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Journal of Interactive Marketing 27 (2013) 47 – 61

JOURNAL OF INTERACTIVE MARKETING

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Thinking or Feeling the Risk in Online Auctions: The Effects of Priming Auction Outcomes and the Dual System on Risk Perception and Amount Bid

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Available online 11 November 2012

Abstract

The present research sheds new light on the antecedents and outcomes of bidders' perceived risk. It examines the role of the two-system model in the context of activating the potential to either win or lose an online auction. This study demonstrates that when a bidder's *affective system* is primed, concern about losing the item is greater and ultimately the bid amount is higher when the bidder expects to lose rather than win. Conversely, when the *cognitive system* is primed, the anticipated goals of winning the auction – rather than the fear of losing – drive the bidder's actions. In the latter case, the bidder pays a higher amount if the expectancy of winning is primed, as opposed to the expectancy of losing. A field study on eBay and two lab studies confirm this phenomenon.

Keywords: Perceived risk of losing; Two-system model; Online auctions

Introduction

There is something about playing a game or participating in a contest when you let your emotions get involved in your decision. Whether it is playing football, or trying to win tickets on eBay for your favorite singer's one-night-only concert in your city, getting emotional seems to be accompanied with the fear of losing, resulting in behavior which is guided to avoid such a risky consequence. But is this just an exercise in anxiety provocation or does it lead to specific behavior? Alternatively, it seems that when you think clearly and calmly, you can focus more narrowly on the task of winning the auction and act accordingly to do so. Focusing on the purchase situation, is it likely that when a consumer's affective system is primed, that emphasis on the possibility and risk of not winning the item, motivates a greater intention to purchase than envisioning actual purchase? Similarly when one's cognitive system is primed, does the consumer focus more on the steps needed to win the auction as a motivator of purchase than the fear of losing?

In this research, we examine purchase decisions within the context of online auctions. One of the unique features of online auctions is that most online parties (i.e., bidders and sellers) remain anonymous and transactions between parties are of an impersonal nature (Kim 2005; Resnick and Zeckhauser 2002). This anonymity imposes high uncertainty into the nature of online auctions that gets translated into concern as to what needs to be done to win or alternatively to avoid losing, increasing the bidders and sellers perception of risk. Kim, Ferrin, and Rao (2008) find that perceived risk has a strong impact on online purchasing decisions due to other factors such as security concerns and the information quality of the website. Thus how to effectively manage bidders' risk perceptions is an essential issue in online auctions.

The current research aims to shed new light on the antecedents and outcomes of bidders' perceived risk. Perceived risk is strongly associated with winning or losing expectations at the pre-auction

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1094-9968/$ -see front matter
http://dx.doi.org/10.1016/j.intmar.2012.09.001

stage, that is the point at which one enters the auction (Ariely and Simonson 2003; Möllenberg 2004); and with the bidder's intrapersonal factors of cognitions and feelings (Finucane et al. 2000; Harless and Camerer 1994; Loewenstein et al. 2001; Luce and von Winterfeldt 1994; Slovic, Flynn, and Layman 1991; Starmer 2000). In this research we focus on the mediating role of perceived risk on bidding behavior, when bidders either expect to win or lose the auction, and on how these expectations are either driven by cognitions or feelings. We propose that cognitions or feelings trigger different processes that influence the nature of the linkage between outcome expectancies, perceived risk and bidding behavior. We highlight these processes and elaborate on the importance of the interplay between these factors (i.e., outcome expectancy, perceived risk and the cognitive and affective systems) in determining the resulting behavior.

Outcome expectancy, (i.e., whether one wins or loses the auction) is conceptualized as the aggregation of individual belief elements in a consumer's cognitive structure and is a precursor in predicting a variety of phenomena involved in buying behaviors and subsequent perceptions (McKinney, Yoon, and Zahedi 2002; Olson and Dover 1979; Yen and Lu 2008). For example, bidders who consider bidding on a product enter a situation with various expectations ranging on a probability continuum from "certain not to occur" to "certain to occur" (Oliver 1981).

We propose that under the cognitive system, which is goal-based, deliberate, and rule governed (Evans 2008; Kahneman and Frederick 2002), perceived risk is positively linked to the desire to win the auction. On the other hand, we suggest that under the affective system, which is spontaneous, intuitive, and emotion based (Epstein 1994; Evans 2008), fear of losing the auction drives perceived risk. We further suggest that for each system, outcome expectancy, namely, the bidder's focus on the prospect of winning or losing, can influence perceived risk. Accordingly, we propose that perceived risk will differentially mediate the bidding behavior in online auctions when the bidder's cognitive or affective system dominates.

The popularity of Internet auctions has led to the expansion of various bidding strategies (Bapna et al. 2004), which are the product of the bidders' internal orientation and the external cues present in the auction (Kamins et al. 2011). Indeed attempts have been made to develop an integrated model designed to predict bidding behavior in Internet auctions, focusing on whether potential bidders bid on an auction, (if so) who bids, when they bid, and how much they bid (Park and Bradlow 2005). Although this model contributes greatly to the auction literature by creating an integrated probabilistic model to explain these factors, the authors acknowledge that the model does not address "a fundamental understanding of the 'why' in bidding behavior," nor, with some exceptions (Heyman, Orhun, and Ariely 2004; Kamins et al. 2011; Ku, Malhorta, and Murningham 2005), has "why" been the focus of most of the research in the auction literature. This research is designed to address this knowledge gap.

Some papers have shown, both in live and in Internet auctions, that when competitive arousal, or "auction fever," is engaged, consumers are willing to pay prices exceeding up to seven times the original estimate in order to obtain the good (Ku, Malhorta, and Murningham 2005). When asked to explain their overbidding behavior, individuals often supplied such responses as "auction fever took over." Heyman, Orhun, and Ariely (2004) provide theoretical explanations for such "emotional bidding" behavior anchored in what they call "Quasi-Endowment" effects and "Opponent Effects." That is, being the highest bidder during the auction triggers a sense of ownership, which makes losing all the more distasteful. Regarding the "opponent effect," the fact that auction participants typically refer to the result of the auction as "winning" or "losing" as opposed to "buying" and "not buying" is not surprising, as they respectively either vanquish their opponents or are defeated by them.

Because research has shown information external to the auction (e.g., the number of viewers, the number of bidders, bidder identification) influences bidding behavior, information internal to the auction (e.g., presence of a reserve or minimum bid) has importantly been shown to have the same effect (Ariely and Simonson 2003; Rafaeli and Noy 2002). Hence this research examines whether cues internal to the auction itself (i.e., in the product description) can induce emotional or cognitive bidding behavior simply by activating these decision states in the context of making salient the consequence of either winning or losing the auction and whether or not making either consequence salient matters in terms of bidding behavior and risk perceptions. Such an approach has significant managerial implications for the seller as well as the buyer, because certain conditions (e.g., triggering how losing the auction would make one would feel) should motivate higher bids, making the auction more attractive to the seller than to the buyer.

In our studies, we focus on actual bidding behavior on eBay (study 1) as well as on the pre-auction phase (Ariely and Simonson 2003; Möllenberg 2004), in which the bidders rely mostly on outcome expectations (studies 2 and 3). In general, the purpose of each study is to prime either the cognitive or the affective system as well as trigger each consumer's expectation of winning or losing the item. The objective is to measure the bidders' perception of risk and their willingness to pay for the item. We now discuss in greater detail outcome expectancy, the two-system model and its relationship to perceived risk.

Outcomes Expectancy in Online Auctions

The classic Expectancy Theory (Vroom 1964) proposes that a person will decide to behave in a certain way due to what he or she expects the result of that selected behavior to be. The effect of expectancies on behavior was also found to be contingent on the nature of the goal (Shah and Higgins 1997), so that different goals generate different perceptions and actions (Lynch and Cohen 1978). Interestingly, outcome expectancies were also found to influence physiological measures (Ladouceur et al. 2003). Ladouceur et al. (2003) found that high as compared to low expectations of winning generated faster heart rates prior to and during the actual experience. According to self-reports, it is the expectancy of winning that is exciting, not the actual experience.

Outcome expectancy is therefore expected to play a major role in online auctions (McKinney, Yoon, and Zahedi 2002; Olson and Dover 1979; Yen and Lu 2008), by triggering different

bidding strategies. For example, Yen and Lu (2008) indicate that both bidders' expectation of policy and auctioneers' performance of policy are important determinants of disconfirmation. However, the effect of outcome expectancy of winning or losing the auction, on perceptions of risk and on bidding behavior, under the cognitive or affective systems has not yet been examined. This research addresses this effect.

Perceived Risk

Consumers' decision processes are generally influenced by their perceptions of the gravity of the risk they face (Carvalho et al. 2008; Forsythe and Shi 2003; Loewenstein et al. 2001; Mitchell 1999; Slovic 1987). Studies have found perceived risk influences consumers' attitudes and behaviors generally (Carvalho et al. 2008; Rao and Farley 1987; Srinivasan and Ratchford 1991; Tat Keh and Sun 2008) and specifically (online shopping behavior; Kim, Ferrin, and Rao 2008).

Research has also explored possible drivers for perceived risk; such drivers include environmental factors, e.g., financial loss (Ho and Ng 1994) or advanced technology (Pavlou 2003), interpersonal factors, e.g., seller–buyer relationships (Valla 1982) social norms (Mitchell 1999), and intrapersonal factors, e.g., personal experience (Slovic, Fischhoff, and Lichtenstein 1980) or individuals' feelings and cognitions (Loewenstein et al. 2001). Within the context of online shopping, studies show that perceived risk is a function of perceived privacy and security protection, information quality, and degree of familiarity with the website (Kim, Ferrin, and Rao 2008), particularly as a function of regulatory focus and website content (van Noort, Kerkhof, and Fennis 2007, 2008).

Choice under risk has been among the most researched topics in studies on judgment and decision making (Loewenstein et al. 2001). The basic assumption in this line of research is that most people are generally risk averse, normally preferring a sure thing to a gamble yielding equal expected value, and preferring a gamble of low variance over a riskier prospect (Kahneman and Lovallo 1993). Stone and Winter (1987) view perceived risk as an expectation of loss. The higher one's certainty is that a loss will occur, the greater the perceived risk. Kim, Ferrin, and Rao (2008) define perceived risk in online shopping as a consumer's belief about the potential of uncertain negative outcomes.

Following this reasoning in the context of the online auction, we propose that bidders will perceive risk to be greater when the perceived certainty of winning an item is lower, such as when they expect to lose the item. In this case, bidders can overcome the perception of risk by placing higher bids, which will increase the probability of winning the auction. We can therefore infer that the expectancy of losing or winning an item plays a major role in determining a bidder's perception of risk in an online auction and one's consequential bidding behavior.

Prior research has also examined the roles of feelings and cognitions as determinants of the perception of risk (Finucane et al. 2000; Kim, Ferrin, and Rao 2008; Loewenstein et al. 2001). For example, the expected-utility stream of research, which focuses on the cognitive drivers of perceived risk, proposes that the interplay between outcome expectancy and subjective probability generates the perception of risk (Harless and Camerer 1994; Luce and von Winterfeldt 1994; Slovic, Flynn, and Layman 1991; Starmer 2000). According to this research stream, feelings are also involved, but they result from the cognitive evaluation of risk. In contrast, other evidence suggests one's emotional state may influence one's perception of risk (Loewenstein et al. 2001; Simon 1967). For instance, Simon (1967) indicates emotional reactions serve as a mechanism to interrupt and redirect cognitive processing toward potentially high-risk situations.

Within the context of online shopping, the affective-based antecedents found to drive perceived risk are related to indirect interactions with the trustee, such as inputs from others, e.g., trusted third-party seal, referral, review comments and recommendations (Chen, Chen, and Meindl 1998; Kim, Ferrin, and Rao 2008; McAllister 1995). The cognitive determinants, on the other hand, were associated with consumers' observations and perceptions, e.g., concerning information quality, perceived privacy protection, security protection, brand image, fancy design and regarding the features and characteristics of the trustee entity (Chen, Chen, and Meindl 1998; Kim, Ferrin, and Rao 2008; McAllister 1995).

The current research relies on Stone and Winter's (1987) and Kim, Ferrin, and Rao (2008) definitions of perceived risk (where risk is a function of the concern of loss), and integrates these two types of drivers of perceived risk – winning or losing expectancy and dominance of the affective and cognitive systems (as we elaborate in the next section) – and examines their joint effect on the perception of risk and on ensuing behavior.

Before we discuss in detail the integrative effect of these factors, we first describe the underlying drivers of the cognitive and affective systems.

The Cognitive and Affective Systems

The distinction between cognition and emotion has been the topic of much prior research and has been examined under many different frameworks and perspectives, including but not limited to the following: system 1 versus system 2 processes (Kahneman and Frederick 2002), associative versus rule-based systems (Sloman 1996), non-verbal versus verbal processes (Paivio 1986), hot versus cold systems (Metcalfe and Mischel 1999), and the dichotomy of information processing. Epstein (1994), for example, posited that individuals apprehend reality through two interactive, parallel processing systems. The rational system, deliberative and analytical, functions under the control of logic and probability. The experiential system encodes reality in images, metaphors, and narratives. It functions under the influence of affects, such as fear, anxiety, and happiness.

Evans (2008) notes all these theories seem to have common ground, and proposes that systems 1 and 2 can be framed as a distinction between two types of processes: type 1 processes consist of fast, automatic, or unconscious processes, whereas type 2 processes are generally slow, effortful, and conscious (Samuels 2006). Evans further proposes that type 2 processes correlate with individual differences in cognitive capacity and can be disrupted by concurrent working memory load. Moreover, type 2 processes can be associated with executive processes and intentional, higher-order control.

Each of the frameworks proposed above can therefore be characterized as a function of different underlying processes, deliberative or affective, and each process can lead to different choices and preferences (Wang 2006; Wilson et al. 1993).

In the context of interactive marketing, Bosnjak, Galesic, and Tuten (2007) examined the effects of cognitive and affective facets of involvement and Zaichkowsky (1994) on the intention to shop online. The facet of cognitive involvement has strong common ground with type 2 processes because it relies on the perceived functional and essential characteristics of the product. On the other hand, affective involvement derives from hedonic and symbolic expectations, and therefore is in line with type 1 processes. The current research extends this examination by considering the role of the cognitive and affective systems in determining the perception of the risk of a decision and the consequent behavior.

The Proposed Hypotheses

We examine the effect of the cognitive and affective systems in conjunction with an expectation of winning or losing, because outcome expectancy plays a major role in the pre-auction phase (Ariely and Simonson 2003; Möllenberg 2004). Specifically, each system is expected to trigger a different path of influence between winning or losing expectancy, perceived risk and bidding behavior. Thus, the cognitive and affective systems are expected to moderate the indirect effect of outcome expectancy via perceived risk on bidding behavior.

We propose that the affective and cognitive systems rely on different mechanisms that drive the perceived risk of losing an auction. We further propose that, depending on which system is more dominant, individuals respond differently when asked to consider the outcome of winning or losing an auction; specifically, people show opposite tendencies in terms of the direction of perceived risk and the amount bid in the online auction.

The Affective System

Research has found that the affective system elevates perceived risk via the emotional state of fear (Lerner and Keltner 2001). Specifically, Lerner and Keltner (2001) indicate fearful people express pessimistic risk estimates and risk-averse choices. In addition, anticipated loss enhances the emotional state of fear (Delgado, Labouliere, and Phelps 2006). Therefore, assuming that a losing-expectancy orientation may enhance the perception of risk is logical.

In the context of online auctions, we expect priming the expectancy of losing an auction to elevate the emotional state of fear. Thus, if we consider a case in which bidders approaching an online auction are predisposed to rely on the affective system, we expect priming the bidders' losing expectancy orientation to enhance their fear of losing the auction and therefore their perceptions of risk. As a result, to mitigate the risk of losing the auction, bidders using an affective system are expected to place high bids. In contrast, we expect priming these bidders' winning expectancy orientation to attenuate or even eliminate the emotional state of fear and thus generate a lower perception of risk which will, in turn, lower bids.

Operatively, the proposed hypotheses rely on the priming procedure as a means of elevating the affective and cognitive systems, as well as the losing or winning outcome expectancies. Past research frequently used the priming procedure in the context of priming affective and cognitive systems (Fabrigar and Petty 1999; Yi 1990) or the winning or losing mindsets (Aaker and Lee 2001; Higgins et al. 1994; Jain, Agrawal, and Maheswaran 2006). Specifically, the affective system may be activated simply through awareness of an environmental stimulus (Loewenstein and O'Donoghue 2004; Metcalfe and Mischel 1999). For example, the death of a major movie star or singer often induces feelings of sadness and grief, triggering the affective system. Such situations may evoke sudden attachment-based needs to own something associated with that individual. The death of Michael Jackson and Whitney Houston provide recent examples of such a phenomenon. Many of Jackson's and Houston's older albums reached the top of the charts again for a brief period following the singers' deaths.

In this research, we use an environmental stimulus to activate the affective system (as well as the cognitive system), that of the product description of the auctioned item. For example, in the description of an item put up for auction on eBay, we supply an emotionally charged cue such as "How would you feel if you were to lose (win) this item?"

In sum, we would expect that when the affective system is activated, bidders will be susceptible to a stimulus that invokes fear (concern about losing the item). Thus, they are likely to place higher bids when asked to imagine how it would feel to lose the item as opposed to how it would feel to win the item.

The Cognitive System

We expect a different effect to occur among bidders who are influenced primarily by the cognitive system. Research has found that the cognitive system accesses perceived risk via calculative processing of the chances of winning and the expected value from gaining the auctioned product (Loewenstein et al. 2001; Starmer 2000). The cognitive system is assumed to increase accessibility of one's overall intentions and goals (Evans 2008), which, in the context of online auctions, typically involve winning the auction. Therefore, we propose that cognitive bidders are encouraged to act toward achieving such accessible objectives. To prime the cognitive bidder to think about these objectives, one can incorporate into the product description a statement regarding the expected outcomes of the auction, such as the possibility of winning or losing the item.

When the expectancy of winning the item is elevated and the cognitive system is activated, we expect the bidder to systematically plan the steps required to achieve his or her goal. The logical bidding behavior in this case may include placing higher bids in order to win the item. Novemsky and Kahneman (2005) posit that in the context of the perceived risk of losing, focusing on the benefits of possessing the item may increase the perceived risk of the consequence of losing, as opposed to drawing attention to other aspects of the transaction. Therefore, counter intuitively, we expect bidders to experience greater concern about losing the item and to place higher bids when their focus is product oriented,

for example, when thinking about the potential of winning the product rather than about the possibility of losing.

We anticipate that as in the case of the affective system, the manner in which outcomes are framed will determine bidding behavior and perceived risk. However, we anticipate that priming the cognitive system will result in opposite behaviors compared with priming the affective system. Thus we expect that when the cognitive system is primed, the perceived risk of losing the item will be heightened and consequently bidders will place higher bids when their expectancy is based on winning rather than losing the auction. We put forward our expectations within the following hypotheses:

H1. When the affective (cognitive) system is activated, the offered[1] bid will be higher (lower) when a losing – as opposed to winning – expectancy orientation is primed.

H2. When the affective (cognitive) system is activated, the perceived risk of losing the auction will be higher (lower) when a losing – as opposed to winning – expectancy orientation is primed.

H3. Perceived risk of losing mediates the effect of the affective or cognitive system and a winning- or losing-expectancy orientation on the offered bid.

We conducted three experiments to test our hypotheses. The first study examined the first hypothesis in a field setting, considering the actual bids. The second study took place in the lab and further explored the second and third hypotheses using a moderation-mediation model. Finally, the third study sheds more light on the underlying mechanism by investigating the effect of winning- or losing-outcome expectancies along with different cognitive-load conditions on perceived risk and the actual bid placed when the cognitive system is cued.

Study 1: Field Study

The purpose of the field study was to demonstrate the proposed effects of priming the cognitive or affective system and the winning or losing orientation in a real-life online auction setting. Accordingly, we conducted the field study on the online auction site eBay from March till June of 2010. We ran four different conditions of actual auctions featuring identical products. In each auction, we used the product description to activate either the affective or cognitive system together with either a winning- or losing-outcome expectation.

Method

We conducted 97 eBay auctions, each featuring a set of two different Indian Pennies dated between 1890 and 1907. All of the pennies were of the same grade (good-4 using a standard numismatic scale and the judgment of one of the authors who doubles as a professional numismatist) and were each valued between $1.75 and $2.25 in *Coins* magazine. Because we had 16 different dates (which we purchased at coin shows), we divided the coins into eight different potential pairs. Four pairs included only coins dated in the 1900s (e.g., 1901 and 1904), and four included only coins dated in the 1800s (e.g., 1891 and 1898). We kept these eight different pairs constant throughout the experiment and randomized them within each experimental condition to make sure that for each condition over time, we offered different items (different pairs of dates) to buyers. We did so to prevent boredom and to avoid the tendency to fill the market's needs quickly by constantly offering the same dates for sale. The product description for each pair of coins included an introductory sentence that emphasized one of the following: (a) how the bidder would feel if he or she won or (b) lost the item ("How would you feel if you were to win (lose) the item?"); or alternatively, (c) the steps the bidder would have to take to win or (d) lose the item ("Think of the steps required that you will need to take to win (lose) the auction."). Descriptions (a) and (b) were aimed at priming the affective system of decision processes under winning- and under losing-expectancy orientations, respectively, whereas descriptions (c) and (d) were designed to prime the cognitive system under winning- and under losing-expectancy orientations, respectively. We pre-tested the perception of these descriptions[2] and the extent to which they primed affect.[3] The remainder of the item description was identical across conditions. Finally, to eliminate postage and handling as a confounding influence on the results, the description stated the seller would pay these costs. All coins were sold by a single seller, who attained a positive feedback rating on eBay of 100%.[4]

The research design was a 2×2 factorial in which two independent variables were manipulated (i.e., winning- vs. losing-expectancy orientation and affective vs. cognitive priming conditions). In total, 47 auctions used an affective condition; in 24 of these auctions, the product description included text that alluded to the possibility of losing the auction, and in 23 of these auctions, the product description alluded to the possibility of winning the auction. We used a cognitive condition in 50 auctions, of which 25 included a product description that alluded to winning the auction, and 25 included text that alluded to losing

[1] Note that in study 1 involving eBay auctions, the actual bids of which the highest served as the final price were recorded.

[2] Fifty three participants volunteered to complete the pre-test (58% female, $M_{age}=31$). We assigned participants randomly to four cells: reliance on the affective system and winning or losing expectations, reliance on the cognitive system and adoption of a winning- or a losing expectancy orientation. As expected, ANOVA analysis revealed a significant main effect for participants' affective or cognitive bidding strategies ($F_{(1,49)}=6.05$, $p<.01$). Thus, the difference in the reported reliance on the affective over the cognitive system was positive under the affective condition and negative under the cognitive condition ($M=1.60$ vs. $M=-1.06$, respectively), across winning or losing expectation conditions. In addition, we found a main effect for participants' reported winning- over losing-expectancy orientation ($F_{(1,49)}=20.21$, $p<.05$). In this case, the difference in the reported winning over losing expectations was positive under the winning condition and negative under the losing condition ($M=3.18$ vs. $M=-1.09$, respectively), across affective or cognitive conditions.

[3] A pre-test among 87 participants (43% female, $M_{age}=42$) revealed that those who were primed under the affective condition reported on higher scores in the PANAS scale ($M=2.60$) than those who were primed under the cognitive condition ($M=2.16$, $t(85)=3.66$, $p<.05$).

[4] According to Brown and Morgan (2008), negative feedback is rare on eBay and the median seller enjoys 100% positive feedback.

the auction. Each auction ended in a completed purchase, and the coins were shipped to the winning bidder upon receipt of payment to the seller (one of the authors). The dependent measure was the closing price for each of the auctions. We also collected information about the number of bids placed in each auction as a control variable.

Results

Final Price

An ANOVA of the final price as a function of the winning-/losing-expectancy orientation and affective/cognitive orientation revealed a significant two-way interaction effect ($F_{(1,94)}$= 11.25, $p<.002$). The means and standard deviations of final price as a function of the cognitive and affective systems and the orientation of winning or losing expectancies for the auction are presented in Table 1.

Supportive of H1, under the affective condition, participants in the loss-expectancy orientation condition placed higher bids than did participants under the win-expectancy orientation condition (mean final price (M)=$6.31 vs. M=$4.30, $t_{(45)}=3.67$, $p<.005$). Conversely, under the cognitive condition, participants under the loss-expectancy condition placed directionally lower bids than did participants under the win-expectancy orientation condition (M=$3.45 vs. M=$4.29); this difference was not significant, however ($t_{(45)}=1.65$, $p>.1$).

The interactive effect remained significant ($F_{(1,89)}=39.96$, $p<.001$) when we included the number of bids as a control variable. The latter had a significant main effect on the placed bid ($F_{(1,89)}=29.23$, $p<.001$).

Discussion

The field study findings demonstrate that the framing of identical items in terms of how one would feel upon winning or losing the item can affect how bidders on eBay presumably value the item. Specifically, bidders placed higher (lower) bids in eBay auctions when asked how they would feel if they lost (won) the item they bid on. These effects reflect participants' responses to activation of the affective system coupled with emphasis on an unfavorable (favorable) auction consequence. However, activating the cognitive system by asking bidders to think of the steps necessary to win (lose) the auction did not have a significant differential effect on the final bid.

Table 1
Means and standard deviations of final bid as a function of the cognitive and affective system conditions and the winning- or losing-expectancy orientations (study 1).

	Mean price ($)
Cognitive system	
Winning orientation	4.29 (2.28)
Losing orientation	3.45 (0.87)
Affective system	
Winning orientation	4.30 (1.48)
Losing orientation	6.31 (2.18)

Inclusion of the number of bids as a control variable facilitates ruling out possible alternative explanations that may explain the interactive effect of the affective/cognitive system and losing/winning expectancies on the placed bid. For example, a plausible alternative explanation for a main effect of winning (vs. losing) would be that in the winning conditions, the amount of bids was higher. Prior research demonstrated the number of bids actually drives up the final bidding price, in which case, the assertion that the product description explains variance in the final price becomes questionable. Our findings show that although the number of bids has a main effect on the placed bid, the interactive effect also remains significant, lending doubt to this alternative explanation.

A possible explanation for the directional but non-significant effect under the cognitive system may rely on the extent of cognitive resources available to the bidders. Zeng, Cox, and Dror (2007) proposed that without agents, the bidders are most likely to experience cognitive overload problems. This proposition is supported via a short survey the authors conducted among bidders in online auctions (n=54), using Amazon Turk, which reported on significantly lower agreement (compared to mid-scale M=4, $t(53)>2.7$, $p<.05$) with the average of the following two statements: "Generally, over the course of an auction in which I have placed a bid": (a) "I hate to be distracted" (M=3.41), and (b) "I find it difficult to do other things during the auction" (M=2.81). It is therefore reasonable to assume actual online auctions require significant amounts of cognitive load, leaving the bidders with few resources to activate the cognitive system. As Evans (2008) proposed, the cognitive system relies on cognitive capacity and can be disrupted by concurrent working memory load. Overall, high cognitive load is believed to disrupt more conscious, controlled processing without disrupting the affective system, which consists of non-conscious, automatic processing (Gilbert, Pelham, and Krull 1988). Hence we might expect to find stronger support for H1 in a situation in which participants are under less intensive cognitive load. Subsequent lab experiments in this manuscript address this topic.

The results of footnote 3, which address the average score of the PANAS scale, provide additional support to the nature of cognitive and affective processing in online auctions. The low scores suggest that under the affective priming condition, there was more of a salient induction of non-systematic processes than a considerable activation of emotions (such as fear). Thus, priming bidders to rely on their feelings while bidding may simply shift their focus from activating controlled and deliberative processing to activating less planned processing.

Because of the nature of eBay, we were not able to ask winning bidders about perceived risk, the focus of H2. Asking would have required a voluntary response to a query after the bidding had ended, an approach we have not had much success with in the past. In addition, the nature of eBay also prevented us from controlling the cognitive load under which bidders engaged in the auction. The next studies therefore aim to provide additional evidence about the process measures underlying the effects in more controlled settings. The studies are lab experiments that explore the mediating role of the perceived risk of losing in determining the amount of the bid placed (study 2), as well as the effect of cognitive load on perceived risk and on the amount bid (study 3).

Study 2: Integrated Lab Experiment

The aim of the second study was to reveal the underlying mechanism that accounts for the opposite effects on bid amount that occur when the cognitive versus the affective system is activated coupled with a winning- versus a losing-expectancy orientation. We conducted this study in a laboratory setting with both scenario- and simulation-based questionnaires; hence the bids placed reflect an intention as opposed to an actual real-world bidding commitment. Other marketing studies have successfully used the scenario approach (Dabholkar 1994; Swinyard 1993). Under this approach, we presented participants with a description of the online auction, and subsequently asked them to place a bid on the item offered for sale and then to answer a set of questions. The simulated online auction has also been successfully used in published research (Noy, Raban, and Ravid 2006; Rafaeli et al. 2003) and in the marketing context (Kamins et al. 2011). The online auction simulation in the current study was configured to operate in an English-auction setting so that the auction proceeded in ascending form and the bidders' identities were transparent to other competitors. Participants were asked to place an intended bid during the simulation, and the process closed with a set of questions that included a scale measuring subjects' perceived risk of losing the auction. Appendix A presents a snapshot of the screen used in the simulated online auction.

Method

Participants

One hundred and seventy-two participants volunteered to complete the study (42% female, $M_{age}=39$). We assigned participants randomly to four conditions. Specifically, we manipulated two between-subject factors, creating a 2 (winning vs. losing expectancy orientation) × 2 (affective vs. cognitive system) matrix.

Procedure

We introduced participants to the study and told them they would be participating in an international survey on bidding behaviors. We also explained the study would present them with a specific bidding scenario or bidding simulation followed by a set of questions. Then participants were exposed to a product offered for sale in an auction. The product's presentation included a photo and a short description of its characteristics. The product was an Israeli coin of 500 piasters (100 piasters equal an Israeli Pound) from the year 1946. A pre-test among 80 participants indicated the involvement (using Zaichkowsky Personal Involvement Inventory scale) toward this specific coin is relatively high ($M=4.54$ vs. mid-scale of 4, $t(79)=2.89$, $p<.05$).

As noted, we used four different conditions that we conveyed through the product descriptions. Thus, along with the product details, and in line with the procedures used in the eBay study, the product description included text that instructed the participants to imagine how they would *feel* if they won (lost) the item, or to *think* of the steps required to win (lose) the item. The previous manipulations were designed to prime the affective system from a winning (losing) perspective, whereas the latter were designed to similarly activate the cognitive system. Participants were then asked to indicate how much they were willing to pay for the item. After they specified this value, and before they were told if the amount they were willing to pay would have been enough to win the item, they were given a list of questions regarding their concern regarding the risk of not specifying a high enough value, resulting in a loss of the item. Specifically, they were asked to rate their concern on a 9-point scale (1 stands for low risk and 9 stands for high risk). The "offered bid" amount across subjects also served as a second dependent measure.

Results

We examined the effects of the cognitive and affective systems, and of the expectancy orientation for winning or losing, on the dependent measures of the "willingness to pay" and the perceived risk of losing. The means and standard deviations of these measures are presented in Table 2.

Offered Bid

As predicted, an ANOVA of the offered bid (i.e., the standardized amount of the bids given in the simulated auction and scenario based study) in NIS as a function of winning-/losing-expectancy orientation and affective/cognitive system activation revealed a significant two-way interaction effect ($F_{(1,170)}=13.37$, $p<.0005$). Supporting H1, under the affective condition, participants under the loss-expectancy orientation condition offered significantly higher bids than did participants under the win-expectancy orientation condition (mean bid (M) = .92 NIS vs. $M=.38$ NIS, $t_{(86)}=2.94$, $p<.01$). Conversely, under the cognitive condition, participants under the loss-expectancy orientation condition were willing to offer significantly lower bids than did those under the win-expectancy condition ($M=.55$ NIS vs. $M=1.21$ NIS, $t_{(82)}=2.41$, $p<.025$).

Perceived Risk of Losing

An ANOVA on the perceived risk of losing the item in the online auction as a function of the winning-/losing-expectancy orientation and affective/cognitive orientation also revealed a significant two-way interaction effect ($F_{(1,170)}=13.52$, $p<.0005$). Supporting H2, under the affective condition, participants under the losing-expectancy orientation reported significantly higher perceived risk of losing the item than did those under the

Table 2
Means and standard deviations of the standardized offered bid and risk perception as a function of the cognitive and affective system conditions and the winning- or losing-expectancy orientations (study 2).

	Offered bid (NIS)	Risk perception
Cognitive system		
Winning orientation	1.21 (1.60)	5.90 (2.02)
Losing orientation	0.55 (0.77)	4.71 (2.03)
Affective system		
Winning orientation	0.38 (0.67)	4.61 (2.42)
Losing orientation	0.92 (1.01)	5.87 (2.16)

winning-expectancy orientation (average rating (M) = 5.87 vs. M = 4.61, $t_{(84)}$ = 2.60, p < .025). In contrast, under the cognitive condition, participants under the losing-expectancy orientation reported a significantly lower perceived risk of losing than did those under the winning-expectancy orientation (M = 4.71 vs. M = 5.90; $t_{(82)}$ = 2.63, p < .025).

Moderation Mediation Analysis

We examined the moderating role of the dual system (i.e., priming thinking or feeling) on outcome expectancy (i.e., expecting to lose or win the auction) in determining the willingness to pay via the mediating role of risk perceptions. The hypothesis regarding the mediating role of the perceived risk of losing was confirmed. Using bootstrapping moderation mediation tests (Preacher, Rucker, and Hayes 2007) with 5000 replications revealed that perceived risk of losing significantly mediated the effects of the dual system and outcome expectancies. When losing expectancy was primed, the affective system increased risk perceptions and the willingness to pay; therefore, the indirect effect was positive (95% CI: .09 to .66). Alternatively, when winning expectancy was primed, the affective system negatively mediated the willingness to pay (95% CI: −.73 to −.09).

Discussion

The findings of study 2 demonstrate the moderating effect of the two-system phenomena in determining the indirect effect of expected outcome of the auction on the amount participants were willing to pay for a product via the mediating variable of perceived risk of losing the item.

For participants in the affective condition, this study replicated the findings of study 1 (the eBay study). Thus, for these participants, the amount bid and the perceived risk of losing were higher under the losing-expectancy orientation condition than under the winning-expectancy orientation condition. Conversely, for participants in the cognitive condition, the bid was higher under the winning-expectancy orientation than under the losing-expectancy orientation. Thus the lab study showed a significant effect, whereas the eBay study conducted in the field showed only a directional trend. Participants in the lab study indeed reported a greater perceived risk of losing the item when imagining the steps necessary to win it. In line with the cognitive-load explanation, participants in the lab setting likely had many more available resources than did participants in the field setting. As mentioned earlier, in field settings, many distractions may occur during the online auction, such as phone calls, people around the bidder, and emails. These distractions do not exist in lab settings; therefore, in theory the entire capacity of cognitive resources is fully available to be attuned to the experiment. We propose that the resources explanation may account for the discrepancy between the results of study 1 (i.e., a directional effect only) and those of study 2 (i.e., a significant effect). Therefore, the final study sheds further light on cognitive load as an interruptive factor of the underlying mechanism.

Study 3: The Attenuating Effect of Cognitive Load

The third study examined the effect of winning- or losing-expectancy orientation as a function of cognitive load on perceived risk and the actual bid placed when the cognitive system is cued. Like study 2, this study consists of online questionnaires. However, the online auction was presented on a screen similar to the eBay platform, with dynamic features (such as the number of bids, time left until the end of the auction, and so on) with the intention of increasing the external validity of the findings regarding behavior in an online auction.

This study manipulated the degree of cognitive load participants were subjected to while engaging in the auction. Specifically, it focused on priming the cognitive system and its available resources. In the eBay study, we believed the effect of cognitive load attenuated the effect of the cognitive system. However, the apparent availability/unavailability of resources did not seem to affect bidders under the affective system, which is not surprising, because this system relies on non-conscious and automatic processes (Evans 2008). We aimed to replicate and extend the findings of study 1 in a lab setting in which we could control the cognitive-load conditions. Thus we examined participants under a high-cognitive-load condition in which they did not have accessible cognitive resources.

Based on prior research (Lee, Amir, and Ariely 2009; Lieberman et al. 2002; Siemer and Reisenzein 1998), we expected participants in the high-load condition, whose cognitive capacities were constrained by additional tasks, to rely *more* on their emotional responses over the course of the auction. Thus, if greater perceived risk and higher bids are indeed elevated when one expects to lose when relying on the affective system, participants in the high-load condition should similarly report enhanced perceptions of risk and place higher bids compared to participants in the low-load condition, essentially acting as if they were affectively driven bidders.

In this study, we manipulated the cognitive load in two ways: (a) a general cognitive-load manipulation, which is not related to the online auction, under which the bidders are engaged in an unrelated task, such as memorizing a list of words; or (b) a task-specific cognitive-load manipulation, which is related to the online auction, such as memorizing the number of bids placed every 20 s during the auction. We chose to manipulate the cognitive load in two ways, because the first type of cognitive-load manipulation, which is in line with how prior research induces high cognitive load (Drolet, Luce, and Simonson 2009; Lee, Amir, and Ariely 2009), may not capture the load required during an online auction. That is, it may completely block the cognitive capacity of the bidders in too comprehensive a manner; this manipulation may not imitate the cognitive constraints during bidding in a realistic manner. Therefore, we further included a cognitive-load manipulation that focuses on the activities that occur during the course of the online auction, which may deprive the bidders' capacity to fully rely on their cognitive resources.

This study further aimed to examine the association between outcome expectancy versus a manipulation of regulatory states, which might be offered as an alternative explanation for our findings. According to the regulatory-focus stream of research,

consumers are driven by either the prevention orientation or the promotion orientation (Higgins 1997). According to the regulatory-focus principles, promotion orientation is both striving for a gain and avoiding a non-gain, and prevention orientation is both striving for the avoidance of a loss and achieving a non-loss (Jain, Agrawal, and Maheswaran 2006; Liberman et al. 1999). Arguably, framing the outcomes in terms of winning is similar to the activation of the promotion orientation of striving to "achieve gains," under which consumers operate to achieve their hopes and aspirations. Similarly, framing the outcomes in terms of losing may be equivalent to inducing a prevention orientation of striving to "avoid losses," under which consumers prefer not to take a risk and therefore maintain the status quo. This study investigated this possible association.

In this study, as in the previous studies, the winning- and losing-expectancy orientations were induced within the auction itself as part of the item description. The target product offered in the auction in this study was a dual USB port car-charger adapter. We expected to replicate the proposed effects beyond the specific product offered for sale in the auction.

Method

Participants

Two hundred and forty-nine participants volunteered to complete the study (50% female, $M_{age}=35$). We assigned participants randomly to six cells. Specifically, we manipulated two between-subject factors, thus creating a 3 (general cognitive load vs. task-specific cognitive load vs. no cognitive load condition) × 2 (winning vs. losing expectancy orientation) matrix. In addition, for all cells, we cued the cognitive system through the auction text, as described above in previous studies.

Procedure

We exposed participants to one of three different versions of instructions. Those under the general cognitive load manipulation were introduced to the study and told that they would be participating in two unrelated tasks. The first task was described as a memory task. The second task was described similarly to the tasks in the prior studies, as being part of an international survey on bidding behaviors. The general cognitive-load task involved a memory-load manipulation, as noted (Drolet, Luce, and Simonson 2009). The load manipulation involved having participants memorize a list of 20 words to be recalled later during the study session. They were given 2 min to memorize the words and were asked to do so during the auction (the second task). After completing the online auction and its related questions, participants in the general load condition were asked to recall as many of the words they could.

Those under the task-specific cognitive-load manipulation were exposed only to the second task, but we instructed them to memorize information related to number of bids placed during the online auction. The task-specific cognitive-load task was presented within the introduction to the online auction task. We asked participants in this condition to memorize the number of bids placed during the auction in each period of 20 s. After completing the online auction and its related questions, participants in the specific load condition were asked to report the number of bids in each session of 20 s. For example, we asked them to complete the following sentence: "In the first session of 20 s, ___ bids were placed." Finally, we placed no constraints on the cognitive load of those under the no-load manipulation.

In the specific bidding scenario, we asked all participants presented with the product to place a bid, and then asked them to answer a set of questions. The product offered for sale in the auction was a dual USB port car-charger adapter. Its presentation included a photo and a short description of its characteristics, as presented in Appendix A. Along with the product details, the headline of the product description (in larger font) asked the participants either to think about what would happen if they won the item or to think about what would happen if they lost it.[5] The former question aimed to induce winning expectations and the latter to induce losing expectations while cuing the cognitive system. As noted above, in an attempt to represent a realistic bidding scenario, the online auction screen had dynamic features.

The price participants were willing to pay and the perceived risk of losing the auction were measured as in the prior study and served as dependent measures.

Finally, using a measure proposed by Higgins et al. (1994) and employed by Sengupta and Zhou (2007) and Steinhart and Wyer (2009), we asked participants to complete a regulatory focus scale so we could assess their promotion and prevention motives. Specifically, we asked participants to rate on a 9-point scale (1 = *strongly agree*, 9 = *strongly disagree*) the importance of each of 14 self-descriptive items, equal numbers of which reflected an emphasis on positive consequences of behavior (e.g., being smart, making new friends: promotion motives) or avoidance of negative consequences (e.g., ensuring personal safety at night, not looking unfashionable: prevention motives). We averaged responses to each set of items to provide separate estimates of promotion and prevention motivation.

Results

We examined the effects of the cognitive-load conditions and the expectations of winning and losing on three dependent variables: offered bid, perceived risk of losing, and regulatory focus orientation. The means and standard deviations of these measures are presented in Table 3.

Offered Bid

An ANOVA on the offered bids as a function of winning-/losing-expectancy orientation and cognitive-load condition revealed a significant two-way interaction effect ($F_{(2,243)}=4.20$,

[5] A pre-test among 47 participants examined the effect of the statement "think of the auction outcomes" on the extent of reported reliance on the cognitive or affective system. Specifically, we used the same manipulation-check items as used in the pilot study. As expected, we found reliance on the cognitive system to be stronger ($M=6.11$) than reliance on the affective system ($M=4.81$, $t_{(46)}=2.59$, $p<.025$).

Table 3
Means and standard deviations of the offered bid, risk perception, and regulatory focus as a function of the winning- or losing-expectancy orientations and the cognitive-load conditions (study 3).

	Offered bid ($)	Risk perception	Promotion focus	Prevention focus
No cognitive load				
Winning orientation	107.91(93.01)	2.49 (1.91)	4.04 (1.31)	4.08 (1.58)
Losing orientation	70.80 (51)	1.78 (1.29)	3.88 (1.66)	4.32 (1.87)
General high cognitive load				
Winning orientation	66.61 (52.53)	1.80 (1.25)	3.90 (1.50)	4.12 (1.81)
Losing orientation	99.62 (87.18)	2.37 (1.34)	4.11 (1.57)	4.35 (1.80)
Specific high cognitive load				
Winning orientation	99.74 (108.9)	2.41 (2.05)	3.46 (1.85)	3.45 (2.16)
Losing orientation	98.1 (86.64)	2.08 (1.72)	4.44 (1.39)	4.27 (1.42)

$p<.05$). Under the general high-cognitive-load condition, participants under the loss-expectancy orientation condition offered higher bids than did participants under the win-expectancy orientation condition (average final price (M)=$96.69 vs. M=$66.61). We found this difference to be significant ($t_{(105)}=2.193$, $p<.05$), which is in line with the predictions related to relying on the affective system rather than the cognitive system. Conversely, under the no-cognitive-load condition, participants under the loss-expectancy orientation condition offered significantly lower bids than did those under the win-expectancy orientation condition (M=$70.80 vs. M=$107.95; $t_{(83)}=2.24$, $p<.05$); this result is in accordance with H1. Finally, under the task-specific cognitive-load manipulation, we found the difference between the amount of bid offered in the loss-expectancy orientation condition and the win-expectancy orientation condition (average final price (M)=$98.10 vs. M=$99.74) was not significant ($t_{(55)}<1$). Thus the task-specific cognitive-load manipulation attenuated the effect of the cognitive system but did not reverse it as the general cognitive-load manipulation did.

The interactive effect remained significant when we included the bidder's age as a controlled variable or the bidder's gender or socio-economic status. Specifically, none of the controlled variables ($F_{(1,243)}=1.75$, $p>.1$, $F_{(1,243)}<1$, $p>.1$, $F_{(1,243)}<1$, $p>.1$, respectively) had a significant main effect on the bid amount.

Perceived Risk of Losing

An ANOVA on the perceived risk of losing the item in the online auction as a function of the winning-/losing-expectancy orientation and cognitive load condition also revealed a significant two-way interaction effect ($F_{(2,241)}=3.46$, $p<.05$). Under the general high-cognitive-load condition, participants primed for a losing-expectancy orientation reported significantly higher loss aversion compared with participants primed for a winning-expectancy orientation (average rating (M)=2.37 vs. M=1.80, $t_{(105)}=2.26$, $p<.05$). That is, the general cognitive-load manipulation reversed not only the effect of the cognitive system on the amount of bid placed for the product, but also the effect of the cognitive system on the perceived risk of losing the item. On the other hand, under the no-cognitive-load condition, participants primed for a losing-expectancy orientation reported a lower perceived risk of losing than did participants primed for a winning-expectancy orientation (M=1.78 vs. M=2.49; $t_{(83)}=1.99$, $p=.05$), an effect statistically consistent with that predicted in H2. Finally, under the task-specific cognitive-load manipulation, we did not find the difference in the reported perceived risk between the loss-expectancy orientation condition and the win-expectancy orientation condition (M=2.41 vs. M=2.08) to be significant ($t_{(55)}<1$). Thus, as in the bid analysis, the task-specific cognitive-load manipulation attenuated the effect of the cognitive system, as we assumed happened in the eBay study.

Mediation Analysis

Mediation analyses, using bootstrapping mediation tests (Preacher and Hayes 2004; Shrout and Bolger 2002) with 5000 replications confirmed our hypothesis that degree of perceived risk of losing mediated the effects of winning orientation and cognitive-load conditions on the amount of offered bid. We found perceived risk significantly mediated the interactive effect on the placed bid (95% CI: 1.19 to 24.38).

Regulatory Focus

An ANOVA on the promotion-motivation average ($\alpha=.86$) and on the prevention-motivation average ($\alpha=.92$), as a function of winning-/losing-expectancy orientation and cognitive-load conditions, revealed no significant main or interactive effects (see last two columns of Table 3). This finding rules out regulatory focus as an alternative explanation for our findings and lends further support to the conclusion that the perceived outcome of the auction seems to be more closely linked to bidding behavior. We further included the relative measure of promotion–prevention orientation as a possible control variable in the model. This within-measure of regulatory orientation did not have a main effect on the bid amount ($F_{(1,223)}<1$, $p>.1$), whereas the interactive effect between cognitive-load conditions and outcome-expectancy conditions remained significant ($F_{(2,223)}=3.02$, $p<.05$).

Discussion

The results of study 3 provide additional support for the findings reported in the eBay study, and they highlight the differential effects of winning- and losing-expectancy orientation as a function of the extent of available cognitive resources among participants relying on the cognitive system. That is, when participants had available cognitive resources (no cognitive load), the offered bids were higher among participants who expected to win the auction than among those who expected to lose it. However, when participants were subjected to a specific high-cognitive load, these effects were attenuated. Finally, when participants were exposed to a general cognitive-load manipulation that blocked the cognitive capacity in a comprehensive manner,

these effects were even reversed, allowing the affective system to exert its influence. Furthermore, this study ruled out a possible alternative explanation for the effect. One might argue that when they expect to lose an item, bidders are driven by a prevention motivation, whereas when they expect to win an item, bidders are more promotion oriented. However, we found neither promotion nor prevention motivations to be a function of outcome-expectancy type.

General Discussion

The present research examines the mediating effect perceived risk has on final price in online auctions in which consumers are primed to rely either on their cognitive or their affective systems. Results demonstrate that the cognitive and affective systems have differential effects on consumers' perceptions of the risk of losing and therefore on the price they are willing to pay for a given product. When the affective system was activated, consumers generally paid higher prices when primed to focus on a possible loss rather than a possible win. On the other hand, when the cognitive system was made more accessible, consumers paid higher prices when they focused on the possibility of winning rather than losing. We found the effect of the cognitive system required available cognitive resources; on reflection, this observation is not really surprising. Thus, in cases in which we reduced the extent of available resources (such as in the field study or in study 3), the effect was attenuated or even reversed. This research provides additional support to the notion that reliance on the affective system rather than the cognitive system generates different perceptions of a given situation and ultimately leads to contradictory behavior.

Whereas prior research considered the contradicting behavior in terms of preference and choices (Wang 2006), or in terms of the process of reasoning (Lee, Amir, and Ariely 2009), in this research, the behavior was related to the amount bid for a product. In particular, study 1 demonstrated the contradictory effects of the affective versus the cognitive system in a field setting. In that study, each system was primed via the product description in a real eBay auction, and we observed significant differences in the actual bids. From a theoretical perspective, these findings highlight, in a field environment, that manipulation of perceived risk can have profound effects on an individual's bidding behavior. The finding of only directional support for results under the cognitive system in a field environment in relation to the affective system may be due to the relative ease in which affect can be generated through the use of a product description (e.g., how would the bidder feel if he or she won/lost the auction) as opposed to getting the bidder in a dynamic real-world auction environment to cognitively process the required steps to be taken in order to win or lose the item. As consumers are cognitive misers, expecting consumers to cognitively process in a dynamic and ever-changing auction environment is "asking a lot" (Matilla 2003). This finding led us to explore in more depth the impact of cognitive load on the underlying processes, finding that when participants were exposed to a general cognitive-load manipulation, which blocked the cognitive capacity in a comprehensive manner, consumers acted as if they were under the influence of an affective system. Moreover, when we used a task-specific cognitive-load manipulation, the effects between expectations of losing and winning were attenuated.

Finally, only under the no-load cognitive condition did bidders place higher bids, and perceived risk appeared greater when respondents expected to win rather than lose the item. These findings suggest that the marketer must have a strong notion regarding the cognitive load the consumer is under, to better predict whether the emphasis of winning or losing will lead to higher prices.

The interactive effect of the two-system model and outcome expectancies on placed bid took place both in the case of relatively cheap products (studies 1 and 2) and a more expensive one (study 3). One can argue that bidders cared less for the products in the first two studies, and this possibility should be considered as a possible limitation of this research. However, in the field study, the bidders were likely to be coin collectors; therefore, we expected their interest in the product category to be relatively high, especially if they needed the coins they were bidding on to "fill a hole" in their collections. In the second study, we chose a local coin attached to a symbolic meaning. Thus, although the bidders in this study were more likely not to be coin collectors, the specific type of coin may have attenuated its low involvement nature.

A possible alternative explanation may account for the degree of effort exerted in the auction as a function of winning or losing expectancy. For example, thinking about what would happen after they won reduced final prices, presumably through a reduction in bidding effort: imagining she has won makes a bidder "rest on her laurels," whereas imagining she hasn't won yet makes her work harder to win. However, this explanation does not account for the opposite pattern of results under the cognitive or the affective system. In future research, collecting additional effort measures, such as time spent in the auction, to shed more light on this direction of research would be of interest.

In future research, an examination of the effect of expected outcomes on different types of products – emotion-oriented products (such as a wedding ring) and cognition-oriented products (such as a science book) – would also be interesting. It is reasonable to assume that the type of product may differentially prime the influence of cognition and/or affect in the two-system model, and possibly make observing effects in the field easier. For example, we might expect a wedding ring to prime the affective system, so bidders will place higher bids when they are reminded about the possibility of losing the ring than when they consider the outcome of winning it. On the other hand, a science book will trigger the deliberative system, so bidders will place higher bids in cases in which they expect to win the book rather than lose it. Future research should also consider consumers' price sensitivity as being influenced by the affective or cognitive systems and by winning- or losing-expectancy orientation.

An exploration of whether consumers become less price-sensitive under affective/losing-expectancy or cognitive/winning-expectancy conditions and are therefore willing to place higher

bids would be worthwhile. This direction of research might also shed light on the association between perceived risk and price sensitivity. An additional route for future research may compare the process and outcome effects to the cognitive and affective systems. Specifically, outcome-oriented thinking (Escalas and Luce 2004; Pham and Taylor 1999), which focuses on the desired outcomes, may be in line with the cognitive system, whereas process-oriented thinking (Escalas and Luce 2004; Pham and Taylor 1999) may match the cognitive style of the affective system. By priming bidders to concentrate on the consequences of the online auctions along with the expectations of winning or losing, in terms of the perception of risk and the amount bid, we may get similar results as when priming the cognitive system. Alternatively, by priming bidders to pay attention to the process of the auction itself, we may elicit similar perceptions of risk and bids as when priming the affective system. Additionally, examining our findings in conjunction with prospect theory would be interesting in future research (Kahneman and Tversky 1979). One could do so by further addressing the "endowment effect" in the context of online auctions (Heyman, Orhun, and Ariely 2004) as a function of the two-system model and outcome expectancies.

The current research focuses on the perceived risk of losing as a possible underlying mechanism that drives the bidding behavior under the cognitive and affective systems. Each system may trigger additional intriguing processes. The cognitive system, for example, may introduce processes such as strategies, reference states, and motivations, whereas the affective system may introduce processes such as competitiveness, loss aversion, loss of control, and/or more general negativity biases. Future research could take these processes into account, along with their interplay with the perceived risk of losing.

In general, from a practical perspective, this research offers buyers, sellers and market makers such as eBay simple and effective tools for activating the perceived risk aversion effect among consumers in the context of online auctions. From the selling perspective it shows that inserting a simple note within the product description, emphasizing a deliberative or affective perspective regarding the possible outcomes of winning or losing the product, can have a rather complex influence on the consumers' decision processes and bidding behavior. This effect should be further explored in additional shopping platforms, such as in advertising campaigns, product packaging, dating sites, employment sites, group buying sites or even in the stock market where actual wins and losses are involved. For example, Group-on's focus on the amount saved rather than spent; could be followed up with the positioning that "you only spend when you win," in order to increase the relative importance of winning for each person (for the typically standard products that the site sells), therefore achieving the critical mass for the sale to occur. Essentially, our findings and these examples show that the perceived risk effect may potentially be controlled by the seller rather than the consumer. This may enhance the efficacy of marketing campaigns, for example, in the context of introducing new products. Thus, if within the new product description, the marketer could choose to induce among consumers the belief that they are winners and ahead of the curve if they buy the item (consider Apple's new iPad II as an example), then a deliberative approach may result in the ability to sell at relatively higher prices as shown in study 3.

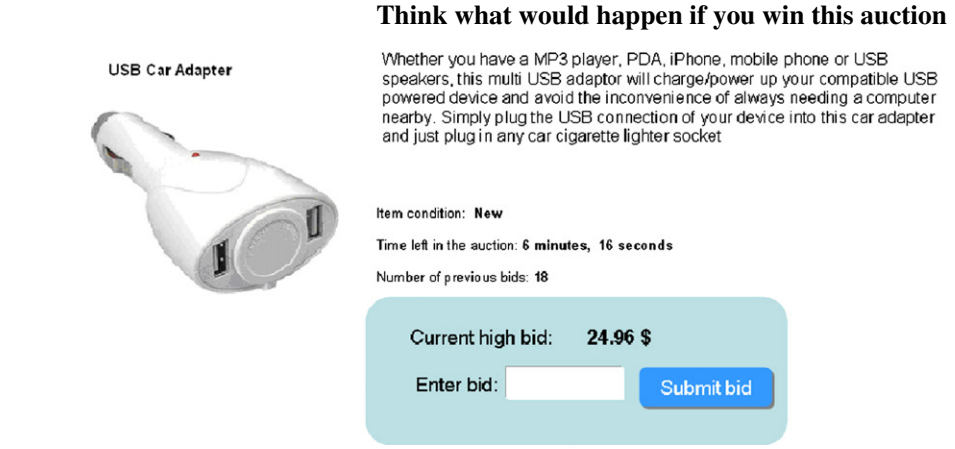
For the products we examined in our first two studies (i.e., collectors' items), inducing an affective mindset combined with highlighting the perceived risk of losing the item may lead to favorable results for the seller, because under such conditions, bidding may result in a frenzy as the item in the condition presented may be perceived, particularly from an affect perspective, as a one-of-a-kind offer. Likewise, from the bidder's perspective, such a combination of affective processing and the aura of a potential loss may be a harbinger of the likelihood of significant sniping behavior toward the end of the auction, which for some individuals would signal the need to raise their reserve bids before the last-minute action begins. Indeed, sniping has been characterized as an emotional strategy because researchers have observed that those who engage in multiple bids at the auction's ending, suggestive of a willingness to abandon their internal reserve (please see exhibit 1 of Heyman, Orhun, and Ariely 2004). Hence, making the bidder aware of the consequences of owning or not owning a product from a cognitive or affective perspective, if done correctly, could ultimately speed up the diffusion process and the rate of adoption, as well as increase the price that is achieved.

The results of our findings aside from suggesting how to use cues to sell a particular lot offered for sale have broader implications. They imply that market makers (e.g., eBay, Christie's, Sotheby's) who make their money on a commission basis as a function of the number of items sold, should consider the match between the product they typically sell and the appropriate auction venue, since the venue may differentially trigger cognitive versus emotional bidding which impacts the relative importance of risk perceptions regarding the potential of losing or winning the auction. For example, live auctions by their very nature involve intensive social interaction with other bidders and provide a generally socially directed environment which has the potential to lead to emotional bidding where the goal to vanquish another is more likely to go hand in hand with the focus of not losing the item. As our research has shown, products which are one-of-a-kind (e.g., antiques, artwork, bric-a-brac, custom jewelry) may be best suited to such a live selling context since the potential of losing such an item may loom large especially if it is unlikely to come up for auction again (i.e., Sotheby's and Christie's are famous for selling the works of unique paintings from well known artists). Alternatively, identical products which come up for sale often (e.g., CD's of popular singers, electronic hardware), may be better suited for sale online in a more socially restricted emotional context, where winning is the focus. In this regard, eBay who recently changed its slogan from "Shop Victoriously" to "Come to Think of it… eBay," would be better served by positioning itself with the former slogan, since the bulk of their items sold are not unique. Hence a match between venue and product could better serve market makers in two ways by first leading to a greater percentage of sales and secondly, to achieve higher prices.

Appendix A

Study 2: Online auction screenshot

Study 3: Product description



References

Aaker, Jennifer and Angela Lee (2001), "I Seek Pleasures, We Avoid Pains: The Role of Self Regulatory Goals in Information Processing of Persuasion," *Journal of Consumer Research*, 28, 33–49.

Ariely, Dan and Itamar Simonson (2003), "Buying, Bidding, Playing, or Competing? Value Assessment and Decision Dynamics in Online Auctions," *Journal of Consumer Psychology*, 13, 113–23.

Bapna, Ravi, Paulo Goes, Alok Gupta, and Jin Yiwei (2004), "User Heterogeneity and its Impact on Electronic Auction Market Design: An Empirical Exploration," *MIS Quarterly*, 28, 1, 21–43.

Bosnjak, Michael, Mirta Galesic, and Tracy Tuten (2007), "Personality Determinants of Online Shopping: Explaining Online Purchase Intentions Using a Hierarchical Approach," *Journal of Business Research*, 60, 6, 597–605.

Brown, John and John Morgan (2008), "Reputation in On-line Auctions: The Market for Trust," *California Management Review*, 49, 1, 82–102.

Carvalho, Sergio W., Lauren Block, Subramanian Sivaramakrishnan, Rajesh Manchanda, and Chrissy Mitakakis (2008), "Risk Perception and Risk Avoidance: The Role of Cultural Identity and Personal Relevance," *International Journal of Marketing*, 25, 4, 319–26.

Chen, Chao C., Xiao-Ping Chen, and James R. Meindl (1998), "How Can Cooperation be Fostered? The Cultural Effects of Individualism and Collectivism," *Academy of Management Review*, 23, 2, 285–304.

Dabholkar, Pratibha A. (1994), "Incorporating Choice into an Attitudinal Framework: Analyzing Models of Mental Comparison Processes," *Journal of Consumer Research*, 16, 100–18.

Delgado, Mauricio R., Christa D. Labouliere, and Elizabeth A. Phelps (2006), "Fear of Losing Money? Aversive Conditioning with Secondary Reinforcers," *Social Cognitive and Affective Neuroscience*, 1, 3, 250–9.

Drolet, Aimee, Mary F. Luce, and Itamar Simonson (2009), "When Does Choice Reveal Preference? Moderators of Heuristic versus Goal-based Choice," *Journal of Consumer Research*, 36, 137–47.

Epstein, Seymour (1994), "Integration of the Cognitive and the Psychodynamic Unconscious," *American Psychologist*, 49, 8, 709–24.

Escalas, Jennifer E. and Mary F. Luce (2004), "Understanding the Effects of Process-focused versus Outcome-focused Thought in Response to Advertising," *Journal of Consumer Research*, 34, 274–85.

Evans, Jonathan S.B.T. (2008), "Dual Processing Accounts of Reasoning Judgment and Social Cognition," *Annual Review of Psychology*, 59, 255–7.

Fabrigar, Leandre R. and Richard E. Petty (1999), "The Role of the Affective and Cognitive Bases of Attitudes in Susceptibility to Affectively and Cognitively Based Persuasion," *Personality and Social Psychology Bulletin*, 25, 363–81.

Finucane, Melissa L., Ali Alhakami, Paul Slovic, and Stephen M. Johnson (2000), "The Affect Heuristic in Judgments of Risks and Benefits," *Journal of Behavioral Decision Making*, 13, 1–17.

Forsythe, Sandra M. and Bo Shi (2003), "Consumer Patronage and Risk Perceptions in Internet Shopping," *Journal of Business Research*, 56, 11, 867–75.

Gilbert, Daniel T., Brett W. Pelham, and Douglas S. Krull (1988), "On Cognitive Busyness: When Person Perceivers Meet Persons Perceived," *Journal of Personality and Social Psychology*, 54, 5, 733–40.

Harless, David W. and Colin F. Camerer (1994), "The Predictive Utility of Generalized Expected Utility Theories," *Econometria*, 62, 1251–89.

Heyman, James, Yesim Orhun, and Dan Ariely (2004), "Auction Fever: The Effect of Opponents and Quasi-Endowment on Product Valuations," *Journal of Interactive Marketing*, 18, 4, 4–21.

Higgins, E. Tory, Christopher J.R. Roney, Ellen Crowe, and Charles Hymes (1994), "Ideal versus Ought Predilections for Approach and Avoidance - Distinct Self-regulatory Systems," *Journal of Personality and Social Psychology*, 66, 2, 276–86.

——— (1997), "Beyond Pleasure and Pain," *American Psychologist*, 52, 12, 1280–300.

Ho, Simon S.M. and Victor T.F. Ng (1994), "Customers Risk Perceptions of Electronic Payment Systems," *International Journal of Bank Marketing*, 12, 8, 26–38.

Jain, Shailendra P., Nidhi Agrawal, and Durairaj Maheswaran (2006), "When More May Be Less: The Effects of Regulatory Focus on Responses to Different Comparative Frames," *Journal of Consumer Research*, 33, 1, 91–8.

Kahneman, Daniel and Amos Tversky (1979), "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47, 313–27.

——— and Dan Lovallo (1993), "Timid Choices and Bold Forecasts: A Cognitive Perspective on Risk Taking," *Management Science*, 39, 17–32.

——— and Shane Frederick (2002), "Representativeness Revisited: Attribution Substitution in Intuitive Judgment," in *Heuristics and Biases: The Psychology of Intuitive Judgment*, Tom Gilovich, Dale Griffin, Daniel Kahneman, editors. New York, NY: Cambridge University Press, 49–81.

Kamins, Michael, Avraham Noy, Yael Steinhart, and David Mazursky (2011), "The Effect of Social Cues on Sniping Behavior in Internet Auctions: Field Evidence and a Lab Experiment," *Journal of Interactive Marketing*, 25, 4, 241–50.

Kim, Yongseoq (2005), "The Effects of Buyer and Product Traits with Seller Reputation on Price Premiums in e-Auction," *The Journal of Computer Information Systems*, 46, 1, 79–91.

Kim, Dan J., Donald L. Ferrin, and Raghav H. Rao (2008), "A Trust-based Consumer Decision-making Model in Electronic Commerce: The Role of Trust, Perceived Risk, and their Antecedents," *Decision Support Systems*, 44, 2, 544–64.

Ku, Gillian, Deepak Malhotra, and J. Keith Murninghan (2005), "Towards A Competitive Arousal Model of Decision-making: A Study of Auction Fever in Live and Internet Auctions," *Organizational Behavior and Human Decision Processes*, 96, 89–103.

Ladouceur, Robert, Serge Sévigny, Alexander Blaszczynski, Kieron O'Connor, and Marc E. Lavoie (2003), "Video Lottery: Winning Expectancies and Arousal," *Addiction*, 98, 733–8.

Lee, Leonard, On Amir, and Dan Ariely (2009), "In Search of Homo Economicus: Cognitive Noise and the Role of Emotion in Preference Consistency," *Journal of Consumer Research*, 173–87.

Lerner, Jennifer S. and Dacher Keltner (2001), "Fear, Anger, and Risk," *Journal of Personality and Social Psychology*, 81, 146–59.

Liberman, Nira, Lorraine C. Idson, Chrostopher J. Camacho, and Tory E. Higgins (1999), "Promotion and Prevention Choices between Stability and Change," *Journal of Personality and Social Psychology*, 77, 1135–45.

Lieberman, Matthew D., Ruth Gaunt, Daniel T. Gilbert, and Yaacov Trope (2002), "Reflexion and Reflection: A Social Cognitive Neuroscience Approach to Attributional Inference," in *Advances in Experimental Social Psychology,* Vol. 34, Mark P. Zanna, editor. San Diego: Academic Press, 199–249.

Loewenstein, George, Elke U. Weber, Christopher K. Hsee, and Ned Welch (2001), "Risk as Feelings," *Psychological Bulletin*, 127, 267–86.

——— and Ted O'Donoghue (2004), "Animal Spirits: Affective and Deliberative Processes in Economic Behavior," Working paper.

Luce, R. Duncan and Detlof von Winterfeldt (1994), "What Common Ground Exists for Descriptive, Prescriptive, and Normative Utility Theories?," *Management Science*, 40, 263–79.

Lynch, John G. and Jerry L. Cohen (1978), "The Use of Subjective Expected Utility Theory as an Aid to Understanding Variables that Influence Helping Behavior," *Journal of Personality and Social Psychology*, 36, 10, 1138–51.

Matilla, Anna S. (2003), "The Impact of Cognitive Inertia on Post-consumption Cognitive Processes," *Journal of the Academy of Marketing Science*, 31, 3, 287–99.

McAllister, Daniel J. (1995), "Affect- and Cognition-based Trust as Foundations for Interpersonal Cooperation in Organizations," *The Academy of Management Journal*, 38, 1, 24–59.

McKinney, Vicki, Kanghyun Yoon, and Fatemeh M. Zahedi (2002), "The Measurement of Web-customer Satisfaction: An Expectation and Disconfirmation Approach," *Information Systems Research*, 13, 3, 296–315.

Metcalfe, Janet and Walter Mischel (1999), "A Hot/Cool-system Analysis of Delay of Gratification: Dynamics of Willpower," *Psychological Review*, 106, 1, 3–19.

Mitchell, Vincent W. (1999), "Consumer Perceived Risk: Conceptualizations and Models," *European Journal of Marketing*, 33, 163–95.

Möllenberg, Antje (2004), "Internet Auctions in Marketing: The Consumer Perspective," *Electronic Markets*, 14, 4, 360–71.

Novemsky, Nathan and Daniel Kahneman (2005), "The Boundaries of Loss Aversion," *Journal of Marketing Research*, 42, 119–28.

Noy, Avraham, Dahpna Raban, and Gilad Ravid (2006), "Testing Social Theories in CMC through Gaming and Simulation," *Simulation and Gaming*, 37, 2, 174–94.

Oliver, Richard L. (1981), "Measurement and Evaluation of Satisfaction Processes in Retail Settings," *Journal of Retailing*, 57, 25–48.

Olson, Jerry and Philip Dover (1979), "Disconfirmation of Consumer Expectations through Product Trial," *Journal of Applied Psychology*, 64, 179–89.

Paivio, Allan (1986), *Mental Representations: A Dual Coding Approach*. New York, NY: Oxford University Press.

Park, Young-Hoon and Eric T. Bradlow (2005), "An Integrated Model for Whether, Who, When and How Much in Internet Auctions," *Journal of Marketing Research*, 42, 4, 470–82.

Pavlou, Paul A. (2003), "Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model," *International Journal of Electronic Commerce*, 7, 3, 69–103.

Pham, Lien B. and Shelly E. Taylor (1999), "The Effect of Mental Simulation on Goal-directed Performance," *Imagination, Cognition and Personality*, 18, 253–68.

Preacher, Kristopher J. and Andrew F. Hayes (2004), "SPSS and SAS Procedures for Estimating Indirect Effects in Simple Mediation Models," *Behavior Research Methods, Instruments & Computers*, 36, 717–31.

———, Derek D. Rucker, and Andrew F. Hayes (2007), "Addressing Moderated Mediation Hypotheses: Theory, Methods, and Prescriptions," *Multivariate Behavioral Research*, 42, 185–227.

Rafaeli, Sheizaf and Avraham Noy (2002), "Online Auctions, Messaging, Communication and Social Facilitation: A Simulation And Experimental Evidence," *European Journal of Information Systems*, 11, 196–207.

———, Daphna Raban, Gilad Ravid, and Avraham Noy (2003), "Online Simulations in Management Education about Information and its Uses," in *Educating Managers with Tomorrow's Technologies,* Charles Wankel, Robert Defillipi, editors. Greenwich, CT: Information Age Publishing, 53–80.

Rao, Srikumar and John U. Farley (1987), "Effects of Environmental Perceptions and Cognitive Complexity on Search and Information Processing," *Psychology and Marketing*, 4, 4, 287–302.

Resnick, Paul and Richard Zeckhauser (2002), "Trust among Strangers in Internet Transactions: Empirical Analysis of eBay's Reputation System," in *The Economics of the Internet and E-commerce (Advances in Applied Microeconomics),* Michael R. Baye, editor. Amsterdam: Elsevier Science, 127–57.

Samuels, Richard (2006), "The Magical Number Two, Plus or Minus: Some Comments on Dual-processing Theories of Cognition," *Two Minds: Dual Process Theories of Reasoning and Rationality. International Conference held at Cambridge, UK, 5 - 7th July*. (Ref Type: Conference Proceeding).

Siemer, Matthias and Rainer Reisenzein (1998), "Effects of Mood on Evaluative Judgments: Influence of Reduced Processing Capacity and Mood Salience," *Cognition and Emotion*, 12, 6, 783–805.

Sengupta, Jaideep and Rongrong Zhou (2007), "Understanding Impulsive Choice Behaviors: The Motivational Influences of Regulatory Focus," *Journal of Marketing Research*, 44, 297–308.

Shrout, Patrick E. and Niall Bolger (2002), "Mediation in Experimental and Nonexperimental Studies: New Procedures and Recommendations," *Psychological Methods*, 7, 422–45.

Simon, Herbert A. (1967), "Motivational and Emotional Controls of Cognition," *Psychological Review*, 57, 386–420.

Shah, James and E. Tory Higgins (1997), "Expectancy * Value Effects: Regulatory Focus as Determinant of Magnitude and Direction," *Journal of Personality and Social Psychology*, 73, 3, 447–58.

Sloman, Steven A. (1996), "The Empirical Case for Two Systems of Reasoning," *Psychological Bulletin*, 119, 1, 3–22.

Slovic, Paul, Baruch Fischhoff, and Sarah Lichtenstein (1980), "Facts and Fears: Understanding Perceived Risk," in *Societal Risk Assessments: How Safe is Safe Enough?* Richard C. Schwing, Walter Albers, Jr., editors. New York, NY: Plenum Press, 181–216.

——— (1987), "Perception of Risk," *Science*, 236, 280–5.

———, James H. Flynn, and Mark Layman (1991), "Perceived Risk, Trust, and the Politics of Nuclear Waste," *Science*, 254, 1603–7.

Srinivasan, Narasimhan and Brian T. Ratchford (1991), "An Empirical Test of a Model of External Search for Automobiles," *Journal of Consumer Research*, 18, 2, 233–42.

Starmer, Chris (2000), "Developments in Non-expected Utility Theory: The Hunt for a Descriptive Theory of Choice under Risk," *Journal of Economic Literature*, 38, 2, 332–83.

Steinhart, Yael and Robert J. Wyer (2009), "Motivational Roots of Need for Cognition: The Role of Prevention and Promotion Focus," *European Journal of Social Psychology*, 39, 608–21.

Stone, Robert N. and Fredrick W. Winter (1987), "Risk: Is It Still Uncertainty Times Consequences?" in *Proceedings of the American Marketing Association, Winter Educators Conference,* R. W. Belk et al., editors. Chicago, IL: American Marketing Association, 261-5.

Swinyard, William R. (1993), "The Effects of Mood, Involvement, and Quality of Store Experience on Shopping Intentions," *Journal of Consumer Research*, 20, 271–80.

Tat Keh, Hean and Jin Sun (2008), "The Complexities of Perceived Risk in Cross-cultural Services Marketing," *Journal of International Marketing*, 16, 1, 120–46.

Valla, Jean P. (1982), "*The Concept of Risk in Industrial Buying Behavior*," Workshop on Organizational Buying Behavior. Brussels, Belgium: European Institute for Advanced Studies in Management.

van Noort, Guda, Peter Kerkhof, and Bob M. Fennis (2007), "Online Versus Conventional Shopping: Consumers' Risk Perception and Regulatory Focus," *Cyber Psychology & Behavior*, 10, 5, 731–3.

———, ——— and ——— (2008), "The Persuasiveness of Online Safety Cues: The Impact of Prevention Focus Compatibility of Web Content on Consumers' Risk Perceptions, Attitudes and Intentions," *Journal of Interactive Marketing*, 22, 4, 58–72.

Vroom Victor H.H., editor (1964). *Work and Motivation*. Oxford, UK: Wiley.

Wang, Xiao-Tian (2006), "Emotions within Reason: Resolving Conflicts in Risk Preference," *Cognition Emotion*, 20, 8, 1132–52.

Wilson, Timothy D., Douglas J. Lisle, Jonathan W. Schooler, Sara D. Hodges, Kristen J. Klaaren, and Suzanne J. LaFleur (1993), "Introspecting about Reasons Can Reduce Post-Choice Satisfaction," *Personality and Social Psychology Bulletin*, 19, 331–9.

Yen, Chia-Hui and His-Peng Lu (2008), "Factors Influencing Online Auction Repurchase Intention," *Internet Research*, 18, 1, 7–25.

Yi, Youjae (1990), "Cognitive and Affective Priming Effects of the Context for Print Advertisements," *Journal of Advertising*, 19, 2, 40–8.

Zaichkowsky, Judy L. (1994), "The Personal Involvement Inventory: Reduction, Revision, and Application to Advertising," *Journal of Advertising*, 23, 4, 59–70.

Zeng, Daniel, James C. Cox, and Moshe Dror (2007), "Coordination of Purchasing and Bidding Activities across Posted Offer and Auction Markets," *Journal of Information Systems and e-Business Management*, 5, 25–46.