if he had a good day, but would be looking down and lowering his shoulders if he made a failure. In the end, when we smile, our corners of lips go up, and when we are sad they go down.

Previous research on this matter has demonstrated the existence of an associative link between emotionally valenced concepts and vertical position. The association was tested by evaluating the directionality and automaticity for the processing of the spatial-valence metaphoric association (Huang, Y, 2015; Lynott, D., 2014), measuring the time required for the valence evaluation (Meier, B. P., & Robinson, M. D., 2004; Huang et al., 2015), involving audio- (Montoro et al., 2015), semantic (Dudschig et al., 2015) or visual stimuli (Sasaki et al., 2016). Also the gaze length was measured as a direct contribution to preference and further decision making (Shimojo et al., 2003). However, there were few studies that measured a behavioural component which is the closest to purchasing – the choice. Hence, we aim to contribute to the space-valence metaphor concept research by introducing results, which describe the effect of the emotional state on consumer’s attention within vertical space, which is a predictor for the actual purchase (Maughan, Gutnikov, and Stevens 2007; Pieters and Warlop 1999).

Literature review

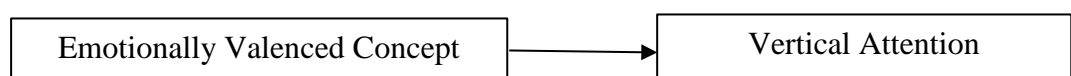
For our research it would be relevant to review the theoretical background within the area of conceptual metaphorical associations, as we are aiming to observe the relationship between abstract concepts (happiness and sadness) and rational ones (top or bottom location); vertical placement, vertical associations with emotions and the effect of the metaphors paired with attitudes.

There is a metaphorical association between emotionally valenced concepts and vertical space representations

The phenomena, which reflect the relationship between emotion and vertical placement, are based on the space-valence metaphor (Sasaki et al., 2016). One of the most common frameworks, which explains metaphor, is Conceptual Metaphor Theory (CMT; Lakoff, Johnson, 1980). Lakoff defines metaphor as “a cross-domain mapping in the conceptual system”, meaning that people use metaphors as a tool to explain abstract concepts applying familiar experience or knowledge. In other words, this might imply that a person could communicate an abstract construct, such as happiness, with a more concrete notion, such as top, and sadness with bottom respectively. Barsalou (1999) suggests that such associations are bidirectional: conceptual processing might influence individual’s sensorimotor experience as well. Similarly, Meier (2004) extends prior research on CMT demonstrating, that when making judgments, people automatically perceive objects that are high in visual space to be positively valenced, whereas objects that are low in visual space - negatively valenced.

Building on Lakoff and Johnson’s work (1980) on conceptual metaphor, many empirical studies in the area of psychology and consumer behaviour demonstrated important associations between affective valence and spatial representations. Furthermore, different types of priming of metaphorical frames were observed, which can have impact on people’s attitudes or behaviour and such framing effects may themselves interact with whatever bodily experience the decision maker has at the time (Lee and Schwarz 2014). This might imply that a man jumps when he is happy, because his metaphorical association “happiness is up” transforms into bodily response. Therefore, it might be reasonable to recommend that given the “good” activates “up” and “bad” activates “down”, there will be an impact on vertical attention and further on spatial choice as a behavioural response as well. Therefore, our main hypothesis is suggested to be:

H1: There is a causal relationship between emotionally valenced concepts and vertical attention.



Emotions affect consumer behavior

As it was previously studied, emotions do influence behavior and explicit actions (Bagozzi, 1999). Moreover, they have taken an important role in marketing communication strategies: Edell & Chapman (1987) showed that “understanding consumers' feelings is as important as understanding their thoughts” when it comes to assessing the effectiveness of advertising.

However, Bagozzi (1999) emphasizes that there is little consistency when it comes to defining emotions. Therefore, it is important to determine a framework, which will be used as a base for our study.

Affect will be defined as “Genuine subjective feelings and moods, rather than thoughts about specific objects or events” (Russell & Carroll, 1999), which can serve as an umbrella for emotions as a short-term response to a specific object or situation (Bagozzi, 1999). In our research we suggest to focus on emotions rather than mood, as they are more tend to influence behaviour and explicit actions than moods (Bagozzi, 1999).

Valence is one of the key dimensions of emotions, which was studied and found to be an important moderator of the emotional effect. Valence (positive or negative) is predicted to have similar influences on judgement (Johnson & Tversky, 1983; Wright & Bower, 1992). Nevertheless, it is important to consider an appraisal-tendency approach, which assumes that underlying appraisal themes define the influences of different emotions on judgement (Lerner & Keltner, 2000). In other words, valenced object can elicit different emotions, depending on individual's evaluation (Moors, Ellsworth, Scherer & Frijda, 2013). What is more, according to affective valence-based models (Schwarz and Bless 1991) positively valenced stimuli should lead to less effortful, top-down processing and increased reliance on heuristic, while negatively valenced stimuli should lead to more careful, bottom-up processing. Applying this to the conceptual metaphor theory, one might suggest that positively valenced concepts are stronger and the associative link “happiness is up” might be stronger than “sadness is down”.

For the purpose of this study we suggest to represent positive valence with happiness and negative valence with sadness. These are primary human emotions, which are common for everyone and do not depend on individual experience, cultural background or context (Ekman, 1992). Moreover, we selected

“happiness” because this is an emotion that encompasses several positive emotions, it is easier to identify for people, it makes the atmosphere feel safe (Schwarz, et al., 1991), it generates and increases confidence as well as allows people to be “more reliant on their thoughts” (Briñol et al., 2007). Sadness, on the other hand, as opposed to happiness, joint negative emotions, makes the atmosphere feel problematic (Schwarz, et al., 1991) and make people less reliant on their thoughts. (Briñol et al., 2007).

Previous research has demonstrated the influence of emotions on consumer attention, as well. It was found that negative affect appears to bias selective attention in a direction that favors lower regions of physical space (Meier, 2006). Additionally, Pêcher (2009) has found that there is a significant impact of emotions, elicited by positively or negatively valenced music, on individual’s behavior, which is mediated by attention.

Much research was done in order to demonstrate the behavioural impact of emotions. For instance, Winkielman et al. (2005) in his research demonstrates the influence of emotions on particular actions: people that were exposed to a happy face increases their consumption and willingness to pay. This finding is another indication that emotions can alter consumer behaviour.

Verticality is a significant factor of consumer behaviour in terms of associations “good is up” and “bad is down”

Based on the ideas of Conceptual Metaphor Theory, many researchers exploited the influence of spatial verticality on consumer behaviour. For example, Freddi, Cretenet and Dru (2014) found that Up-vertical position is evaluated by respondents more favourably for positive words while Down-vertical position – for negative words. So, if vertical position is congruent with emotions behind the words, attitude of respondents will be more favourable.

In experiments performed by Sasaki, Yamada and Miura (2016) participants placed dots higher when they were exposed to positive images than when they were exposed to negative images. However, they suggest that conscious emotional information processing is necessary for activating sensorimotor representations of vertical directions, and voluntary action is performed based on these activations (Sasaki, Yamada and Miura 2016).

More recently, another team of researchers found the metaphoric congruence effect only in the spatial-to-valence direction, but not in the valence-to-spatial direction (Huang and Tse 2015). In other words, the scientist found some more evidence to claim that UP-vertical position is associated with “good” words, while they found no evidence for the opposite: that “good” words make respondents to prefer more UP-vertical position.

Nevertheless, Lynott and Coventry (2014) observed an asymmetry in the spatial-to-valence association. During the experiment, happy faces were identified more quickly in an upper than in a lower space, but no difference was observed during sad faces identification. This might imply that association “happy is up” is more fluent and therefore can be perceived as more positive.

Prior research demonstrated that positive attitude towards an object may lead to changes in behavior in favor of this object (Ajzen & Fishbein 1977). Therefore, we suggest that subjects, who were induced with positively valenced stimuli will have more positive attitude towards them. Hence, they will pay more attention to the upper rather than to the lower side and will easier recall higher placed objects than the lower ones.

Based on this, we are designing the following sub-hypothesis:

H1a: *Happy emotional state will lead the participant’s attention to the upper space, which will cause an easier recall of the objects placed above.*

Another and more respondent-sensitive perspective was taken by Meier and Robinson (2006). They found support to claim that the higher neuroticism or depressive symptoms of participants are, the faster they were to respond to or to detect lower (versus higher) spatial attention targets. These results suggest that negative affect in general, and depressive symptoms in particular, appear to bias selective attention in a direction that favours lower regions of physical space (Meier and Robinson 2006). Hence, we suggest the reverse sub-hypothesis, which complements the main one H1:

H1b: *Sad emotional state will lead the participant’s attention to the lower space, which will cause an easier recall of the objects placed below.*

To sum up, one can argue that most of researchers found verticality as a significant factor of consumer behaviour. On the one hand, congruency between

vertical position and valence of stimuli was almost always important for respondents' evaluation. On the other hand, such causation patterns as “good is up” and “bad is down” were mostly found valid only when some conditions were satisfied (e.g. enough attention, emotional context and etc.).

Methodology

This paper aims to study the interaction between emotional stimuli and attention within a vertical spatial axis. For this we suggest a general method for two studies with different stimuli manipulation techniques. The study will consist of a causality relationship between the emotional valence, as independent variable (IV) and attention as the dependent variable (DV), being designed as a 3 (emotions: neutral, happy, sad) x 2 (location: UP, DOWN). The emotional state will be induced in Study 1a by a (neutral, happy, sad) scene from a film, while in the Study 1b, the manipulation technique used will be recalling a personal (happy, sad) moment, in combination with congruent music.

Study 1a

An online experiment is conducted in order to get more responses and be able to perform reliable statistical analysis. A potential drawback of an online study might be that online respondents tend to be less attentive than subjects supervised in lab (Oppenheimer et al., 2009). However, we are going to control for this through instructional manipulation checks in order to identify inattentive subjects and reminding them to pay more attention in task descriptions.

Participants

There are 600 respondents (200 per each group: happiness induction, sadness induction and control group), randomly selected using Amazon MTurk service. It was observed that using MTurk provided reliable results during previous behavioral researches (Goodman 2012). MTurk provides us with the sample, which represents people from 50 countries, 55% female (Burhmester et al. 2011), which contributes to the generalizability of results. It was noted that this tool provides at least as diverse and more representative sample of noncollege populations than those of typical Internet and traditional samples (Burhmester 2011). Moreover, MTurk has lower non-response rate than a traditional web study (Paolacci 2010).

Manipulation used: Films

Montoro et al. (2015) took a first step towards the study of a cross-modal metaphorical mapping of emotions onto vertical space. Instead of using only visual stimuli, they started to use auditory words. The results obtained showed that a cross-modal association of affective valence and vertical space is possible but only when participants were engaged in emotion-related task. Thus, they argue that just an active scrutiny of the words is not enough to generate an embodied interaction. In consequence, in order to efficiently induce the participants a certain emotion, a combination between auditory and visual stimuli is to be used, involving effective stimuli such as films. It was shown that not only they are easy to be applied as a manipulation technique, but they can powerfully influence the people's momentary experience (Tan, 2000). Various studies showed emotional response when films were watched, concluding that videos are one of the most effective methods at inducing the target affective state (Fernandez et al., 2012, Ferrer et al., 2015).

General Procedure

After the initial introduction of the study, and some general indications that need to be followed by the participants, they will be asked to turn on the speakers, or use some headphones, in order to be able to fully experience the movie sequence that will follow.

As the study of Forgas and East (2008) used, in this first study, each group of participants will be exposed to a different kind of movie clip, in order to induce the desired emotional condition. More precisely, in order to promote happiness, the respective group of participants will be shown an extract from a comedy series, a scene from a film about cancer to induce sadness, and a sequence of a nature documentary to promote a neutral emotional state.

After watching the movie clip, the participants are asked to answer several questions regarding the sequence they just watched, just for verifying their attention level. The questionnaire includes also a question regarding their emotional state using the PANAS scale, in order to confirm if the affective state was correctly manipulated.

Then, participants are asked to perform a text understanding task. All groups are exposed to the same emotionally neutral piece of text, which has two advertisements of fictitious brands above and below it, representing upper and lower vertical space. The advertisements will consist of neutral brand names and logos, aimed not to influence the emotional state of the participant. They are asked to read the text carefully as related questions will follow. The text is divided into 3 parts, which are shown successively. Each part is accompanied with different advertisements. There are 6 pieces of ads in total, which are shown to participants. After, the participants will be asked to answer a set of questions regarding the information described in the written text, with the purpose of verifying the attention they paid for while reading.

In the end, the participants are supposed to perform an unaided recall task (name the brands, which they might have noticed while reading the text) and aided recall task (choose an ad, which was used before among the range of similar ads).

The brand which will be recalled first is supposed to be the one that received the most attention. Hence, we will use its position (top or bottom of the page) for reporting the dependent variable. Similarly, the brand which will be recognized will be considered as the chosen one and its position will be used for DV measurement.

In order to interpret the received data and evaluate the effect of emotions on vertical attention the analysis of variance (ANOVA) will be used.

Study 1b

The second study is conducted as an online experiment as well. It is a conceptual replication of the Study 1a, which should make our hypothesis more true.

Manipulation used: Autobiographical Recall

For our second study we suggest to use autobiographical recall technique combined with music. The combination of two emotion induction procedures might be more effective than using them separately, as a first induction (recall task) occupies foreground attention and a second one (music) contributes to a congruent background atmosphere (Jallais & Gillet, 2010).

Recent studies demonstrated that recall-based affect induction has successfully elicited target emotions (Lench et al., 2011), particularly, to study their impact on visual attention (Jefferies et al., 2008). The efficacy of this method is explained by its high relevance to a respondent, which helps to control for individual differences within sample (Zhang et al., 2014) and its ecological validity (Quigley et al., 2014). Moreover, it was shown that recall is effective during web-based mood induction (Goritz & Mozer, 2006), which is relevant for our study design. A potential drawback of this technique can be the individual differences of the participants in terms of ability to engage in mental imagery (Quigley et al., 2014). Nevertheless, we suppose to compensate it by combining it with music induction. Music is often used in combination with recall or imagery techniques (Chepenik et al., 2007; Zhang et al., 2014). as it evokes stronger emotional feelings than a single MIP (Baumgatner et al., 2006). Therefore, we suppose that the suggested emotion elicitation technique will be sufficient to evoke target emotions.

General Procedure

Participants are told to put on the headphones in order to get the instructions. Emotion-congruent music is played in the headphones along with the recall task instructions and while they were performing it (during 5 minutes in total). The participants are instructed to focus on their recall task and told that music would help them not to be distracted. The “happy” group is supposed to recall the most happy event in their life and write 7-10 sentences about it. The “sad” group has a task to recall the saddest, respectively. The “control” group needs to recall a last visit to a grocery store.

In order to avoid cheating, the answer is constrained to at least 100 symbols, so that a participant cannot proceed further without completing the recall task.

Afterwards, similarly to Study 1a, participants are reporting their emotional state and perform text understanding task.

The analysis will be performed applying ANOVA as well.

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