The Happiness Premium: The Impact of Emotion on Individuals’ Willingness to Pay in Online Auctions

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Abstract

Individuals’ bidding behavior in online auctions has been the subject of research in multiple disciplines. Emotion has been shown to be an important factor affecting individual behavior and decision making but we know little about its effects on online bidding. A lab experiment was conducted to investigate the impact of positive emotion on individuals’ willingness to pay in online auctions. We found that individuals with mildly positive emotion bid more than those with neutral emotion; that is, they paid a “happiness premium” of about 10%. The effect size is medium (Cohen’s $d = .41$). This study contributes to electronic commerce literature by identifying emotion as an important factor affecting individual online auction behavior. The findings provide guidance to auction websites interface design. By incorporating emotion content, websites can increase bids by influencing consumers’ positive emotion.

1. Introduction

Online auctions have been one of the greatest successes in electronic commerce. eBay, the largest online auction website, has more than 100 million active users worldwide. In 2011, more than 68.6 billion dollars’ worth of products were traded on eBay. However, the factors affecting the bidding decision are of great importance practically and theoretically but have not been well-researched.

Several factors affecting consumers’ bidding decisions have been identified, including the number of visual cues (e.g., product pictures), the number of bidders, explicit reference points, and previous purchase satisfaction [3, 40, 46]. In studying online auction behaviors and bidding decisions, most research has made the assumption that consumers behave rationally [11]. Yet, auctions, especially consumer-to-consumer auctions, are often an emotional process [39] in which the emotional state of the consumer can greatly influence his/her perceived value of the product [41]. Besides, even though both conveying positive emotion, mildly happy emotion and very happy emotion are proven to have different impact in multiple decision making tasks [29, 45].

This study investigates how an individual’s positive emotion influences his/her willingness to pay for a product in an online auction. Especially, we investigate the difference of impact between mildly happy emotion and very happy emotion on individuals’ willingness to pay. We conducted a lab experiment using an artificial auction website. Individual emotion was related to willingness to pay. Individuals who were mildly happy were willing to pay a significantly higher price than individuals who were neither happy nor unhappy.

2. Prior theory and research

2.1. Electronic auction and bidding behavior

Consumers have been gaining more and more pricing power, especially in the online environment with the rise of electronic businesses incorporating name-your-own-price mechanism, such as online auctions. In this environment, understanding consumers’ willingness to pay has become key to business success [1, 6, 7, 22].

Consumers’ willingness to pay reflects their perceived value of the product. Prior research has looked into multiple factors affecting consumers’ perceived value of the products and thus their bidding behavior. Most prior research is based on rational choice theory, which assumes that an individual acts rationally to balance costs against benefits to maximize personal advantage [11, 35, 38]. Factors such as product information, product image, pricing strategy, and system design have been found to influence consumers’ willingness to pay and bidding behavior. Researchers looked into the effect of product...
review on price and suggest separating perceived value from perceived quality as a strategy to control impact of product review [25]. It is also found that increasing the quality of an auction business’s e-image increases the prices received at the auction and consumers’ willingness to transact with the business [20]. Not only product specialization, non-contractible elements, including non-contractibility—quality, supplier technological investments, information exchange, responsiveness, trust, and flexibility, of inter-organizational relationships also have great explanatory power for reverse auction use [31]. Implementing information feedback to the auction system also found to increase the amount of successful trading on the auction websites because it helps build trust, which is critical in electronic auctions [1, 2, 7].

Prior research has even found that users’ levels of online auction addiction have an impact on their reasoned IT usage decisions through altering users' belief systems [44]. However, most of the research on electronic auctions has been built on an assumption that consumers make rational decisions. Behaviors resulted from or impact by other factors, such as emotion, have not caught the attention or interest of most researchers.

2.2. Emotion

According to Frijda [18], affect is an umbrella construct that contains many different varieties, including dispositional affects, moods, emotions, and emotional intelligence [18]. Different types of affect have different characteristics and impacts on individuals. Affect can be broad and vague or acute and specific. Affect may have a long term influence on individuals and its effects can be short term.

Emotion, as one type of affect, has the characteristics of having a clear trigger and a short but intense effect on the individuals [18]. Emotion is a subjective feeling related to personal needs, goals, or concerns towards the self or others, and is typically triggered by situational events and objects in one’s environment, rather than internal factors. Once the stimulus conditions, such as the stimulus itself or the supporting cognition, perceptions or other elicitors are no longer active, emotion will gradually disappear. Emotion is often highly contagious [21, 36]. The same emotion can be shared with others through expression, vocalization, posture and movements.

Emotion, especially positive emotion, has been well studied in social psychology and marketing. Multiple social psychology theories emphasize the effect of emotion. According to Construal Level Theory (CLT), positive emotion can increase individuals’ willingness to think about abstract and future goals, while negative emotion makes people focus more on immediate and proximal concerns [8, 12, 19, 24, 26]. Research on the impact of positive emotion also finds conflicting results. Previous research in marketing has found that, positive emotion can increase individual’s resistance to temptation compared with neutral emotion [14]. On the other hand, research in the context of electronic commerce has found perceived enjoyment to be positively related to consumers’ impulse buying [32]. Despite the conflicting results on the impacts of positive emotion on individuals’ impulse buying behavior, positive emotions are generally found to have a temporal effect on decision making in prior literature. Individuals are more likely to be influenced by emotion during the formation of the first evaluations [33].

Emotion’s importance as a factor influencing an individual’s evaluation of a target depends on environmental features, such the accessibility to the target information, the quality and quantity of the contextual cues [5, 27, 37]. In the online bidding context, individuals’ emotion can play an important role in evaluating products.

Emotion is usually categorized as positive, neutral, or negative. However, researchers also found that individuals with mild positive emotion exhibit different behavior from those with extremely positive emotion [10, 13, 30, 34]. Individuals in the mild positive group is found to be more engaged in trying a diversity of products (variety seeking behavior) than the neutral or extreme positive groups [29, 34]. Thus, mild positive should not be treated the same as extreme positive in all circumstances.

Most research categorizes both mildly positive emotion and extremely positive emotion as positive emotion and mainly focuses on comparing the impact of positive, negative, and neutral emotions. This study distinguishes mildly positive emotion from very positive emotion and examines their impacts on individuals’ willingness to pay in online bidding tasks.

We argue that emotion will influence the bidding decision in two ways. First, individuals with positive emotion will evaluate a product more quickly and impulsively than those with negative emotion [32]. The more extreme the positive emotion, the greater the effect. Positive emotion has a strong impact to cause action [18, 33]. Compared with negative emotion, positive emotion will lead to higher likelihood for individuals to make a choice and will make individuals to make decisions quicker [33]. Thus, in an online bidding website with sufficient product information and contextual cues, individuals with positive emotion will use less time to make a bidding decision. Since they make the bidding decision fast, their bidding price reflects their initial perceived value of the product. Therefore, positive emotion is an important factor affecting individuals bidding price by anchoring them
more firmly on their initial impressions of a price to bid. Second, according to the broaden-and-build theory of positive emotions, while having a positive emotion, individuals usually have a higher self-evaluation compared with when they are having a negative emotion [16, 17, 37]. This higher self-value will increase individuals’ perception of the value of objects in their environment [23, 27]. In the online bidding context, the bidding product serves as an ideal external object to reflect the phenomenon of over-valuation. In such context, the focus of the bidders is on the product they want to purchase. Individuals will project their self-value on these products. Therefore, we theorize that individuals with positive emotion (both mildly happy and very happy) will value products higher than those with neutral emotion and thus will be willing to bid more for products than those with neutral emotion. Therefore, we hypothesize that:

H1a: Individuals with mildly positive emotion will be willing to pay more for a product than individuals with neutral emotion.

H1b: Individuals with very positive emotion will be willing to pay more for a product than individuals with neutral emotion.

Furthermore, mild positive emotion has different impacts on individual behavior and decision making from very positive emotion. According to the prior research in social psychology, gaining positive emotion is a general goal of all humans [43]. The level of positive emotion will also in turn to influence “strategies” or “motivations” for people to attain such goal [15]. Individuals with mildly positive emotion have a greater desire to increase their emotions and thus are more likely to value items more highly. The motivation induced by mildly positive emotion serves as a stimulus to spur individuals to over-estimate the value of products available so that the perceived value of the self will also be increased. In an online auction, individuals with mildly positive emotion will be more motivated to perceive objects in the environment as having a higher value as a way to increase their positive emotion than those with very positive emotion. For individuals with very positive emotion, on the other hand, the motivation for them to achieve higher level of happiness is not as high as that of individuals with mildly happy emotion. Thus, individuals with mildly positive emotion will be willing to pay more to a product than those who are very happy. Therefore:

H2: Individuals with mildly positive emotion will be willing to pay more to a product than individuals with very positive emotion.

3. Method

3.1. Participants

Two hundred and eighty-two undergraduate students taking an introductory business course at a large US public university participated in the lab experiment. Participants were assigned randomly to one of the two treatments, neutral or positive. All participants received extra credit for participating in the experiment. Our focus was on participants reporting neutral or happy emotions, so 19 participants reporting being unhappy were removed from the analyses (see section 3.3). Another 14 participants failed the manipulation check and were removed from the analyses (see section 3.5). The final sample was therefore 249 participants.

3.2. Task

The task asked participants to imagine themselves as a new student in a new master program in the business school, Master of Science in Graphic Design (MSGD). In order to take courses in this new program, students needed to purchase two products, a camera and a laptop from the bidding website provided in the experiment. A few detailed configuration requirements for each product were provided in the task instructions.

For each product category (cameras or laptops), eight products were provided to choose from. The eight products consisted of two top performing products, two low performing ones, and four good performing ones. All products in the same category had the same color and appearance to avoid the effect of appearance on participants’ bidding choice. Participants were presented with product descriptions, brand descriptions, rating reports, detailed test results, and suggested list price for each product. Product descriptions and brand descriptions were adapted from Amazon.com. Rating reports and detailed test results were adapted from Consumer Reports. Participants were required to bid on one and only one product from each category. The bidding price is a reflective of the participant’s perceived value of the product. It can either be lower or higher than the suggested list price.

3.3. Treatment

There were two treatments in this experiment, positive and neutral. Participants in both treatments watched two video clips. The first video clip for both treatments was a 3-minute long car chase scene from The Bourne Legacy. The car chase scene is fast paced.
and highly arousing. It serves the purpose of attracting the participants’ attention to the manipulation. The second video for the positive manipulation was a 13-minute clip from the *American’s Funniest Video—Animal Extravaganza*. The second video for the neutral manipulation was an 8-minute introductory database lecture.

Individuals have different levels of sensitivity to the emotion manipulation. Instead of using manipulation as the experiment conditions, we used self-reported emotion level as the criteria to assign individuals to three different groups, neutral group, mildly happy group, and very happy group.

We used three measures of self-reported emotion. The first two were drawn from the BMIS scale [28]. We administered the entire 8-item BMIS which asks respondents to what extent they feel certain emotions presented as single words. The items use a four-item scale, with 1 representing “definitely not feel”, 2 representing “do not feel”, 3 representing “slightly feel”, and 4 representing “definitely feel”. We used only two items from this scale: “happy”, and “lively”.

The third item was a question asking overall emotion also drawn from BMIS scale [28]. Overall emotion was measured using a 1 to 11 scale, with 1 representing “extremely unpleasant”, 6 representing “neither unpleasant nor pleasant”, and 11 representing “extremely pleasant”. Participants reporting being unhappy (1-4 on this scale) were excluded from the study and thus removed from the analysis. Overall emotion was converted into a 1-7 scale by subtracting 4.

The reliability of the three measures using Cronbach’s Alpha was 0.77, showing adequate reliability. Next, the average score of the three items was calculated. A one-way ANOVA was conducted to compare the mean of this emotion measure between the two treatments. The mean emotion score of the participants in the neutral treatment was significantly different from the mean emotion score of those in the positive treatment (F (1, 281) = 12.710, p = 0.000). This result suggests that this measure is valid in capturing participants’ emotions.

We categorized participants into three groups based on their score on this measure. If a participant reported an average score of 1.00, 1.33, 1.67, 2.00, or 2.33, he/she was categorized into the neutral group. If a participant reported an average score of 2.67, 3.00, 3.33, 3.67, or 4.00, he/she was categorized as mildly happy group. Those who reported an average score of 4.33, 4.67, or 5.00 were categorized as members of the very happy group.

Table 1 shows how three different groups were divided. There were 58 participants in neutral group, 141 participants in mildly happy group, and 50 participants in the very happy group.

### 3.4. Dependent Variables

Participants’ willingness to pay is calculated as the percentage of the participant’s bidding price to the suggested list price. The laptops and cameras use a close price range. The price of laptops ranged from $480 to $1150. The price of cameras ranged from $700 to $1999.

### 3.5. Procedure

When participants arrived at the laboratory, they were instructed to read the brief shopping task description. Then, participants were asked four questions regarding the content of the task. These questions were (1) the name of the master program, (2) how many product categories were they to bid on, (3) what are the names of these product categories, and (4) how many products they need to bid on. Participants who failed to correctly answer those questions were considered as not understanding the task and thus excluded from the analysis. Next, participants in both treatment groups watched two video clips and evaluated the quality of the videos (to disguise the reason for the video clips).

After watching the video clips, all the participants completed a survey to self-report their emotion level. Then, participants were directed to the online bidding website, from which participants bid on one product from each product category. In the end, participants filled in a post-experiment survey containing demographic questions.

### 4. Results

All statistical analyses were completed in SPSS PASW Statistics 19.0. A repeated-measures GLM was used to examine differences among the neutral group, mildly happy group, and very happy group. Data analysis result is presented in Table 2.

The results show that willingness to pay is statistically significant different among three emotion groups (F (2, 246) = 5.097, p = 0.007). The order of products participants put bid on did not affect their willingness to pay (F (1, 246) = 0.224, p = .636). Wilks’ lambda for the interaction between product type and emotion group are not significant (F (1, 246) = 0.996, p = .352), indicating there is no interactions between these two factors.

Figure 1 shows the comparison of the willingness to pay for laptops and cameras across the three emotion groups. From the mean comparison, it can be observed that the mildly happy group has higher willingness to pay for a laptop than both neutral group.
and very happy group. The willingness to pay for a laptop of the very happy groups is higher than the neutral group.

A post hoc analysis using LSD is presented in Table 3. As shown in Table 3, the willingness to pay for a laptop and a camera between neutral group and mildly happy group is significantly different (M = -0.090, SD = 0.030, p = 0.03) at 0.05 level. The effect size, calculated as Cohen’s d is in the medium range (.41). Thus, H1a is supported. The willingness to pay between neutral and happy group are not significantly different (M = 0.057, SD = 0.037, p = 0.376). H1b is not supported. However, the difference of the willingness to pay for mildly happy group and happy group are not statistically different (M = 0.031, p = 0.069). H2 is not supported.

5. Discussion

Our study provides evidence that emotion affects individuals’ bids in online auctions. Individuals with mildly happy emotions bid more than those with neutral emotions. Interestingly, those with very positive emotions did not bid higher than those with neutral emotions.

We believe positive emotion influences individuals’ online bidding behavior through two distinct processes. Firstly, positive emotion is usually positively related with self-evaluation [4, 42]. The higher valuation of the self causes an increase in the perceived value of other objects in the environment, [23, 27] such that individuals with positive emotion tend to have a higher (or even biased) bids in the online auction. Second, gaining or maintaining positive emotion is a general goal of all humans [43]. Positive emotion will also in turn to influence “strategies” or “motivations” for people to attain such goal. As an individual’s positive emotion increases, individual’s desire/motivation to maintain positive emotion decreases [15]. Thus individuals with mild positive emotion have a greater desire to increase their emotions are thus more likely to value items more highly. These two separate processes combine to produce a curvilinear relationship between emotion and willingness to pay, such that individuals in a mildly positive emotion state bid the highest in online auction context. We call this the “happiness premium.”

According to the mean comparisons, the willingness to pay of participants with mildly happy emotion is about 10% higher than that of the participants with neutral emotion (.947 versus .857). This is a not only a significant difference, but a meaningful difference. Cohen’s d, a typical measure of effect size is considered “large” if is .5 or greater. The effects size of the happiness premium in this study was .41, which is in the medium range. Thus factors other than those identified by researchers conducting research under the assumption of rational choice theory have a significant and meaningful influence on consumers’ willingness to pay. Emotion plays a major role in affecting online bidding behavior. The findings also provide further evidence that human behavior can be influenced by emotion. The lens of emotion in individual behavior and decision making has not been deeply studied by IS researchers. We believe that these results have important implications for research and practice.

5.1. Implications for research

We believe this study opens a new door in electronic commerce research. Prior studies have examined “rational” factors affecting individuals’ willingness to pay under the assumption of rational choice theory that individuals make rational decisions to optimize personal profit by maximizing gaining and/or minimizing cost. These factors are import. However, we need to look beyond the straightjacket of rational choice. The impact of emotion on decision making has been debated for decades. A recent study in neurosciences has found that emotion is an important factor or even a precondition in individuals’ rational decision making [9]. Our study contributes to theory, in that we found that individual emotion can have a very meaningful, very large effect on an individual’s behavior in online auctions. We believe more research is needed on the impact of emotion on bidding behaviors and other online behaviors.

This study focused on the impact of positive emotion on individuals’ willingness to pay in online auctions. The impact of negative emotion, however, is not studied. We believe that the underlying cognitive processes and mechanisms individuals with negative emotion undertaken on online auctions are different from those undertaken by individuals with positive emotion. Examining the effects of negative emotion on bidding behavior is equally important and useful in designing website interfaces promoting certain bidding decisions.

In addition to contributing to information systems theory, this research contributes to social and cognitive psychology literature as well. Setting the research context in online auction websites, this study investigates individual’s willingness to pay. Potential psychological factors or characteristics, such as emotion intelligence, personality, etc., may lead individuals to different behavior in online auction websites from traditional face-to-face auction context. Future research in cognitive psychology can focus on investigating the interaction relationships between technology characteristics and emotion factors on individual behavior in online auction websites.
Besides emotions, there are many other factors or heuristics affecting individual decision making and behavior under uncertainty. This study serves as a start on the research stream of investigating "non-rational" factors on individuals’ decision making in online commerce. Researchers, who are interested in understanding individual behavior and decision making under uncertainty in the context of electronic commerce, including auction websites, can be inspired by this study to examine the effects of other factors of their interest.

5.2. Implications for practice

The findings of this study can be extended to auction websites or other electronic commerce websites. This study has two major practical implications.

One practical implication is providing guidance for practitioners on auction website interface design. Mildly happy consumers are more likely to value products higher and thus bid higher and pay higher prices for products. The designers of online auction websites (and even electronic commerce websites) should explicitly consider designing their websites to increase positive emotion. By doing so, consumers are likely to pay more for products, thus increasing revenues to website companies.

Another implication is that companies can customize the products or information presented to consumers based on the users’ emotions. This study can be incorporated with recommendation systems. For instance, based on the consumers’ emotion, websites can tailor their recommendations. To individuals with mild positive emotion, the recommendation system can position products with higher prices as the top recommendations. To individuals with neutral emotion, on the other hand, websites can incorporate products with lower prices as the top recommendations.

6. Conclusion

Online auction behavior has been a research focus for many studies. Most studies have been conducted under the umbrella of rational choice theory. In this study, we focused on the impact of one "non-rational" factor, positive emotion, on individuals' willingness to pay. We manipulated emotion through video clips containing emotional content. The results suggest that individuals with different levels of positive emotion bid differently. Individuals with mildly positive emotion bid significantly more than individuals with neutral emotion. The mean comparison between mildly happy participants and very happy participants reveals an interesting pattern: mildly happy emotion may have a greater impact on bidding behavior more than very happy emotion. The results of this study show many opportunities for future research on the impact of emotion on individual behavior and decision making. Online auction and other electronic commerce websites can use the results of this study to increase consumers’ willingness to pay by increasing their positive emotions.

7. References


Table 1. The Emotion Scores for Three Treatment Groups

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<td>Neutral</td>
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<tr>
<td>Mildly Happy</td>
<td>2.67, 3.00, 3.33, 3.67, 4.00</td>
<td>141</td>
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<tr>
<td>Very Happy</td>
<td>4.33, 4.67, 5.00</td>
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Table 2. Means, Standard deviations, and results of statistical analyses

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<th>Mildly Happy</th>
<th>Very Happy</th>
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<th>p-value</th>
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<td>Std.</td>
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Table 3. Post hoc multiple comparison results

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<th>Std. Error</th>
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Figure 1. Mean plots of Neutral, Mildly Happy, and Very Happy Groups