

# Reverse Self-Control Effect of Hyperopic Consumers on Vicious Avoidance

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## Abstract

The purpose of this study is to remedy reverse self-control of hyperopic consumption and encourage hyperopic consumers to indulge themselves. We examine the behavioral effect of hyperopic consumers on vicious avoidance through the perspective of emotional accounting and the reinforcement theory to remedy hyperopic consumption and achieve behavioral reshaping. The study results show that positive emotional accounting induces hyperopic consumers to start mental operation before decision-making, which gives them a “Righteous Reason” to choose vice and generates the “Laundering Effect”, which helps hyperopic consumers alleviate the guilt of choosing vice and obtain the rationality and legitimacy of such choices. This study was to expanding the application of the operant conditioning theory into the study of consumer behaviors with the intention of shaping behaviors by remedying the reverse self-control problem of hyperopic consumers, helping hyperopic consumer bravely release themselves, and expanding the application of the Indulgent behavior and hyperopic consumer behavior.

**Keywords:** Hyperopic Consumer, Reverses Self-Control Effect, Vicious Avoidance, Emotional Accounting, Operant Conditioning

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## Introduction

Many purchase decisions involve an intrapersonal struggle between virtue and vice. Virtuous consumption decision means that customers purchasing utilitarian necessities or those that are required or needed but not desired, that emphasize necessity, responsibility, and farsightedness. In contrast, vicious consumption decision refers to yielding to hedonic temptations, even if purchase commodities these items are not really needed is viewed as impulsive, wasteful, indulgent and nearsightedness. Hence, virtuous consumption behavior is related to utilitarian necessity, whereas vicious consumption behavior is related to indulgent or hedonic perspectives. However, recent research also suggests that consumers can sometimes show strong resistance to indulgence, displaying what has been called “Hyperopic Behavior” to avoid guilty feelings and to meet social expectations

(Keinan and Kivetz, 2008).

Indulgent behavior (vice) literature has been premised on self-control and emphasizes the importance of exercising willpower and controlling desires to resist the temptation of vice (Baumeister, 2002; Hoch and Loewenstein, 1991). Much of this research is premised on the notion of myopia and assumes that the purchase and consumption of vices (or engaging in indulgent behavior/hedonistic decision) will definitely generate regret; if consumers choosing virtuous behaviors and are committed to utilitarian needs, these will not cause regret easily and will even generate more benefits in the long run (Baumeister, 2002; Read et al., 1999). However, Keinan and Kivetz (2008) research challenges this approach and assumes that consumers are often suffer from reverse self-control problem, namely, consumers develop decision-making patterns with excessive farsightedness and overconfidence in order to avoid regret or guilt. Hyperopic consumers are different from those with typical low self-control (e.g., myopic consumers). They do not yield to temptations and purchase necessities only. They are responsible and regard indulgent behavior as wastage, irresponsible, or even immoral behavior. Therefore, hyperopic consumer resistance products or experiences they believe are hedonic, and compromise with the most conservative and safest utilitarian choices.

Furthermore, Kivetz and Keinan (2006) demonstrate that though, in the short-term, it appears preferable to act responsibly and choose virtue over vice, over time such righteous behavior generates increasing regret. They argue that the passage of time attenuates regret about choosing vice and accentuates regret about choosing virtue because of the decay of indulgence guilt and the intensification of feelings of missing out on the pleasures of life. According to this perspective, this study aims to remedy hyperopic consumption and encourage hyperopic consumers to indulge themselves and avoid hurting their sense of happiness or even generating regret with the passage of time.

This study is based on the operant conditioning theory and induces consumers to learn the expected behavior through the stimulus-reaction theory (S-R theory). The reinforcement theory put forward by Skinner (1971) is the most classic application of the S-R theory. Skinner (1971) believes that behavior is a function of result; the generation of certain behavior is influenced by a certain result, i.e., the behavior is controlled by its consequences. The reinforcement theory could also be used to change people's behavior and achieve behavioral shaping. Since the aim of the study is to remedy hyperopic consumption, the researcher applied, for the first time, this theory into the study of consumer behaviors with the intention of shaping behaviors by remedying the reverse self-control of hyperopic consumers, helping hyperopic consumers bravely release themselves and expanding the application of the operant conditioning theory.

Past studies explained the analysis of indulgent behavior (vice) from the perspective of mental accounting. When consumers engage in vice, their mental accounting readily starts to reduce internal imbalance and helps alleviate the generation of negative emotions (Kivetz, 1999). However, hyperopic consumers are more responsible and farsighted, and would assess all possible benefits and problems before making a decision, emphasizing the "Justification" and "Reason-Based" approaches of consumption to prevent the generation of regret (Shafir, 1993; Strahilevitz and Myers, 1998). As to hyperopic consumers, inspire mental accounting (Thaler, 1985) may give them a "Righteous Reason" to persuade themselves to engage in vicious behaviors. Initially, this study refer to Thaler's (1985) research to induce the mental operation of consumers by concepts in

mental accounting to reduce the generation of negative emotions and encourage them to indulge themselves bravely. However, recent research about consumer behaviors has gradually shifted emphasis to the influence of internal emotion on decisions. Many empirical studies have demonstrated that emotion has a greater role and is more important than self-cognition in decision-making and the influence of emotion in some scenarios is even more apparent than cognition (Slovic et al., 2002).

Hence, Levav and McGraw (2009) referring to Thaler's (1985) research, proposes "Emotional Accounting" by incorporating the factor of consumer's emotion when making decisions. This research has found that past studies of vicious behaviors have comparatively neglected the emotional dimension of consumers. Therefore, we decided to base our study on the theory of emotional accounting (Levav and McGraw, 2009) and remedy the reverse self-control of hyperopic consumers by the mental operation that consumers readily start mental accounting when engaging in vicious behaviors to reduce negative emotions.

This study conducts three experiments to test the hypotheses. The findings can improve theories of indulgent behaviors and reverses self-control and help firms to develop marketing strategies by analyzing consumers' decisions of indulgent behaviors. Experiment 1 as the contrast group that tests consumers' vice avoidance without any interference, and demonstrates that excessive reverse self-control indeed generates hyperopic consumption. Experiment 2 incorporates the emotional accounting theory, and induces hyperopic consumers to start their mental operation before making decisions to slow the generation of negative emotion, make vicious choice, and achieve the aim of remedying their reverse self-control problem. Experiment 3 extends the stimulus-reaction in the operant conditioning theory to reshape hyperopic consumers so that they adopt the expected behavior. With reference to the concepts in reinforcement theory (Skinner 1971), interference effects are compared by classifying two categories: positive and negative enhancers. Therefore, the study aims to: (1) remedy the reverse self-control of hyperopic consumers, (2) examine the behavioral effect of hyperopic consumers' vicious avoidance through the perspective of emotional accounting, (3) examine the interference effect of different types of enhancers on hyperopic consumers' vicious avoidance decisions, and (4) compare the strengths of the two methods of remediation.

## **Literature review and hypotheses**

### **Hyperopia**

Hyperopic consumers are those who prefer utilitarian needs, emphasize the necessity of consumption, and consider not only the immediate loss (money) but also the long-term benefits of purchases. Hyperopic consumers prefer virtuous behavior and are committed to utilitarian needs, instead of indulgent behaviors, to avoid the generation of guilt (Keinan and Kivetz, 2008; Kivetz and Keinan, 2006). For example, hyperopic consumers would join training courses to enrich themselves in vacations, instead of joining friends to go out and have fun. Hyperopic consumers have the following characteristics: (1) they prefer utilitarian behaviors: are not tempted by short-term benefits, consider long-term investments, and expect greater benefits. (2) Hyperopic consumers emphasize responsibility and macroscopic thoughts: and need the rationality and necessity of consumption to release themselves from guilt. Therefore, hyperopic consumers strongly repel and resist vice.

Past studies have exclusively used the term “Behavioral Pattern Inclination” to determine whether or not consumers suffer from reverse self-control problem, hyperopia. However, hyperopic tendencies cannot only be examined from single events or extreme luxurious behaviors. The subjective judgment of an event as an indulgent behavior is also affected by the cognitive differences of individuals. Hence, Haws and Poynor (2008) adopted a quantitative method to measure the hyperopic difference between individuals, and developed a six-item hyperopia scale to objectively measure consumers’ hyperopia degree. This study uses Haws and Poynor’s (2008) hyperopia scale to measure the degree of hyperopia of respondents, and takes the average score of respondents on each item as the criteria with which to judge their degree of hyperopia degree. It also discusses the vicious avoidance decisions of consumers with different degrees of hyperopia.

#### Emotional Accounting

Levav and McGraw(2009) extend the viewpoint of mental accounting (Thaler, 1985) and incorporate emotion when making decisions. He proposes the concept of emotional accounting to examine the (positive/negative) feeling of consumers towards money from different channels and their methods of spending. Past studies based on mental accounting all assume that people take the value function in prospect theory (Kahneman and Tversky, 1979) as the criteria for the cognitive matter, which results in that the decision-making process is affected by the way and framework of problem statement or its assertion as gain or loss, namely, consumers make the decision as an irrational economic man through the operation of mental accounting instead of through the rational thinking (Thaler, 1985). Besides explaining the financial activities/expenditure of consumers, mental accounting is often used to verify many consumptive behaviors, such as consumer tax (Epley et al., 2006) and windfall (Arkes et al., 1994).

On the basis of mental accounting, Levav and McGraw (2009) incorporates emotional cognition and proposes emotional accounting, and demonstrate that consumers will label “positive/negative emotion” on their financial resources based on their emotional cognition, and this, in turn, will influence their subsequent purchase decisions. Their study also pointed out that money obtained not through labor (negative label) is more easily spent than that earned through hard work (positive label). The money not obtained through labor would impel consumers to engage in virtuous behaviors (i.e., donation) to avoid the intensification of negative emotion. The respondent will spend this sum of money as much as possible in conformity to the moral code to cleanse his or her negative emotion in obtaining it. This emotional transfer is similar to the macroscopic thoughts of hyperopic consumers in making decisions. Both want to avoid the generation of guilt feelings and negative emotions inspired by engaging in indulgent behaviors.

Therefore, this study helps hyperopic consumers alleviate their guilty feeling towards vicious choices and obtain the rationality and legitimacy of such choice through the laundering effect of emotional accounting on indulgent behaviors. This would make them brave enough to indulge themselves and avoid the generation of regret. Taking these arguments together, we propose the following:

H<sub>1</sub>: When hyperopic consumers are under negative emotional accounting, the effect of vicious avoidance is higher than that under positive emotional accounting.

## Operant conditioning

Operant conditioning, also called “Tool Conditioning” or “Tool Learning”, is a process or method for behavioral change inspired by stimulus. It is a famous theory of learning proposed by Skinner (1938). It features the analysis of behaviors by scientific methods and is also called the “Applied Behavioral Analysis Theory”. The theory of operant conditioning has four important conclusions: (1) it must standardize the behavior that individuals respond to, (2) it must expose individuals to stimulating enhancers, (3) it must observe and record the original behavior of individuals when not stimulated by enhancers as the comparative reference, and (4) it must determine the influence of time and frequency of the enhancer’s appearance on remedy behaviors that individuals need to demonstrate. The difference between operant conditioning and traditional classic conditioning lies in the spontaneity of individuals. Skinner believes that operant conditioning is the main learning process of mankind and its role lies in spontaneous behaviors. In contrast, the behavioral reaction in classical conditioning belongs to induced behaviors.

Hence, this study adopts the theory of operant conditioning and applies it to consumers’ decision-making as a tool for remedying consumers’ vicious avoidance. Remedying consumer behaviors systematically by scientific methods will guide consumers in changing their current behaviors to spontaneous ones, which will be rooted in their mindset, thus achieving the long-term effect of remediation.

Changing an organism’s behavior using the operant conditioning theory has to find things and objects that have reinforcing effects on the organism (Skinner, 1971). When making decisions, individual always feel confused because of highly perceived risks resulting from limited and uncertain information, and their worries of possible loss may inspire negative emotions, such as concerns and doubts (the unbalance of mental state is called “anticipated emotions”) (Leone et al., 2005) . Under information asymmetry, consumers often ask for assistance from external channels as the judging criteria to reduce the uncertainty of consumption risks. To asking a reference group about a product (i.e., word-of-mouth) is an important channel of information that consumers prefer (Ainscough and Luckett, 1996).

This study takes word-of-mouth as the enhancer, provides relevant information as a supplement for consumers to strengthen their confidence of consumption/decision, and classifies enhancers into two types (positive and negative) with reference to Skinner’s (1971) study. The negative anticipated emotion (regret) is incorporated into the negative enhancer of the word-of-mouth message to tell consumers that they may find that the plan they gave up will have better performance and “regret” would be generated if the wrong decision is made, i.e., inspired consumers to build a mental simulation of counterfactual thinking by warning, generating the mentality of being afraid of regret and forcing them to rethink the plan. The positive enhancer is incorporated into the expression of positive anticipated emotion (satisfaction) and is provided through a positive encouraging message to help consumers reduce feelings of uncertainty. This finding provides evidence for our argument. Taken together, we propose the following hypothesis.

H<sub>2</sub>: When hyperopic consumers are under the influence of negative enhancers, the degree of vicious avoidance will be higher than that under the influence of positive enhancers.

## Vicious Avoidance

When making decisions, consumers over-emphasize a macroscopic view of virtue and sense of responsibility that generates reverse self control, and they prefer utilitarian and non-indulgent decisions (Keinan and Kivetz, 2008) as a result. In this study the behavioral tendency towards utilitarian decisions called “Vicious Avoidance”. The central aim of this study is to remedy hyperopic consumption and encourage hyperopic consumers to indulge themselves bravely; remedying the vicious avoidance of hyperopic consumers is achieved by emotional accounting and (positive/negative) enhancers.

To avoid cognitive bias on vicious decisions because of subjective cognition of individuals regarding the degree of vicious decisions, the study has revised the methods of past studies that depended on single events or extreme luxurious behaviors. Respondents were requested to assess the attributes of decisions by themselves based on the attribute scale proposed by Voss et al. (2003) to avoid the influence of cognitive differences between individuals. The study finally defines vicious decisions as having high vicious attributes and low utilitarian attributes; otherwise, it is utilitarian-oriented.

## **Methods**

The study hypothesizes that consumers are born with hyperopia- namely, excessive self-control, depression of desires, do not yielding to hedonic temptations, and make decisions of vicious avoidance to conform to the expectations and constraints of social codes. This study was designed three groups of experimental scenarios to examine the hyperopic consumers, with the aim of helping consumers break away from the influence of reverse self-control problem, and extend emotional accounting and the operant conditioning theory to assist hyperopic consumers to indulge themselves bravely and avoid hurting of their sense of happiness or even generating regret.

In Experiment 1 as the contrast group that tests consumers’ vicious avoidance without any interference, and demonstrates that excessive reverse self-control indeed generates hyperopic consumption. Experiment 2 incorporates emotional accounting and induces hyperopic consumers to start their mental operation before making the decision to slow the generation of negative emotion, make vicious choices, and remedy. Experiment 3 extends behavioral reshaping methods in the operant conditioning theory to reshape hyperopic consumers so that they adopt the expected behavior. With reference to concepts in the reinforcement theory (Skinner, 1971), interference effects are compared by classification into two categories: positive enhancers (positive anticipated emotions) and negative enhancers (negative anticipated emotions).

This study takes online shopping as its setting. Because of the robust growth of e-commerce, consumers have changed their shopping patterns from traditional shops to online stores. Online shopping can truly reflect the shopping habits of consumers. It generates higher cognition risks (Coltman et al., 2001) and uncertainty in decision-making due to its “intangible and sophisticated shopping features”, which can induce consumers to spontaneously collect information on relevant products/decisions or ask reference groups about the product to reduce consumption risks and avoid the generation of regret. This behavioral tendency also supports our decision to select “word-of-mouth” as the enhancer to provide relevant messages to reinforce a consumer’s confidence in decision-making. Enhancers are classified as either positive or negative and used to build mental simulations of counterfactual thinking, forcing consumers to rethink their plans and remedying their hyperopic

consumption.

#### Pretest

To ensure the questionnaire's reliability, analyzed the credibility of the Haws and Poynor's (2008) hyperopia scale in terms of Cronbach's alpha value. In all, 63 respondents were made on a six-point Likert scale (1 = strongly disagree to 6 = strongly agree). The Cronbach's alpha for this scale was .86, indicating high reliability. Content validity was determined based on the researchers' professional ability to subjectively judge if a selected scale could measure a feature correctly. The dimensions and items explored in this study are based on relevant theory. This scale has been used by many scholars both locally and globally. In addition, we carried out a pre-test and performed several revisions before sending out the questionnaire. Thus, the questionnaire should meet the requirement of content validity.

### **Experiment 1: the decision of hyperopic consumers**

#### Participants

The researchers executed Experiment 1 as the contrast group to examine consumers' vicious avoidance without any interference, and demonstrated that excessive reverse self-control generates hyperopic consumption. The subjects were 80 undergraduate students, (with about an equal number of males and females) with online shopping experience and consumption needs participated in the survey.

#### Procedure

Prior to the experiment, the degree of hyperopia of respondents was distinguished based on the hyperopia scale (Haws and Poynor, 2008) (Responses were made on a six-point Likert scale, 1=strongly disagree to 6=strongly agree, and the Cronbach's alpha for this scale was .87). Respondents were then invited to participate on any online auction website (e.g., eBay, Yahoo, etc.). After confirmation of bill payment, respondents were asked to assess the attribute of commodity as utilitarian-oriented or vicious-oriented based on their shopping lists according to the product attribute scale (Voss et al., 2003) (we introduced briefly in the definition of utilitarian and vicious consumption to help respondents answer smoothly). To avoid time pressure, respondents were allowed to take the test at their own speed. Respondents required an average of 10 min to complete the test and were given a small gift after having completed all answers.

#### Results

The average score of respondents in each item was determined as the criteria for degree of hyperopia. To ensure the study's rigorousness, we re-examined the differences in degrees of hyperopia. The Levene test of variance isomorphism did not show significant difference ( $F=2.19, p=.14>.05$ ), indicating that the discreteness of the responses was not significant as well, i.e. variance is isomorphic. High-degree ( $M=5.35$ ) and low-degree ( $M=2.69$ ) achieved statistical significance ( $p<.000$ ), indicating significant difference within the two groups. Since the study mainly aims to analyze the vicious avoidance of hyperopic consumers, the researchers selected

highly hyperopic consumers (n=46) for subsequent analysis to examine whether or not excessive farsightedness generates reverse self-control. In Experiment 1, which had no interference, 69.56% (32/46) of highly hyperopic consumers had vicious avoidance, and the results showed that highly hyperopic consumers prefer utilitarian decisions. In the study, only 30.44% (14/46) of the highly hyperopic consumers made vicious choices ( $\chi^2(1)=9.64, p<.05$ ). Experiment 1 proves that hyperopic consumers indeed have vicious avoidance when making purchase decisions.

On such a basis (the contrast group), the researchers developed Experiments 2 (emotional accounting) and 3 (reinforcement theory). Different interference factors were incorporated into two subsequent experiments to remedy hyperopic consumption. This study systematically remedies consumer behavior through the scientific method and even resorts to reinforcement theory to change people's behavior in order to achieve behavioral shaping, help consumers to make "Right" decisions, and maintain the sales performance of marketing staff, a win-win result.

## **Experiment 2: behavioral effect of the vicious avoidance of hyperopic consumers**

### Method

Experiment 2 helps hyperopic consumers alleviate guilt after making a vicious decision and obtain the rationality and legitimacy of such decisions mainly through the "Laundering Effect" of emotional accounting (Levav and McGraw, 2009) on vicious behaviors. Thus, they become brave enough to indulge themselves and avoid the generation of regret. Before consumers confirm the final plan, the influence of emotional accounting is used to induce hyperopic consumers to start mental stimulation, thereby affecting their purchase decision (Kahneman and Miller, 1986) and making the decision-making process more discreet. It will slow down the generation of negative emotion and then lead to the selection of a vicious decision to achieve the target of remedying the reverse self-control of hyperopic consumers. The study's objects are the general public. To ensure the sample consistency and easily control the number of respondents, the researchers mainly selected students from universities and colleges in Greater Taipei as the study objects to represent consumers in Taiwan.

### Participants

A total of 280 Taiwanese undergraduate students who have online shopping experiences were invited to attend the experiments. The degree of hyperopia was determined according to the hyperopia scale (Haws and Poyner, 2008) (Responses were made on a six-point Likert scale, 1=strongly disagree to 6=strongly agree, and the Cronbach's alpha for this scale was .84), after which consumers were randomly distributed to Scenario 1 (negative emotion) and Scenario 2 (positive emotion). According to Taiwan Council of Labor Affairs' report show that the average monthly income of Taiwanese university students about \$420 USD. Consider the most respondents were university students, therefore, manipulation of emotional account the amount of money on experience of \$42 USD. (An average of 10% of income)

### Procedure



#### Scenario 1 (negative emotion scenario)

An electronic coupon of \$42 USD was unconditional provided (negative emotion), and respondents were requested to spend it through an online auction. After confirmation of bill payment, respondents were requested to assess the attribute of commodities as utilitarian-oriented or vicious-oriented based on their shopping list according to the product attribute scale (Voss et al., 2003).

#### Scenario 2 (positive scenario)

Respondents were first asked whether or not they were willing to take \$42 USD from the income they earned through hard labor as a basic shopping fund. If yes, they could proceed to next steps and were requested to buy things from any online auction. The subsequent steps were same as in Scenario 1.

#### Results

Experiment 2 had 280 respondents, 271 of which were included in the formal analysis after 9 respondents with incomplete answers were removed. Scenario 1 (negative emotion) had a total of 135 respondents. 78 high-degree and 57 low-degree hyperopic consumers were distinguished according to the hyperopia scale (Haws and Poynor, 2008). We carried out further analysis on high-degree hyperopic consumers. Among them, 62.82% (49/78) of the respondents generated vicious avoidance. In this scenario, only 37.18% (29/78) of the respondents would boldly choose vice; the difference achieved statistical significance ( $\chi^2(1) = 10.14, p < .05$ ). In the positive scenario (a total of 136 respondents, including 59 high-degree hyperopic consumers), 42.37% (25/59) were brave enough to indulge themselves and choose vice ( $\chi^2(1) = 6.22, p < .05$ ), nearly 10% higher than in the negative scenario. When high-degree hyperopic consumers were under the scenario of negative emotional accounting, the degree of vicious avoidance was  $M = 4.18$ . That under positive emotional accounting was  $M = 3.54$  ( $t = 5.27, p < .000$ ) achieved statistical significance, indicating that the vicious avoidance of hyperopic consumers under negative emotional accounting is apparently higher than that under positive emotional accounting. The test results support Hypothesis 1.

#### Discussion

Experiment 2 showed how emotional accounting influences vicious avoidance. According to the study results, both negative and positive emotional accounting can induce consumers to generate beforehand thinking, and influences their purchase decisions. Negative emotional accounting has more positive effects than positive emotional accounting, so that consumers have higher vicious avoidance through positive emotional accounting. The findings of this study are opposite those of past studies (Arkes et al., 1994; Bodkin, 1959; Epley and Gneezy, 2007), which showed that consumers are more indiscreet and prefer vicious decisions when handling negative emotion inspires (e.g., windfalls) than positive ones.

This is mainly because hyperopic consumers generate negative emotions, such as guilt, self-accusation, and shame, for money obtained from non-virtuous channels when under negative emotional accounting, and make more utilitarian decisions in order to remove negative feelings, conform to the social codes expected by the public, and alleviate internal self-accusation and discomfort (O'Curry and Strahilevitz, 2001). Such a

compensatory mentality could be explained by the Mood-Repair Hypothesis (Schaller and Cialdini, 1990). When individuals are under negative emotion, they voluntarily adopt strategic actions or decisions to repair their negative mood and alleviate guilt and self-accusation. Positive emotional accounting reinforces the vicious avoidance of hyperopic consumers and makes them avoid the vice more. This demonstrates that alleviating internal burdens and self-accusation is an important factor that influences the judgment and decisions of hyperopic consumers.

When respondents were under positive emotional accounting, 42.37 % ( 25/59) were brave enough to indulge themselves and choose vice, 11.93% higher than in Experiment 1 (30.44%, 14/46). This may be because money obtained through hard labor is considered as a reward or prize, and consumers assign a label of positive emotion to the target. This is different from negative emotional accounting, which brings shame, guilt, and self-accusation to respondents. As a result, consumers are more willing to choose vice and do not feel the pressure of public opinion or the sense of responsibility and mission. The results are also different from those of past studies (Epley and Gneezy, 2007), the study changed past “rigid” impressions regarding consumers’ use of money earned through hard labor.

Past studies often assumed that consumers would cherish the reward obtained from an equivalent value of hard labor or intellect, and rational decision-makers would assess all possible plans before decision-making, choosing beneficial and less-risky plans and opting for utilitarian decisions. Positive emotional accounting induces hyperopic consumers to start mental operations before decision-making, which gives them a “Righteous Reason” (e.g., the reward of hard labor) to choose vice and generates the “laundering effect”, which helps hyperopic consumers alleviate the guilt of choosing vice and obtain the rationality and legitimacy of such choices (Shafir, 1993; Strahilevitz and Myers, 1998). This makes such consumers brave enough to choose vice and realizes the aim of remedying the reverse self-control of hyperopic consumers.

### **Experiment 3: interference effect of different types of enhancers on the vicious avoidance of hyperopic consumers**

#### **Method**

Experiment 3 included four manipulated scenarios: 2 for emotional accounting (positive vs. negative) and 2 for type of enhancers (positive vs. negative). These aim to test whether or not the mental state of respondents could be systematically influenced before decision-making under the interference of different types of enhancers. An additional experiment (experiment 4) was carried out to further understand the effect of reinforcement theory (Skinner, 1971) in guiding consumers to change their behaviors. In Experiment 4, emotional accounting remediation mechanisms was removed before the respondents made decisions and the enhancers were only applied after the respondents had made their final decisions. This experiment aims to understand the influence of interferences at different time points on vicious avoidance. The experiment was similar to experiment 2.

#### **Participants**

A total of 280 respondents with online shopping experiences were selected, and high-degree (n=137) and

low-degree (n=143) hyperopic consumers were determined. High-degree hyperopic consumers were randomly assigned to Scenario 1 (negative emotion + positive enhancers), Scenario 2 (negative emotion + negative enhancer), Scenario 3 (positive emotion + positive enhancer), and Scenario 4 (positive scenario + negative enhancer).

#### Procedure

In Scenarios 1 and 2, an electronic coupon of \$42 USD was unconditional provided (negative emotion scenarios), and respondents were requested to spend it through an online auction. Before bill payment, respondents were requested to assess the attribute of commodities as utilitarian-oriented or vicious-oriented based on their shopping list according to the product attribute scale (Voss et al., 2003). Then, a warning window popped up (start of enhancer remediation mechanisms).

In Scenario 1(negative emotion + positive enhancers), the prompt was *“Choose what you really need. Imagine the satisfaction and pleasure when you have the most avant-garde commodities/accessories. Now you have one more chance to choose again what makes you happier.”* thereby incorporating the positive enhancer with the message of “positive anticipated emotion” and helping consumers reduce their sense of uncertainty through the provision of positive “encouraging” messages. In Scenario 2(negative emotion + negative enhancer), the prompt was *“Listen to the true voice of your heart. Don’t make yourself regret again. Trust me! You are worth it.”*, thereby adding the connotation of negative anticipated emotion and telling consumers that they would regret if they make the wrong decision and find that the plan given up performed better, i.e., affecting the mental state of the respondent by “warning” and inducing them to build the mental simulation that beforehand thinking may generate regret, thus forcing them to rethink their final plan.

Respondents were then allowed to confirm their final choice of commodities in the last 10 min of the session. Those who changed their shopping lists were requested to assess the attribute of commodities as utilitarian-oriented or vicious-oriented again based on their final shopping list according to the product attribute scale (Voss et al., 2003).

In Scenarios 3 (positive emotion + positive enhancer) and 4 (positive scenario + negative enhancer), respondents were first asked whether or not they were willing to take \$42 USD from their income earned through hard labor or savings as a basic shopping fund (positive emotion remediation mechanisms). Those with affirmative answers could proceed with the survey. The subsequent steps in Scenario 3 are identical with Scenario 1, and those in Scenario 4 were identical to those in Scenario 2.

#### Results

This study uses a 2 x 2 (two factor) experimental design. The effect of interference factors (emotional accounting and enhancers) on the vicious avoidance of hyperopic consumers was tested through analysis of variance (ANOVA), and the results are indicated in Table 1.

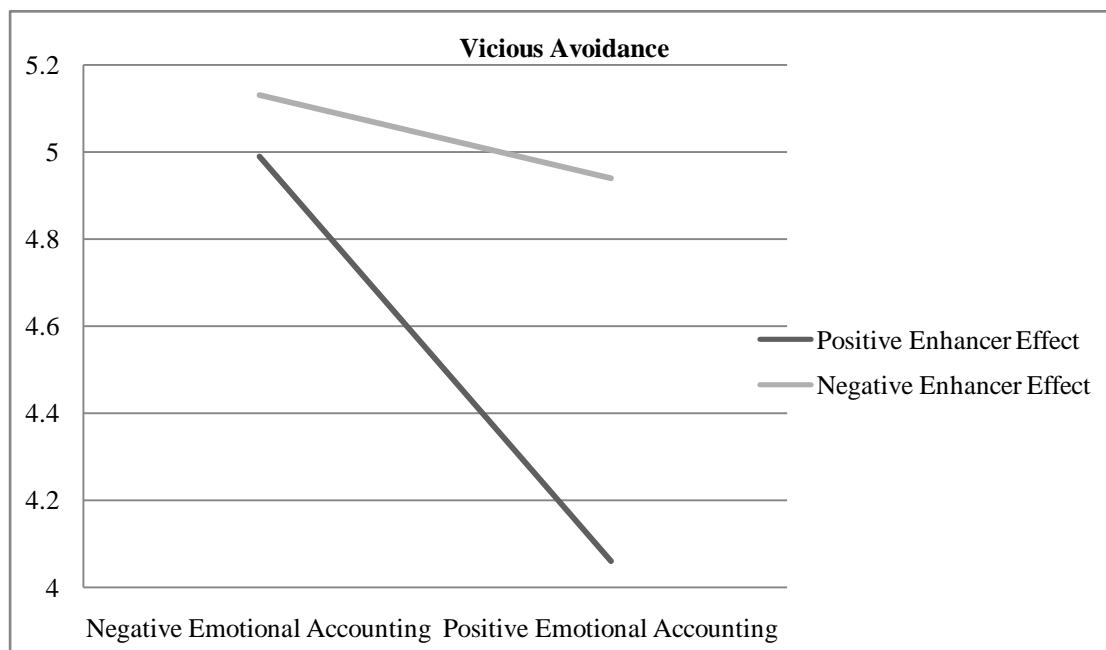
**Table1 ANOVA**

Source of Variation	SS	DF	MS	F-value
Emotional Accounting	5.43	1	5.43	9.75***
Enhancer Effect	6.63	1	6.63	11.90**
Emotional Accounting × Enhancer Effect	2.89	1	2.89	5.19*

R<sup>2</sup>= .24 (Adj-R<sup>2</sup>=.21)

\* p<0.05; \*\* p<0.01; \*\*\* p<0.001

According to the experimental results, emotional accounting and enhancers have interactive effects (F=5.19, p<.05). Hence, a simple effect test was carried out to examine interference effects. According to the analysis, for in both positive and negative enhancer conditions, negative emotional accounting has higher influence on vicious avoidance than positive emotional accounting. The interaction between emotional accounting and enhancers in Fig. 1 also demonstrates that in both negative (4.94vs.4.06) (t=4.84, p<.000) and positive (5.13vs.4.99) (t=3.8, p<.000) emotional accounting, the influence of positive enhancers is higher than that of positive enhancers. The test results support Hypothesis 2 and thus establish it.



**Fig. 1**

Interaction between emotional accounting and enhancer effect on vicious avoidance

### Discussion

Experiment 3 verified yet again that negative emotional accounting generates higher vicious avoidance than positive emotional accounting, indicating that positive emotional accounting was an important mechanisms factor in remedying hyperopic consumers' vicious avoidance and enhancing their choice of vice. Incorporation

of the reinforcement theory into this experiment aims to reshape hyperopic consumers through the behavioral change methodology in the operant conditioning theory and achieve the behavior expected.

As indicated by the study results, 62.82% (49/78) of the respondents originally in the scenario of negative emotional accounting generated vicious avoidance, while only 37.18% (29/78) of the respondents would choose vice. The forty-nine stubborn high-degree hyperopic consumers of vicious avoidance were further randomly distributed to positive enhancers (Scenario 1, n=22) and negative enhancers (Scenario 2, n=27) to examine their changes of consumption behaviors. It was found that positive enhancers could improve the vicious choice by 21.92% and 59.1% (13/22) of the respondents were willing to change their shopping lists to more vicious commodities; negative enhancers improved the situation slightly by 3.56% (40.74%(11/27) respondents changed their shopping list). This operation successfully remedied the reverse self-control of hyperopic consumers and reached the expected effect of reshaping their consumption behaviors. In contrast, 42.37% (25/59) of the respondents originally in the scenario of positive emotional accounting chose vice, positive enhancers (Scenario 3, n=19) 52.63% (10/19) were better than negative enhancers (Scenario 4, n=19) 47.37% (9/19) in remedying consumers' vicious avoidance.

Hence, we know that the reinforcement theory could indeed achieve the effect of behavioral reshaping in remedying the reverse self-control problem of hyperopic consumers, and positive enhancers have better effects than negative enhancers. This demonstrates yet again that, when hyperopic consumers are under the scenario of negative enhancers, the degree of vicious avoidance generated is higher than that of positive enhancers. This result conforms to the early hypotheses of this study.

#### **Extra Experiment 4**

##### **Method**

To examine the interference of enhancers on the vicious avoidance of hyperopic consumers, Experiment 4 was conducted to remove the interference of emotional accounting and avoid the induction of consumers' beforehand thinking which may influence their final purchase decision. Respondents were first requested to search and assess all plans by themselves, since enhancers were applied only after they had decided on a plan.

##### **Procedure**

The experiment also started by identifying 30 high-degree hyperopic consumers based on the hyperopia scale (Haws and Poynor, 2008), asking them to spend a certain sum of money on any auction website and then assess the attribute of commodities as utilitarian-oriented or vicious-oriented based on their shopping list according to the product attribute scale (Voss et al., 2003) after confirmation of bill payment. Prior to confirmation of shopping lists and bill payment, warning windows popped up (start of enhancer interference). Subsequent steps were similar to those in Experiment 3.

##### **Results**

According to the study results, in scenarios without any interference, 70% (42/60) of the respondents preferred utilitarian-oriented decisions and generated vicious avoidance. After enhancement interference before

the final decision, 30% (6/20) of the respondents in the scenario of positive enhancers retained vicious avoidance, while 70% (14/20) changed to vicious choice. This is, at present, the best mechanism of remediation the reverse self-control of hyperopic consumers. In another group with negative enhancers, 54.55% (nearly a half, 12/22) of the respondents changed their original utilitarian choices to vice after the enhancer interference, thus achieving the aim of remediation in this study.

## Discussion

Negative enhancers may generate higher vicious avoidance than positive enhancers because negative enhancers warn consumers that regret may be generated if they make the wrong choice and find afterwards that the plan given up had better performance. Such enhancers also inspire consumers to build a mental simulation of upward counterfactual thinking and feel happy, which induces positive stimulating effects and enhances itself (Roese, 2000). As a result, consumers build confidence regarding their original purchase decisions and then retain their original plan of vicious avoidance.

In contrast, positive enhancers express messages by positive anticipated emotion and make individuals feel happy by providing them with positive encouraging messages and inspiring positive stimulating effects. The inspiring of such emotions is similar to the mental operation of consumers when handling positive emotional accounting. It gives hyperopic consumers a “virtuous” feeling and persuades them to choose vice, alleviates negative emotions, cleanses guilt and has the effect of self-enhancement (Shafir, 1993 ; Strahilevitz and Myers, 1998). Thus, conservative hyperopic consumers become brave enough to choose vice and successfully eliminate reverse self-control in hyperopic consumption.

## General Discussions

The study assumes that consumers are born with hyperopia condition, namely, consumers will try hard to control themselves to conform to the expectations and constraints of social codes, suppress their desires and needs of vicious choice, and develop a tendency for vicious avoidance to prevent the generation of negative emotions. However, Keinan and Kivetz’s(2008) study demonstrates that hyperopic consumers are often influenced by reverse self-control problem when making purchase decisions, i.e., consumers develop a thinking pattern of excessive farsightedness and over-confidence when making decisions to avoid regret and guilt, which will cause serious regret in the long run. They may even admire other shortsighted myopic consumers they once judged as wasteful and luxurious.

This study presents three groups of experimental scenarios of consumption to help hyperopic consumers eliminate the influence of reverse self-control. The study aims to remedy hyperopic consumption and encourage hyperopic consumers to indulge themselves and avoid hurting their sense of happiness or generating regret in the long run. This study examines the effect of remedying vicious avoidance through different combinations of (positive/negative) emotional accounting and (positive/negative) enhancers.

The experiment results finding that any interference before or after consumption could effectively remedy reverse self-control by an average of 20.05%, and achieve the aim of remediation before making the final

decision by encouraging hyperopic consumers with utilitarian orientation to indulge themselves. The stimulating effect of enhancers on consumers who already had a draft plan (31.84%) was 3.4 times higher than on those who had none (9.34%). This may be because when consumers already have a plan, they must have been involved in collecting product information and possess a considerable amount of product knowledge before making the plan; they have consumption needs, but yield to the moral pressure of reality, responsibilities, and public opinion since they are highly hyperopic and are constrained by reverse self-control problem in making the final plan. Thus, they force themselves to make the most suitable choice (or plan) instead of what they love or dream of.

Therefore, the best time to implement an enhancer to remedy hyperopic consumption is when a consumer has already made a draft (after the draft plan). Positive enhancers could provide a righteous reason to persuade hyperopic consumers to choose vice, cleanse guilt, obtain the rationality and legitimacy of such choices, and experience the effects of self-enhancement (Shafir, 1993; Strahilevitz and Myers, 1998). Hence, among all other factors, this is the best mechanism to remedy the influence of reverse self-control among hyperopic consumers.

If consumers have not previously made any draft, manipulating emotional accounting to inspire beforehand thinking and influence purchase decisions may reduce vicious avoidance and improve vicious choices. The effects of both positive and negative emotional accounting, however, are limited. Interference by negative emotional accounting before making decisions can cause hyperopic consumers to generate negative emotions, such as guilt, self-accusation, and shame, since the money to be spent does not come from a proper source. This may thus cause consumers to make utilitarian decisions in order to remove negative feelings, conform to social codes expected by the public, and repair negative emotions to alleviate guilt and self-accusation (O'Curry and Strahilevitz, 2001).

However, such a mental mechanism was influenced by reverse self-control problem. Hyperopic consumers develop a thinking pattern of excessive farsightedness and overconfidence in making decisions in order to avoid regret and guilt, which forces them to prefer utilitarian plans at first and retain vicious avoidance. If positive enhancers are implemented before hyperopic consumers make final decisions, such enhancers offer a righteous reason for consumers to choose vice, appease and cleanse negative mental states of guilt and self-accusation inspired by negative emotional accounting, and help them eliminate reverse self-control successfully. Therefore, firms should avoid causing consumers negative emotions, especially with regard to their shopping funds, before consumption, and should instead induce them to generate positive emotions to help them cleanse their internal guilt and boost their willingness to buy.

If consumers have deep-rooted negative feelings regarding the source of money from the very beginning, the second remediation of positive enhancers could be implemented before a final decision is made; this also has good effects on remediation. The combination of negative emotional accounting (before the draft plan) and positive enhancers (after the draft plan) have the best effects amongst all other scenarios.

### **Implications and Directions for Future Research**

*Give a righteous reason to hyperopic consumers to choose vice .*

This study extends the thoughts of Keinan and Kivetz's (2008) research. After having determined that

hyperopic consumers are indeed influenced by reverse self-control when making purchase decisions, the researchers attempted to remedy the purchase behaviors of such consumers before they made wrong decisions and helped them eliminate reverse self-control. The study found that implementing enhancers to inspire consumers to build beforehand thinking is the best among all mechanisms of remediation. Encouraging positive emotions through positive enhancers causes consumers build confidence and the courage to choose vice.

Since the study uses word-of-mouth as the enhancer, firms could help hyperopic consumers reduce their sense of uncertainty and guilt by providing positive encouraging messages before final decisions are made, thus inspiring positive stimulating effects. They may also provide righteous reasons in such messages that hyperopic consumers lack and need most to persuade themselves to choose vice. These could help hyperopic consumers alleviate their feelings of guilt over vice, thereby changing their purchase decisions to more luxurious and hedonistic ones and improving customer satisfaction while bringing more benefits to such firms.

*Seize the proper time to start remediation mechanisms and manipulate the mental state of consumers.*

The study found that implementing remediation after consumers already have a draft plan is more effective than none. This is because consumers who already have a plan must also have consumption needs and may be regarded as quasi-consumers. They must have been involved in the collection of product information and possess a considerable amount of product knowledge before making their purchase decision. However, they yield to the moral pressure of reality, responsibilities, and public opinion, since they, as highly hyperopic consumers, are possibly constrained by reverse self-control problem when making their final decision. If a firm understands the contradictory consumption psychology of hyperopic consumers, they could inspire the actual needs of consumers for a product by marketing mix, such advertisements, promotions, or provision of trial products, and then start a series of remediation mechanisms to induce consumers to make the “right” decision.

If a firm could manipulate the thoughts of consumers regarding shopping funds, it could make use of the emotions of such consumers on money obtained from different sources to influence their subsequent decisions. Inducing consumers to generate positive emotions on their money could also help hyperopic consumers alleviate the guilt of choosing vice, and achieve the aim of remediation. This does not mean that remediation is a failure if it inspires negative emotions. Immediately implementing second remediation mechanism using enhancers could also help hyperopic consumers eliminate reverse self-control problem. The integrated effect of remediation could produce more customers and profits for the firm.

The study aims to remedy the reverse self-control of hyperopic consumers and adopts emotional accounting and the reinforcement theory to remedy hyperopic consumption and achieve behavioral reshaping. It helps hyperopic consumers release themselves by launching a series of remediation mechanisms that may be applied at different time points. It is recommended that subsequent studies explore the feasibility of other methods of remediation. This study examines the reverse self-control of hyperopic consumers from the perspective of self-control. It is recommended that future research measure the degree of self-control of respondents, and examine the differences and correlations between hyperopia and self-control to expand hyperopia studies.



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