

How Do Counterfactual Reference Prices Stimulate the Selling Willingness for Secondhand Products

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From the reference price point of view, owners hesitate to sell their belongings due to the sharp contrast between the original purchasing prices and the prevailing secondhand market prices. We propose that owners' willingness to sell their belongings can be increased via triggering their counterfactual thinking of the future lower prices and stimulating anticipated regret. By three experimental studies with electronic products, we find that providing consumers with the present price of previous generation or just telling consumers they will be informed of future prices of their belongings can significantly increase consumers' intention to sell.

INTRODUCTION

Selling their products in the secondhand market is one way for consumers to dispose their used commodities. By selling their used products, consumers could have monetary gains, avoid wasting, and create more room in their house (Chu and Liao, 2010). Moreover, due to the technology advancement, it has become easier for consumers to post information about their used products online, bargain on the prices and trade them efficiently. For consumers, a disposition decision is related with closing a mental account. Closing an account is usually perceived to be more important than opening an account because it determines how successfully an individual manages his mental account (Prelec and Loewenstein, 1998; Soman and Gourville, 2001; Zhu, Chen and Dasgupta, 2011). One judges the value based on gains or losses instead of the final states (Kahneman and Tversky, 1979). As discussed by Prelec and Loewenstein (1998), the selling price decides whether the mental account is closed at a gain or loss, thus a consumer might be very cautious closing an account especially when it brings sunk cost (Arkes and Blumer, 1985; Moon, 2001).

Not all consumers close their account successfully. For instance, one might regret while realizing he should have sold his secondhand cell phone earlier and at a higher price after he has put it aside for quite a long time. Consumers are found to behave irrationally that they hold a depreciating item for a longer time and eventually realize it at a floor price, which violates the expected utility theory (Friedman and Savage, 1948; Keeney, 1993). In the high-tech industry, the pace of product replacement is accelerating

and thus the prices of any models, especially for the used ones often depreciate quickly. Consumers might hesitate to sell their used ones even when they have already got newer models, or they usually ask a price which is much higher than the price offered by a buyer. For example, Horowitz and McConnell (2002) find that selling prices are three times higher than selling prices. On the other hand, laggards in the market would be expecting to purchase their aspired items at lower prices in the secondhand market, since companies tend to put the old generations off the shelf in order to protect the sales of the newly launched products. Possible aftermaths include social welfare loss, resource waste, and environmental harm (Babu, Parande and Basha, 2007; Hicks, Dietmar and Eugster, 2005).

As explained by the endowment effect, sellers tend to demand more than buyers' willingness to pay because parting with ones' possessions may result in psychological pain (Kahneman, Knetsch and Thaler, 1990; Thaler, 1980). As losses often loom larger than gains (Kahneman and Tversky, 1979), sellers demand higher price as compensation for what they lose. Following this logic, as one's emotional attachment with the products increases, he will experience more psychological pain parting with the products, thus will have a higher willingness-to-accept (WTA) price (Ariely, Huber and Wertenbroch, 2005; Brough and Issac, 2012).

An alternative explanation for the price gap between seller and buyer is made from transaction disutility perspective (Thaler, 1985). In a seminal work conducted by Weaver and Frederick (2007), they posit that sellers decide their WTA price according the good's reference price, which is much higher than the buyers'. When the seller perceives the market price to be lower than the good's reference price in the seller's heart, he will feel subjective unfairness. Thus, with reference to some apparent memory-based or market reference prices, like the initial purchasing price or price for a new one, the perceived loss would discourage the owner from closing a "loss" account.

Despite prior literature in understanding consumers' evaluation propensity of their owned products, little empirical work has been done on how to effectively encourage or guide owners to sell their currently unbroken but no-longer-in-use belongings. In this paper, we seek literature to design several patterns of "imaginary" reference price configurations to offset the more available references for consumers to recalculate their mental accounts. Specifically, we propose that incorporation of counterfactual thinking and anticipated regret could effectively increase owners' willingness to sell. We report three studies to test the hypotheses.

CONCEPTUAL FRAMEWORK AND HYPOTHESIS

Sunk Cost Effect and Reference Points

"Sunk cost" has long been established in psychological literature. Researchers demonstrate that decision makers often take past expenditures into account when making decisions (Arkes and Blumer, 1985; Moon, 2001). In the context of secondhand market, a decision maker usually considers the initial price or the mental book value when making a selling decision, which violates classical assumption of rationality and marginal utility theory (Okada, 2001). For electronic products, due to fast upgrading pace, the discrepancy of current secondhand market price from a reference point is often huge, which results in their reluctance to sell their used products.

Expected Future Price

A consumer's expectation of the future price of a product plays an essential role in consumer's purchase timing decision (Jacobson and Obermiller, 1990; Koopmans, 1960). "Neither past nor expectations of current prices plays a role in intertemporal utility function...Past prices or expectations of current price come into play only to the extent that they influence expectations about future prices" (Jacobson and Obermiller, 1990: 422). In particular, the forward-looking consumer evaluates the cost/benefits of purchasing now versus purchasing at a future time. Similarly, in the context of secondhand market, a potential seller also assesses the benefit of selling his product which has been used for a period right now or postponing the sale by a time period. A potential seller's willingness to sell increases with the differences between the current price and the expected future selling price of the used product.

Consumers are forward looking only under certain conditions: when the purchase is considered postponable, or when price is a concern and the future price can be estimated (Jacobson and Obermille, 1990). For the first argument, it is safe to say that forward-looking decision making is applicable to sellers in the secondhand market. Different from purchasing which is to satisfy the current unfulfilled needs, sellers would be more possibly to postpone the act of selling. In terms of price concerns, individuals value their currently owned products and regard the decision whether to sell used products as important because it is associated with closing a mental account. Thirdly, for the availability of future price estimation and consumer's propensity, consumers can be provided with information to estimate the future price and can implicitly or explicitly be guided to look prospectively (Conlon and Garland, 1993). It is also demonstrated in behavioral economic literature that a reference point does not necessarily reflect the status quo, rather, it is an individual's probabilistic beliefs about outcomes and one tends to be loss averse around the expected outcome (Ericson and Fuster, 2011; Knetsch and Wong, 2009; Köszegi and Rabin, 2006). When a potential seller in the secondhand market looks prospectively, he may form his personal expectations of the outcome and then compare the offer with the expectation. Presenting the downward price trend and sharp price disparity may lead individuals to look forward and predict price to continually go down, which may further foster their willingness to sell. Therefore, we propose that:

H1a: Presenting the declining price trend of the seller's product in the secondhand market increases his willingness to sell his used product.

However, it should be also noted that sellers behave differently from buyers. For instance, while buyers mentally construe the products in a low level construe, focusing on feasibility-related aspects and do not differentiate strongly between the primary and secondary goals, sellers construe the products in a high level construe, focusing on desirability-related and central aspects of the products (Irmak, Wakslak and Trope, 2013). Studies on investors' behavior also find that investors in stock market tend to ride losers too long (disposition effect), which results in deeper losses. Though the price dynamics of the goods in the secondhand market are different from those of stocks, such disposition effect reflects a general tendency among the owners. Furthermore, Frazzini (2006) points out that disposition effect can induce under-reaction to news. It is possible that consumers do not react to the externally exerted information about the downward price trend of their owned products, thus presenting the declining trend of price of the products in the secondhand may not make individuals more willing to sell their used products. Therefore, H1b as opposed to H1a is proposed that:

H1b: Presenting the declining price trend of the seller's product in the secondhand market does not increase his willingness to sell his used product.

Counterfactual Thinking

Counterfactual refers to imaginations which are contrary to the past outcomes (Roese, 1997), and counterfactual thinking means constructing and using "alternatives to reality" (Boninger, Gleicher and Strathman, 1994: 297). Via counterfactual thinking, individuals can learn where they have gone wrong, moreover, they can also learn how they can improve in the future (Boninger, Gleicher and Strathman, 1994). Recent studies take a further step by demonstrating people also anticipate potential counterfactuals, which is also termed as prefactuals (McConnell et al., 2000), or counterfactual anticipations. When making decisions, individuals tend to construct several possible worlds and compare the outcomes in these possible worlds. For instance, before making a purchasing decision, a consumer might compare the costs and benefits if the product is purchased with the costs and benefits if the product is not purchased. Nowadays the fast-paced product replacement results in the presence of multiple generations of products, especially for electronic products. Though a company may intentionally make the older generation off the shelf, the previous generation of a product is transacted in secondhand market and consumers still have an access to learn about its price.

Presenting the current price of the previous generation may elicit sellers to think counterfactually, and make the sellers anticipate potential prefactuals. When consumers are presented with the current price of the previous generation of their owned products in the secondhand market, they may associate the information of previous generation with the product at hand. In specific, by reflection, they may simulate the situation that if they do not sell their products now, their used product would undergo the same fate as its previous generation. Therefore, through counterfactual thinking, individuals learn that if they do not sell their used products timely, the value of their used products will go down even lower, and the imagined future lower price might be also serve as a reference price. Thus, they may form a more reasonable judgment of the value of the used product with less referring to the initial purchasing price. Accordingly, we propose:

H2: When the seller is presented the current price of the previous generation of his used product, he exhibits a higher willingness to sell his product.

Anticipated Regret

One of the counterfactual anticipations is anticipated regret, which is believed to have influences on decision making behavior. For instance, consumers tend to avoid option which is associated with salient counterfactual regret (Hetts et al., 2000). Simonson (1992) suggests that consumers' choices between alternatives can be systematically influenced by asking them to anticipate the regret and responsibility they would feel if they made the wrong decision. He finds that individuals would be more willing to buy an item on sale straightaway instead of waiting for a better sale when they are asked to anticipate their feeling if they miss the current sales. Whether a decision maker expects post-decisional feedback on rejected alternatives has a profound influence on the decision they make (Zeelenberg, 1999). When individuals are made aware that they will get feedback in the future after decision, they will show a tendency to avoid future regret (Cooke, Meyvis and Schwartz, 2001). Such regret minimizing strategies can be so strong that even make them turn to riskier option, which overrides risk aversion (Zeelenberg, 1999). People will select the riskier option when they learn they will get feedback of riskier option regardless of which option they choose, but will also get feedback of the safer option if they choose the safer option (Zeelenberg et al., 1996). Said differently, people prefer riskier options to avoid learning feedback of the safer option which might result in feelings of regret (McConnell et al., 2000).

In terms of secondhand market, consumers who intend to sell their used product often register on various websites and thus have access to information such as price and successful transactions about the ongoing market. Logically, the price of used products in the market will drop. Thus, when potential sellers on the secondhand market know they will be informed about the future price of their used products, the expected feedbacks of future lower prices would stimulated sellers' anticipation of how regretful they would be if they keep their products instead of selling them earlier. In order to avoid such regret, they might be more willing to sell their products at that time being. Thus, we propose that:

H3: Expecting the feedbacks of ongoing secondhand prices of the seller' product increases the seller's willingness to sell by increasing anticipated regret.

STUDY 1

Study 1 tests H1a and H1b. Specifically, participants imagined they were looking to sell their used but still functioning mobile phone. One group of participants were showed the secondhand market price changing trend in the past year while the other group were not. Then they rated their willingness to sell his mobile phone and estimated the price in six months.

Method

Seventy-four undergraduate and graduate students from a major Chinese university participated in this study. Participants were randomly assigned to each condition and were involved in task making hypothetical selling decisions. In both conditions, they were firstly asked to imagine they had bought a smart phone two years ago at ¥4500, which gave them great enjoyment. Recently the company launched a new, better and upgraded smart phone. A very intimate friend of them sent them the upgraded phone so they decide to sell the used one. After investigating the price in secondhand market, they learnt that the current price is ¥1760. In the treatment condition, we additionally provided the price trend of their product in secondhand market during the past year (i.e., from January to December, 2012).

When participants finished reading the scenario, they were asked to assess their willingness to sell and the likelihood they would sell their used phone, using 7-point scales. On the other side of the paper, they were asked to estimate the secondhand price in six months. Participants then filled out regret propensity scale (Schwartz et al., 2002), a 7-point scale that measures how individuals deal with decision situations after a decision has been made, specifically the extent to which they are likely to compare and experience regret (e.g. Once I make a decision, I don't look back).

Results

To test H1a and H1b, the authors compare the expected future price and willingness to sell between the two groups. Can presenting the declining price trend of individual's product in secondhand market make an individual exhibit higher willingness to sell their products right now? The answer is no. Declining price trend has no significant effect on participant's expectation of future price ($P_{\text{price trend}}=1164$, $P_{\text{control}}=1299$; $p>0.1$). Similarly, participants in the condition with declining price trend and two prices (initial purchase price and current secondhand market price) exhibited comparable levels of selling intention ($M_{\text{price trend}}=4.38$, $M_{\text{control}}=3.77$; $p>0.1$).

Discussion

It worth noting that consumers just watch the price of their "endowed" products to decline but still choose not to sell them right away. The outcomes seem in accord with findings reported by Shefrin and Statman (1985), which suggest that investors in stock market tend to ride losers too long (disposition effect), which results in deeper losses. Consumers who see the market price to decline are better to sell it now than later if being rational, what it is found out here is that they were under-reacted to external information, which is consistent with Frazzini (2006)'s finding proposing that disposition effect induces under-reaction to news. In light of reference point perspective, it might be that presenting the past price trend reinforces the reference point (e.g. initial purchase price), which make them hesitate to sell.

STUDY 2

In Study 2, the authors provided information about the current price of previous generation which is thought to be less explicit than the information in Study 1, aiming to explore whether this kind of information will have a positive effect on one's selling intention.

Method

Six participants failed to complete both phases of the study, resulting in a final sample size of seventy one students from a major Chinese university. Subjects were randomly assigned to one of two conditions in a single-factor between-subjects design which resembled Study1. In Study 2, instead of providing participants with information of past price trend, we presented them the current secondhand market price of the previous generation of their products, e.g. participants not only knew the initial price (¥4500) and current secondhand market price (¥1760) of or his products (e.g. iPhone 5), they were also aware of the price of secondhand iPhone 4 (¥550) in the market. Other measures were the same as those in Study 1. Participants then indicated their willingness to sell and completed Schwartz et al. (2002)'s regret

propensity scale.

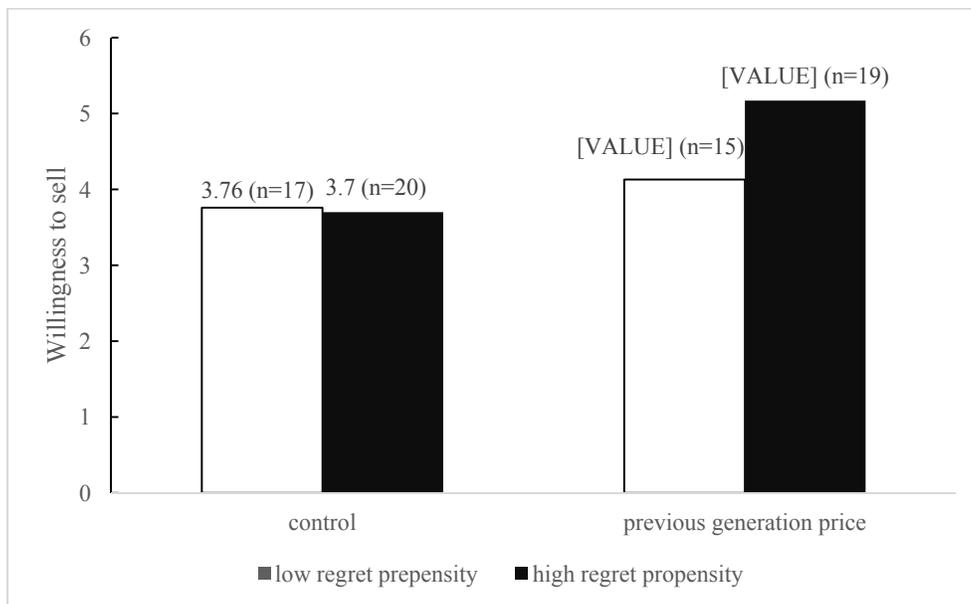
Results

Participants who were provided with current price of previous generation estimated their product's price in six months significantly lower than those in the control group ($P_{\text{previous-generation price}} = 1017$, $P_{\text{control}} = 1317$; $p < 0.05$). Accordingly, they showed significantly higher mean scores on willingness to sell ($M_{\text{previous-generation price}} = 4.97$; $SD_{\text{price of previous generation}} = 2.02$) compared with the control group ($M_{\text{control}} = 3.73$, $SD_{\text{control}} = 2.2$); $p < 0.05$). T-test after log-transformation of all the price estimates consolidated our results ($p < 0.1$).

Moderating Effect

We averaged items measuring how individuals deal with decision situations after the decision has been made, specifically the extent to which they experience regret (Cronbach's $\alpha = 0.769$, $M_{\text{regret}} = 3.90$). Basing on participants' self reported regret propensity ratings, we divided the participants into two groups: high regret propensity (≥ 3.90) and low regret propensity (< 3.90). We then conducted 2 (previous generation price: yes vs. no) \times 2 (regret propensity: high vs. low) ANOVA test. The results showed that regret propensity moderated previous generation price's effect on willingness to sell. For those who were more likely to compare outcome of their own choice with unchosen alternatives and thus experience regret after making a choice, presenting price information on previous generation leads to higher willingness to sell ($M_{\text{control \& high regret}} = 3.70$, $M_{\text{previous generation price \& high regret}} = 5.17$; $p < 0.05$) than those had low regret propensity ($M_{\text{control \& low regret}} = 3.76$, $M_{\text{previous generation price \& low regret}} = 4.13$; $p > 0.1$).

FIGURE 1
MODERATING EFFECT OF REGRET PROPENSITY ON WILLINGNESS TO SELL



Discussion

Study 2 shows that H2 is verified. Presenting current price information of previous generation decreases individual's expected future secondhand marketing price for his owned product, and has a positive impact on willingness to sell. The moderating effect of regret tendency extends our understanding of effect of presenting previous generation's price information on willingness to sale. Those who are inclined to compare outcomes of alternatives thinking about "what might be" after getting the result

exhibit a higher willingness to sell in face of price information of the previous generation.

STUDY 3

Study 2 suggested that anticipating regret before making a decision as a personal trait might influence consumer's sell intention. In Study 3, we attempted to make "regret" explicit by telling them they would get feedback about future prices of their belongings.

Method

Seventy five undergraduate and graduate students from a major Chinese university participated in this study and seventy three subjects completed it. Subjects were randomly assigned to feedback condition and control condition. The difference between feedback condition and control condition lies in that subjects in feedback condition were also told they would get feedback about the future price from an authoritative online forum.

Manipulation Checks

As we expected, those in feedback condition perceived the probability being regretful observing price changes (i.e., they believe it likely that they will be regretful when observing the price changes) higher than those in control condition ($M_{\text{feedback}}=3.28$, $M_{\text{control}}=2.41$; $p<0.05$). This confirms our anticipated regret manipulation via expected feedback is successful.

Hypothesized Effects

Will the participants who were told to get feedback later exhibit a higher willingness to sell? The answer is yes. Feedback condition participants estimated a higher willingness to sell his used mobile phone than control condition participants ($M_{\text{feedback}}=4.64$, $M_{\text{control}}=3.84$; $p<0.1$).

Discussion

The result from study 3 confirms H3. As we predict, individual's willingness to sell his used products is increased when he anticipates how regretful he will be learning the feedback afterwards. There might be two underlying mechanisms. First, people sell their products at the moment to minimize future regret. Consistent with Zeelenberg et al. (1996), when people learn that they will get additional feedback of their choice if they choose to keep their products, they tend to sell the product right now. The second mechanism is that when people anticipate regret in the feedback condition, they feel more responsible for the decision they make. This line of thought is consistent with Simonson (1992), who states that consumers feel greater regret and more upset with themselves if they wait and find out they missed a better deal.

GENERAL DISCUSSION

Our paper concerns with an important issue pertaining to mechanism to promote owner's intention to sell their products. Theoretically, the findings contribute to the existing literature in several aspects. Across the three studies, the authors use counterfactual price to reduce people's backward consideration and increase their willingness to sell, which suggests other than internal and external reference prices, counterfactual prices also have impact on individual's decision-making process. Study 1 demonstrates that watching the price to decline will not make an individual sell his product right away to avoid potential loss, which suggests "seeing is not believing". Combining Study 2 and study 3, the findings suggest that owners' willingness to sell their belongings can be increased via stimulating anticipated regret, without presenting any information regarding the future price. It is consistent with previous findings which suggest that people adopt regret minimizing strategies and feel more responsible for their decisions when they anticipate future regret.

Since this study focuses on solving real-life problems, it makes several important managerial

contributions. Nowadays in China, with the development of E-business and online retailing, secondhand platforms sprang up. On those platforms, consumers first provide information about their secondhand product and then get an overall evaluation score followed by a recycling price offer. Despite company's efforts in encouraging consumer to take this price, this study suggests subtly guiding consumers themselves to anticipate an outcome and draw a conclusion may sometimes work more effectively. Moreover, since e-mail marketing has been long established as communication strategy by companies, the feedback manipulation is feasible for companies to implement. Though the research setting is electronic product market, the findings can be extended to other markets as well. Besides electronic products, product replacement and upgrading are common across various other product categories, for instance, home appliances, cars and membership cards, even seasonal clothes.

However, this paper also has several potential weaknesses. First, compared with lab experiments, a field experiment may be a better way to derive seller's selling intention in real markets. Second, the mechanism underlying anticipated regret and willingness to sell deserves further study. As discussed above, it may be that individuals who anticipate how regret they will be tend to feel more responsible for their decisions, or it may be that they want to minimize the regret by choosing to sell their products.

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