

**Eluding the Lemons: Buyer Mindfulness and Seller Deception
in Online Auctions**

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The fantastic growth of online auction markets creates a dilemma for the reluctant potential online auction buyer, something akin to the temptation of a downhill skier who, poised at the top of a ski run which she knows to be beyond her skiing ability, must either eschew caution and launch onto the expert run, or retreat to the safety of the gently sloping, looping alternative run that skirts the mountain's edge. To the potential online auction buyer, the dilemma is this: is it wiser to enter the online auction, with its myriad, alluring products -- most unavailable in "meatspace" (i.e. offline) or instead to choose the caution of purchasing at a local store, forgoing online opportunities because of the considerable risks of playing in the global, largely unregulated online auction. In this article, we advance and advocate a middle path between retreat from market risk and uninformed risk-seeking -- that of the cultivation and development of online auction buyer mindfulness. We argue that cultivating buyer mindfulness can induce broader online market participation to include those for whom, to date, caution has led to avoid the world's most rapidly growing market -- online B2C.

Akerlof (1970) models the fundamental problem that we explore herein: how do buyers make purchase choices when they have greater product quality uncertainty than do sellers. When sellers have more product information than buyers (i.e., information asymmetry), then an

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adaptation of the principle of adverse selection argues that sellers will flood the market with inferior products (metaphorically, the bad “cars” will drive the good cars out of the market).¹

Akerlof concludes that, given certain assumptions, quality uncertainty in the presence of greater Seller than buyer product information will cause market failure(i.e., no price is sufficient to induce a buyer to purchase in this market). Akerlof notes that dishonesty is a greater problem in emerging than developed markets.

Managing fraud in online markets has been an important concern of online market makers such as eBay and Amazon (e.g., Boyd 2002, Stone, Nikitkov, and Miller 2014, Duh, Jamal, and Sunder 2002). Building on Akerlof (1970), McDonald and Slawson (2002) present data indicating that in an online market (eBay), sellers can use their reputation (i.e., feedback rating) to signal high product quality. In addition, Levin (2001) argues that increasing buyer information(i.e., reducing the information asymmetry between seller and buyer), is one strategy for increasing product quality. In this article, we propose buyer mindfulness as a means for implementing Levin’s insight, i.e., as a means for increasing buyer information, broadly conceived.

Mindfulness, as applied to organizational, consumer and work contexts, concerns the quality of individual attention and awareness (e.g. Dong and Brunel (2006), Levinthal and Rerup (2006), Weick (1995), Weick and Sutcliffe (2006)). Within the Western intellectual tradition, mindful information processing (Langer 1989, Weick and Putnam 2006) includes: (1) active refinement and differentiation of categories, (2) creation of new categories by parsing streams of information and activity, and, (3) flexible and nuanced attention to context and detail. Diverse investigations, and applications, of the construct of mindfulness exist, including research in medicine (e.g., Ledesma

¹ While Akerlof (1970) does not acknowledge his pun (i.e., of bad cars “driving” out good cars), we lack his scholarly discipline and therefore note it.

and Kumano 2009), psychotherapy (Simpkins and Simpkins 2009), inter-personal relations (e.g.

Wilson and DuFrene 2009), management (Weick and Sutcliffe 2001, 2006, 2007; Weick et al.

1999), and the management of information technology (Butler and Gray 2006, Swanson and

Ramiller 2004). But the possibility and implication of greater among market participants is largely

unexplored in both the economics and communications literatures.

Burgoon et al. (2000) and Burgoon and Langer (1995) introduce mindfulness to problems in communication, including "... training the public to detect hoaxes and scams (Burgoon et al. 2000, p. 105)". This article builds upon this suggestion by proposing the construct of mindfulness as an aid in detecting online auction deception perpetrated by sellers (cf. Levin 2001)). More specifically, it assesses the strategies evident in publicly reported online auction deceptions from 1995-2008, proposes a model of the "mindful" online auction buyer, contrasts more versus less "mindful" buyer approaches to evaluating an online auction listing, and explores the implications of increased buyer mindfulness for online auction stakeholders.

Applying mindfulness to the problem of detecting online auction seller deception promises multiple benefits to scholars, regulators, consumers, and other market stakeholders. One contribution is educational: to better understand the information sources and detection strategies that can best inform mindful online auction buyers of the risk of seller deception (cf. Verhagen et al. 2006). We also contribute by explicating and analyzing publicly reported online auction deceptions; this analysis seeks to increase the likelihood that regulators, forensic accountants, internal and external systems auditors, information system designers, and market facilitators will identify seller deception strategies and thereby better prevent and detect them. Another goal of this effort is to facilitate the creation of decision aids that nudge online auction buyers towards greater levels of mindfulness (e.g. Ku, Chen et al. 2007). An additional objective is to empower communities (e.g. Chua and Wareham 2004, 2007) to prevent, detect or correct seller deception. Finally, we contribute

to theory by extending Burgoon and Langer (1995), Burgoon et al. (2000), and (Levin 2001);

specifically, we model deception detection using mindfulness in a rapidly growing and increasingly important market context – the online auction market – and consider the potential benefits of greater buyer mindfulness to addressing information asymmetry, adverse selection, and potential market failure due to quality uncertainty.

The article proceeds in four sections. We first consider the nature of online deception, describe the difficult problem of detecting seller deception in the online auction, and propose a framework for detecting deception. Next, we extend the sample of online deceptions reported in Grazioli and Jarvenpaa (2003: hereafter, GJ 2003) to include 2001-2008, in order to investigate the evolving nature of online auction deception by sellers. The third section presents a model of mindful auction buyer behavior, and contrasts mindful with unmindful buyer evaluations of an auction listing. The final section summarizes the paper's contributions, limitations and conclusions.

SELLER DECEPTION IN ONLINE AUCTIONS

Financial crime follows opportunity (Fletcher 2007). Emerging markets and new technologies facilitate new forms of crime, because market and organizational controls generally lag innovations in crime (cf. Leap 2007). The Internet and online auctions offer important advantages to aspiring financial deceivers and criminals compared with “old crime” venues such as robbery, securities fraud, and con games (Kauffman and Wood 2000). These advantages include lower likelihoods of detection, ambiguous legal and moral responsibility for detecting and prosecuting deception, and a vast, growing international clientele of unsophisticated potential targets (Grabosky et al. 2001, Grabosky 2007). In addition, the “hyper-reality” of the online market (Baker 2002), which recasts and blurs traditional market relations, can create the

illusion of a “magical” world in which deceivers see criminal acts and deception as legitimate strategies in a world that is like a video game – with no real consequences -- rather than a market (Floridi and Sanders 2001).

Most online auctioneers, of whom eBay is the largest, argue that financial fraud is infrequent, perhaps because of their internal efforts to control it. Indeed, eBay’s reputation feedback system, and, its Trust and Safety department (TSD) are important controls over fraud (Duh et al. 2002). eBay’s feedback mechanism is the primary means through which eBay elicits honest behavior (Resnick and Zeckhauser 2002; Dellarocas 2003a, 2003b, 2005, 2006; Pavlou and Dimoka 2006). However, despite eBay’s claims to the contrary, fraud remains a significant problem for eBay and other online auctions. For example, Sullivan (2002) reports that, according to one source, deception rates of up to 75 percent exist in eBay’s “Computer and Networking” category, while Frajola (2002) observes a 10 percent fraud rate in a review of 121,475 stamp listings.

The nexus of conditions that are favorable to deception has led to a growth of internet-based financial fraud that has outpaced the explosive growth of e-commerce (Laudon and Traver 2007). The Internet Crime Complaint Center (2003a, 2003b, 2006) has consistently identified auction fraud as the most frequent online crime. Online auction deception and fraud imposes multiple costs on individuals, organizations, and society (Leap 2007, Cameron and Galloway 2005). For sellers and online auctioneers, fraud costs include: lost sales or commissions due to fraud risk, the direct costs of implementing preventive, detective and corrective controls, and lower prices to attract wary buyers, i.e. a market for “lemons” (Lee et al. 2005). For buyers, fraud costs include monetary and time losses as well as a loss of trust in the online seller and in e-commerce. High fraud rates also increase regulatory, investigatory, prosecutorial,

incarceration, and internal and external auditing costs. Methods and models for detecting online auction deception hold great practical promise in combating this important problem.

Economic deception is an: (a) intentional misrepresentation by an opportunistic agent that is designed to (b) change the target's behavior in order to (c) increase the agent's financial payoff(s) or probability of financial payoff(s) (Hyman 1989; cf. Buller and Burgoon 1994,1996). Multiple disciplines have made important contributions to research on, and theories of, economic deception and fraud. Contributing disciplines include accountancy, communication, computer science, criminology, economics, law enforcement, management, military strategy, management information systems (MIS) and information technology (IT), operations research, political science, sociology, and multiple sub-domains within psychology (e.g., cognitive, social, and evolutionary). We classify this broad, diverse, and exemplary work into five related research lines:

- Bell and Whaley's (1982, 1991) seminal taxonomy of deception strategies and tactics, developed in political science and military strategy, has been applied to military tactical planning (Hughes 1990, Parket 1991, Godson et al. 2001), preventing and safeguarding against information systems (IS) hacker attacks (Cohen at al. 2005), modeling fraud prevention and detection in financial statement analysis (Johnson et al. 2001), and, studying the effects of training and warning on sensitivity to deception (Biros et al. 2002).
- Descriptions and models of the processes used by experts to detect financial statement fraud and other deceptions, primarily developed in cognitive science, psychology, and accounting (e.g. Johnson et al. 1993, Johnson et al. 2001, Grazioli 2004, Johnson and Santos 2004).

- So-called “Pinocchio” research, conducted within psychology, information technology, law enforcement, and communications which investigates the cues that are useful in detecting deception (e.g. Zuckerman et al. 1985, Riggio et al. 1987, DePaulo et al. 1988, Millar and Millar 1995, Anolli and Ciceri 1997, Sporer 1997, Stromwall and Granhag 2003, Vrij and Mann 2004, Taylor and Hick 2007). One important application of this research is the development of clinical manuals for auditors, psychiatrists, psychologists, and attorneys who must detect lying (Rogers 1988, 2008; Boyd 2007; DeClue 2007). Recent work in psychology, communications, and, computer science and IT proposes models and systems to automate cue identification and detection (Zhou et al. 2004a, 2004b; Meservy et al. 2005; Rothwell et al. 2006; Wang et al. 2006; Wentzel 2006).

- Research in communication, management, psychology and IT which investigates the interactions between deceivers and targets, and, the characteristics and “effectiveness” of the communication channels chosen by deceivers (e.g. Buller and Burgoon 1996, Marett and George 2004, Twitchell et al. 2005, Zhou 2005, Zhou and Zhang 2006, Rogers 2007). This work includes investigation of the relations between states of mind (for example, mindful versus mindlessness) and social interaction (Burgoon et al. 2000).

- Economic research on the failure of markets due to quality uncertainty and information asymmetry in which buyers lack sufficient information to price products
(e.g., see Akerlof (1970) and Levin (2001).

Our contribution is to synthesize and integrate relevant aspects of these related literatures to apply mindfulness to the problem on online auction seller deception

Online Auctions and Product Quality

The online auction has the potential, in the absence of efforts to reduce superior seller product information, to descend into market failure due to buyer uncertainty about product quality. Consistent with models of markets that include product quality uncertainty (Akerlof 1970, Levin 2001), online auction exchanges are primarily informational, occurring within a network of role-defined, but fluid, stakeholder relations. Online auction informational exchanges include encoded messages, created by an online seller, which are posted to an online market, and, later, decoded by potential buyers. When executed, these information exchanges culminate in an exchange of goods or services.

Online auctions are a unique and emergent markets, which resemble traditional auctions in name only (Albert 2002; MacInnes 2005; Gu 2007; cf. Chua and Wareham 2004, 2007). The level of assurance given to buyers about products and sellers is considerably less in the online, compared with the traditional, auction. In traditional auctions, prospective buyers, or their expert agents, generally physically examine merchandise to determine its quality and fitness. In contrast, online auction buyers usually examine product information by viewing onscreen digital pictures and textual information that is provided by the seller, with few restrictions or constraints imposed by the auctioneer. In traditional auctions, sellers must provide proof of identity, whereas in online auctions it is both feasible and common for sellers to create multiple identities (Friedman and Resnick 2001). In traditional auctions, the auctioneer, or their designated agent, assumes some risk in the auction.

For example, a buyer who bought a fraudulent painting from a traditional auctioneer such as Sotheby's could, in most legal jurisdictions, sue the seller and the auctioneer for fraud or misrepresentation. In contrast, eBay and other online auctioneers have disclaimed any responsibility for the fitness or quality of the goods that are sold online. EBay and other online

auctioneers argue that they are a “venue provider” rather than a true auctioneer. U.S. (but not French and German) courts have upheld eBay’s disclaimer of responsibility to buyers (Albert 2002). In traditional auctions, the auctioneer generally takes title to, and physically handles, the goods for sale. In contrast, in the online auction the goods remain, assuming that they exist, in the seller’s possession. In short, online auctions are riskier than, and bear little resemblance to, traditional auctions.

Online market makers, including eBay and its subsidiary PayPal, and law enforcement agencies, provide limited support to, and resources for, defrauded buyers (Jewkes 2002, 2007). Case histories are consistent with the assertion that, historically, few resources supported defrauded buyers in recovering lost funds (e.g. Gu (2007), Hitchcock and Page (2006), Silver Lake Editors (2006)). For example, one recent case history of a defrauded buyer (Willcox 2005) chronicles hundreds of lost hours spent on seeking fraud recovery and the observation that reliance on eBay, PayPal, and law enforcement agencies for help “... resulted in a dead end (p. 29).” The rise of “vigilante” sites that are operated by and for defrauded online auction buyers (e.g. Klink and Klink 2005, 2007; Bidfraud.com 2000; paypalsucks.com undated) is further evidence of the absence of buyer recourse through market makers and existing laws (Albert 2002), and, growing frustration among defrauded buyers (Goldsborough 2003, see also Chua and Wareham 2004, 2007). In short, the online auction market is largely *laissez faire*, let the buyer beware (in Latin: *caveat emptor*) and self-regulated. Increasing buyer awareness, knowledge and education are critical to the success of *laissez faire* markets (Jensen 1991).

Online Auction Domains: Product, Transaction, and Seller

What information might best inform “mindful” online auction buyers as to the potential for seller deception? Based on a review of auction fraud websites and published research (e.g. Chua and Wareham 2004, 2007; Resnick and Zeckhauser 2002; Goldsborough 2003; Bruner

2005; Klink and Klink 2005, 2007; MacInnes 2005; Willcox 2005; Walton 2006), we propose three categories or “domains” that are, in the present market, the core dimensions of the online auction environment that are susceptible to manipulation by sellers: *products (including services)*, *sellers* and *transactions*. The construct of mindfulness emphasizes fluidity; hence, we propose these categories as flexible, malleable starting points for considering online auction seller deceptions. They are not intended as rigid, permanent categories.

Table 1 identifies and briefly describes the attributes of these domains that are useful in identifying seller deceptions, and to identifying buyer risk. The product and transaction domains relate to aspects of the online auction listing that directly influence transaction outcomes. Product characteristics (Panel A) relate to offered products or services. The seven conceptual product domain attributes that are relevant to detecting seller deceptions are product: (1) fitness, (2) condition or authenticity, (3) existence, (4) ownership, (5) location, (6) legality and (7) price. Transaction domain attributes (Panel B) relate to non-product aspects of a specific auction listing that include potential buyer risks. These include: (1) transaction location, (2) repudiation, (3) the sequence, timing and fulfillment of transaction execution, (4) seller theft of the buyer’s identity or transaction information (e.g., credit card information), and (5) premature communication disruption by the seller.

Insert Table 1 about here

Seller domain characteristics (Panel C) concern the seller’s self-presentation such as the seller’s apparent: (1) honesty, (2) knowledge and capability, (3) persona, and (4) physical location. Seller attributes are informative in diagnosing product and transaction characteristics and potential buyer risks. The seller attributes that we identify are likely familiar, with the exception of the concept of a persona, which derives from Jungian psychology (Jung & Long,

1916); herein, we define a persona as the public role that a seller assumes and displays. Based on an examination of existing deceptions, we argue that deceptive online auction sellers create, project and sustain (as needed) one of two possible personas, or self-presentations, to the market. A positive, benign (BP) or neutral seller persona projects an innocuous, competent, likable, or, to evoke sympathetic (e.g. due to an alleged calamity) character.

In contrast, the goal of a negative or threatening (NT) seller persona is to harass, threaten, intimidate, or otherwise compel the target to perform a desired act. While other personas, and combinations of persona characteristics, are possible, our data suggest that the BP and NT personas are most frequent in the online auction market. However, market evolution and innovations in seller deceptions are likely to generate altered or additional personas beyond those articulated herein.

Seller characteristics are not of inherent interest to buyers; their usefulness is instead as predictors of product and transaction risk. For example, buyers care about a seller's knowledge and honesty because these attributes predict product and transaction characteristics.

Online Auction Seller Deception Stratagems and Tactics

What strategies and tactics are online auction sellers likely to employ to deceive potential buyers? Bell and Whaley's (1982, 1991) taxonomy of deceiver stratagems and tactics provides a useful framework for considering online auction deception by sellers, and has been applied to online deception by GJ (2003); Xiao and Benbasat (2011) adopt a similar taxonomy in their consideration of e-commerce deceptions. Table 2 presents the Bell and Whaley generalizable deception taxonomy. We adapt this taxonomy as a framework for classifying data on the frequency and distribution of observed online auction deceptions.

Insert Table 2 about here

Bell and Whaley (1982, 1991) propose two broad deceit stratagems: (1) *hiding the real*

(i.e. concealment) and (2) *showing the false* (i.e. simulation). *Concealment* influences the target by preventing the target's access to otherwise observable phenomenon. In contrast, *simulation* influences the target by offering a distorted (i.e. simulated) image of reality. The second level of the Bell and Whaley deception taxonomy identifies the tactics associated with the deceit stratagems. Bell and Whaley (1982, 1991) suggest three concealment tactics: *masking*, *repackaging*, *dazzling*, and three simulation tactics: *mimicking*, *inventing*, *decoying*. Rational deceivers choose from these deceit strategies based on their feasibility, and, the joint likelihood (i.e. in combination with other strategies) of their success in increasing the likelihood and amount of desired payoffs.

Masking, the first of the three hiding (concealment) tactics, hides the real through invisibility. For example, an online auction listing that provides a photograph that is plagiarized from the product manufacturer, rather than an actual photograph of the listing object, often masks specific characteristics of the object to be sold. *Repackaging or relabeling* (hiding tactic #2) disguises the real. For example, describing a "mystery box" sold in an online auction listing as an "exciting opportunity", when in fact, the box contains worthless trash, illustrates repackaging. *Dazzling* (hiding tactic #3) hides the real through confusion. For example, consider an online auction seller who accepts merchandise returns within seven days of the receipt of the goods. However, this information is not provided in the seller's auction listings – which states "email for returns policy". Potential buyers who email the seller prior to purchase are told that the seller has a "generous returns policy". However, after purchase, the returns policy is disclosed along with a threat that violations of this policy will result in retaliatory negative

feedback. This case, which is drawn from an actual eBay seller transaction, illustrates a *dazzling* deception tactic.

Mimicking (showing tactic #1) shows the false through imitation. It occurs when deceivers create advantageous effects, i.e. go on the offense rather than merely engaging in masking. Selecting one or more characteristics of “the real” in order to achieve an advantageous affect creates a replica of reality. Mimicking creates an effect, false or real, that must not be revealed as an illusion until the deceiver gains the intended advantage. A common mimicking tactic among online auction sellers is to imitate the language used by honest sellers in their listings. In addition, the representation and sale of counterfeit products in online auctions is a commonly used mimicking tactic (cf. Stewart et al. 2011).

Inventing (showing tactic #2) shows the false by displaying a different reality. Inventing involves producing something unique and useful through imagination or experiment (Webster’s 2005). Inventing shows the false but feigns the genuine (e.g. typical or legitimate trade) practice. For example, an online seller’s listing of merchandise for sale, which they do not own or possess, illustrates an inventing tactic (GJ 2003). *Decoying* (showing tactic #3) shows the false by diverting attention from the real. For example, one on-line auction decoying strategy is to send potential buyers email messages with promises of especially good deals on transactions executed away from the auction website and its buyer protections. In such cases the “seller”, actually a deceiver, deceives the buyer into providing financial information, such as a credit card number, or purchasing an item that is never delivered.

PUBLICLY DISCLOSED ONLINE AUCTION SELLER DECEPTIONS

Motivation and Research Questions

What form do seller deceptions in online markets assume? Next, we collect and analyze archival data to empirically investigate four research questions related to publicly disclosed online auction seller deceptions. Specifically, we extend the time period of data and analyses that are originally reported in GJ (2003). The specific research questions that we investigate with these data are:

- What are the domains, stratagems, tactics, issues, and, product categories of publicly disclosed online auction seller deceptions? Insight into this question is potentially useful in educating buyers and in designing mindful responses to deception among buyers and market stakeholder.

Deception strategies and tactics evolve (Bell and Whaley 1982, 1991). GJ (2003) hand-collect data from public databases to identify cases reported between 1995 and 2000. Hence, one reason for extending the data collection reported in GJ (2003) is to better understand the extent and rapidly of the evolution of online seller deception tactics. Understanding the extent, frequency and nature of the evolution of online deception is important to informing buyers and stakeholders of the (potentially changing) nature and sources of deception risk. Accordingly, the final three research questions relate to longitudinal changes in online market deceptions:

- Has the frequency of publicly disclosed online auction deceptions by sellers changed?
- Have online auction seller deception strategies and tactics evolved?
- Have online auction deception issues, domains and products evolved?

Sample, Data and Content Analysis Coding

We next consider archival data from a sample of publicized (known) online auction seller deceptions. Multiple sources (e.g., Cronbach & Shapiro, 1982; Cronbach, 1980; Shadish et

al., 2002) advocate the desirability of defining the “utos” i.e. the units, treatments, outcomes, and settings of samples in research that aspires to generalization (cf. Dube and Pare 2003). In our sample, the “utos” are as follows:

- Units: a single online auction transaction in which a sale occurs.
- Outcomes: there is a publicized allegation of deception or fraud by the auction buyer, the auctioneer, law enforcement, or a regulatory agency, e.g. the SEC.
- Settings: an online (i.e. internet-based) auction lists a product or service that is available to buyers who bid on the product or service.
- Treatments: None. We do not collect a separate group of control, i.e. legitimate, transactions to contrast with the observed (treatment) condition of deceptive transactions.

Hence, all observed deceptions are “treatment” condition observations.

We requested and obtained data from a sample of publicized internet deceptions (GJ 2003). The original data set consists of 201 diverse cases of internet deception, including cases related to fraudulent, non-auction offerings of medical cures, sexually explicit content, work-at-home schemes and stock sales. Cases were identified by searches of ABI/Inform, Lexis/Nexus, and Dow Jones Interactive.

In 42 of the 201 cases (20.9%), victims (i.e. targets) were auction buyers and perpetrators were auction sellers. This portion of the original GJ (2003) sample is relevant to our investigation. To expand this sample to include 2001-2008, we followed procedures recommended in the content analysis literature for the coding of cases (e.g., Krippendorff 2004,

Neuendorf 2002, United States General Accounting Office 1996). Specifically, we trained two paid assistants to follow the same procedures as described in GJ (2003), specifically, to collect data on online auction deceptions by sellers from 2001-2008. Analysis indicated 80 cases of online auction seller deception from 2001 to 2008. To ensure consistency across the earlier, i.e. GJ (2003) 1995-2000, and later, i.e. 2001-2008 samples, the paid assistants

independently coded all cases, including those from the GJ (2003) 1995-2000 data, on the following dimensions: seller deception tactics, issues and domains, and product categories. Coder agreement was excellent (between 97.7% and 100%) for these codings, both between coders within the 2001 - 2008 data, and in comparing the new codings (i.e. for the 2001-2008 data), with the original codings found in GJ (2003). Differences were resolved by discussion among the coders, or when needed, by consulting with one of the authors.

Models and Analysis

To investigate research question 1 (i.e. the domains, stratagems, tactics, issues, and product categories of publicly disclosed online auction seller deceptions), we present categorized frequency data. To investigate question 2, we report results for a regression model that includes linear and curvilinear (squared) terms with year (1995-2008) as the predictor variable and the number of deceptions as the dependent measure. The linear term tests for monotonic increases or decreases in the number of reported deceptions, while the squared term tests for curvilinear changes in reported deceptions.

To investigate research questions 3 through 4, we test for evidence of an evolution in the characteristics of publicly disclosed deceptions by comparing the GJ (2003) 1995-2000, versus the 2001 – 2008, data. For dichotomous dependent variables, i.e. deception tactics and issues, we analyzed the data using binary logistic regression (Huck 2008). For multinomial dependent variables, i.e. number of tactics identified per case and products, we analyzed the data using multinomial logistic regression.

Results

We observe 122 deception tactics across the 112 cases (where 42 of the cases are from GJ (2003), and, 80 are from the 2001-2008 period). Research question 1 seeks to understand the domains, stratagems, tactics, issues, and, product categories of publicly disclosed online auction seller deceptions. Table 3 cross-tabulates the number of identified cases in the two primary

domains, i.e. product and transaction, against the identified seller deception tactics. Of the 12 possible combinations of primary domains and deception tactics, nine cells are represented in the data. The three cells for which there were no observations are within the product domain, which is less frequently observed (~ 9% of cases) than is the transaction domain (~ 91% of cases). Panel A presents the results for hiding stratagems; panel B presents the results for showing stratagems. Showing (~ 80%) stratagems (n = 113) were about four times as frequent as were hiding (~ 20%) stratagems (n = 28). Within the hiding stratagems, about 82% of the cases involved masking or repackaging tactics, while about 18% involved a dazzling tactic. Within the showing stratagems, the mimicking tactic dominated: it represented about 94% of the observed cases. Accordingly, the modal cell, representing approximately 70% of the observed cases, of online auction seller deception is within the transaction domain and involves a mimicking tactic.

Insert Table 3 about here

Research question 2 asks if the frequency of publicly disclosed online auction deceptions by sellers has changed over time. Figure 1 plots the number of identified cases by year. A regression with year as the predictor variable and the number of cases as the dependent variable is not significant ($p = 0.923$). However, inspection of the plot suggests the existence of an inverted U relationship between time and number of reported deception cases.

Accordingly, we tested a regression that included year, and the negative square of year -- to capture an inverted U relationship -- as predictor variables. Overall, this regression is marginally significant ($F(2, 11) = 3.499$, $p = 0.067$) despite the low statistical power, i.e. high probability of falsely failing to reject the null, that results from a small sample (i.e. $n = 14$ years). Both the linear ($t = 2.598$, $p = 0.025$), and squared term ($t = 2.642$, $p = 0.023$) effects are significant in this regression. Multicollinearity is moderate (condition index = 19.206) but insufficient to cause coefficient error variance inflation (cf. Belsley (1991)).

| **Insert Figure 1 about here**

The positive linear coefficient in the regression reflects an increase in cases over the period 1995 to 2003. The significant curvilinear effect indicates that the largest number of cases appears in 1999-2003 with fewer reported cases between 1995-1998 and 2004-2008. Taken as a whole, the data indicate an initial increase in cases in 1995-2003, with a peak between 1999 and 2003, and a subsequent decline in reported cases. Hence, the data suggest some maturity in online auction market deception, since the reported number of cases declines over the final five years of our sample.

Our third research question asks whether online auction seller deception strategies and tactics evolve between the earlier and later data sets. Table 4 Panel A compares the perpetrators, prosecutions of perpetrators and frequency of tactics in the 1995-2000 vs. 2001-2008 data. The results indicate that more recent auction deceptions are more likely to be perpetrated by a consumer (not a business), have fewer deception tactics per case, and fewer hiding tactics per case. We find no evidence of a longitudinal change in the frequency of prosecution of seller deceptions or in the number of showing tactics per case.

| **Insert Table 4 about here**

Table 4 Panels B and C present data on the 1995-2000 versus 2001-2008 frequency of hiding and showing stratagems, respectively. We find evidence of a decreased frequency of use of five of the six deception tactics, although only two of these decreases are statistically significant, i.e. the decreases for masking and repackaging tactics. Only the use of the mimicking tactic increases between 1995-2000 to 2001-2008. The mimicking deception depends upon an existing, stable market. Accordingly, the increased use of this tactic is consistent with increasing maturity (i.e. greater imitation, in seller deception tactics in the 2001-2008 market).

Research question 4 asks if online auction deception issues, domains and products have evolved. Tables 5 and 6 present evidence on the evolution of deception issues and domains, and

product categories, respectively, from 1995-2000 to 2001-2008. We find no evidence of changes in deception issues and domains (See Table 5). Approximately 80% of the deceptions involve the non-delivery of merchandise, which is within the transaction domain. The remaining 20% of deception issues involve identity theft (transaction domain), or merchandise ownership or value (product domain). We also find no evidence of evolution in the product categories chosen by sellers for committing deception (See Table 6). Across the sample, deception occurs more frequently in the category of electronics and computers. Deceptions involving collectibles, and multiple product deceptions, also occur in greater than 10% of the cases across both sample periods.

| **Insert Tables 5 and 6 about here**

Summary and Limitations

Analysis of the 112 publicly disclosed cases of online auction deception by sellers between 1995 and 2008 indicates the following observations. Nine of the possible twelve cell combinations of two primary domains (product and transaction) and six seller deception tactics obtain in the data. The modal online auction seller deception involves a mimicking tactic related to the non-delivery of electronic or computer products. The number of reported deceptions per year forms an inverted “U” curvilinear function, with maximal deceptions reported in 2003. Recent deceptions are more likely to be perpetrated by individuals (vs. businesses), are less complex (i.e. use fewer tactics), and more frequently use a “mimicking” deception tactic. There is no evidence of longitudinal change in domains, issues or product categories.

An important advantage of the analysis of archival data is higher external validity (Shadish et al. 2002). In this study, we examine actual publicly reported cases of seller deception in the rapidly evolving online auction market. A disadvantage of this data and method however, is lower internal validity, i.e. a lessened ability to determine causality, i.e. how and why specific results obtain. For example, we observe an inverted “U” relationship over time in reported

auction deceptions. However, this relationship could obtain because it reflects the true number of deceptions in the market, or, the lessened reporting of deceptions as the online auction market matures and the novelty of online auction deceptions declines.

In addition, investigating fraud using archival data includes important sampling limitations. Despite the apparent commonness of deception in the online auction marketplace, financial fraud, even on eBay, is still a “low base rate” event (cf. Johnson et al. 2001), meaning that it is comparatively infrequent in any sample of economic transactions. Hence, large sampling frames of transactions are necessary to extract a usable set of potentially deceptive transactions for analysis. These limitations make the scientific study of deception difficult, and make individual learning from previous deceptions problematic and unlikely (Brehmer 1980).

We address this issue by extending the time period of an extant database of online auction deceptions, building a model of deception by synthesizing previous research with this data, and proposing mindfulness as a means for achieving greater fluidity and awareness in buyer behavior in the online auction market. This effort contributes to knowledge both by the archiving of deception cases, for future research, and our efforts to model deceptive practices, and means for buyers to detect these deceptions. We next consider the nature and difficulty of detecting online auction seller deception and propose a model, based on the construct of mindfulness, for detecting such deceptions.

A MODEL OF MINDFUL BUYER DETECTION OF SELLER DECEPTIONS

Media richness theory proposes that the "bandwidth", or capacity, of a communication channel influences success in accurately detecting deception (Carlson and George 2004, Trevino et al. 1987). Detecting deception is difficult (e.g., Johnson et al. 2001, Carlson and George 2004, George et al. 2004) even in rich communication channels that include nonlinguistic cues such as body language, voice tone, gestures, and other social cues as to meaning and intent (e.g. DePaulo et al. 1983, Frank and Ekman 2004, Vrij and Mann 2004). But detecting deception is far more

problematic in the “thin” communication channel (Carlson and Zmud 1999, Carlson and George 2004) ecology of the online auction, in which most communication consists of reading textual, numeric, and sometimes pictures, provided by a seller, on a computer screen. In the online auction, potential buyers cannot observe cues that are present in face-to-face or telephone interactions that are known to be associated with higher deception rates, e.g. increased eye blinking, changes in voice pitch, increased self-grooming (George et al. 2004, DePaulo et al. 2003). In addition, language constructs, which are of greater importance in the “thin” online, than in the “thicker” “meatspace” ecology, include the property of “glossing” or abstracting from

reality:

By its very nature, language represents a small sampling of reality. Just as a map represents only some features of the territory it covers, language represents only selective features of what it symbolizes. To the extent that people believe in the “allness” of language, they may be deluded into regarding it as a comprehensive mirror of reality (Burgoon and Langer 1995, p. 114).

The "thinness" of online auction media, combined with the "... remoteness of the process, the immaterial nature of information and the virtual interaction with faceless individuals" (Floridi 1999, p. 5), likely contribute to the popularity of online auctions as popular venues for seller criminals. In addition, Burgoon and Langer (1995) argue that mindlessness is more likely when low levels of effort are required, and when the surface properties, and behavioral routines, of a context resemble those of previously experienced contexts. These predictors of mindlessness can be applied to predict conditions of low mindfulness among buyers in the online auction market. Online auction buyers who have some, but not substantial, experience and familiarity with online auctions are likely to conceive of online auctions as requiring low effort (bidding from a computer at home), of having surface properties and routines that resemble other purchases (information about the seller, transaction, and product is required), and as containing low levels of risk. Next, we propose a model of mindful buyer assessments of auctions that: (1)

is informed by the deceptions observed in the archival analyses and (2) builds upon and extends research into deception detection (GJ 2003, Johnson et al. 1993, Johnson et al. 2001) and mindfulness of communication processes (Burgoon et al. 2000). But mindfulness requires the adoption of fluid, tentative categorizations (Krieger 2005). Hence, while the categories that we propose are consistent with observed online auction deceptions, a mindfulness information processing perspective requires openness to new categories and a future reconfiguring and re-conceptualizing of existing categories.

Synthesis and integration of research on deception detection (e.g., Johnson et al. 1993, 1991, 1993, 2001), the identification of fraud (e.g. Wells 1997, 2004, 2005), online auction deception (Nikitkov and Bay 2008, Steiglitz 2007, Walton 2006, Klink and Klink 2005, Albert 2002), and the application of mindfulness to deception detection (Burgoon et al. 2000), leads us to propose Figure 2, which articulates the attributes, and the sequence of attributes, of an online auction listing that are evaluated by a “mindful” buyer. Product (or service) attributes are the principle motivation for an online transaction; hence, the buyers’ evaluation process begins with the evaluation of product attribute acceptability. If product attributes are acceptable, evaluation proceeds to evaluation of potential sellers, to determine if they have acceptable attributes, e.g., a credible and trustworthy transaction history, including an attractive or repelling persona. The final phase of the sequence of the buyer’s evaluation considers the transaction attributes, which include delivery, payment, and shipping terms and timing.

Insert Figure 2 about here

Based on integrating financial deception detection (Johnson et al. 2001; Johnson et al. 1993) with the construct of mindfulness, we propose a five-step process that is useful in contrasting a “more mindful” versus “less mindful” potential buyer’s evaluation of an online market listing. The informational categories and attributes to which mindfulness buyers should attend derive, primarily, from our analysis of previous online auction deceptions. The

mindful buyer's evaluation process proceeds in sequence as follows, across the product, seller and transaction domains:

Acquire cue information.

Mindful buyers conduct an exploratory, broad search; they attend to both confirming and disconfirming cue information from the three domains of the auction listing. Hence, they acquire information as to whether the (a) product is likely to meet their expectations, (b) the seller is trustworthy and (c) transaction characteristics are acceptable (cf. Darley and Fazio 1980, Klayman and Ha 1987). In contrast, less mindful buyers seek evidence that confirms their desired outcome, and consequently may prematurely commit to a hypothesis that a seller is trustworthy (cf. Burgoon and Langer 1995).

For example, less mindful buyers may conduct a cursory evaluation of product characteristics to confirm that these characteristics are as desired (e.g., "Wow – what a bargain this is!"). Based on analysis of case studies in online auction buyers were deceived (e.g. Gu 2007, Hitchcock and Page 2006, Silver Lake Editors 2006, Willcox 2005, Klink and Klink 2005, 2007), less mindful buyers focus more heavily on product characteristics and are less likely to acquire secondary cue information related to seller and transaction characteristics.

Cue integration and hypothesis generation. Mindful buyers process cue information "configurally" or holistically (i.e., they attend to combinations of cue patterns of possible deceptions); grouping related cues into coherent patterns gives rise to hypotheses of potential deceptions. For example, we observed one case in which a focal seller's feedback rating derived from multiple positive feedbacks from novices and recently deregistered users. While the seller's feedback, on the surface, appeared to be outstanding – i.e., 100% positive with > 50 successful transactions, examination of the source of the feedback suggested the use of a mimicking strategy (Bell & Whaley 1991); specifically, the seller appeared to build a positive reputation by

self-postings using alias accounts. Generating a hypothesis of seller deception in this case required mindfully integrating cues across multiple accounts and auction outcomes

contrast, less mindful buyers are more likely to attend to individual auction product characteristics or overall feedback ratings, but to fail to successfully synthesize across patterns of cues to detect deception.

Hypothesis evaluation and decision. The buyer's recognition and awareness, and active consideration, of the hypotheses that the seller is deceptive is of particular important to understanding the role, and potential contribution, of mindfulness to online auction evaluation. Mindful buyers recognize and consider the possibility of seller deception as a possibility; they hold this hypothesis in tension -- in ambivalence -- neither fully accepting nor rejecting it until after considering the evidence to their satisfaction.

In contrast, less-mindful buyers more often assume that the seller is honest and trustworthy and that unrealistically low prices are bargains; they then "see" evidence in the auction listing that confirms these hypotheses and act accordingly. Failure to consider the hypothesis of seller deception, or failure to integrate information that informs the evaluation of this hypothesis, increases the risk of purchasing a defective, nonexistent or never-delivered product, from a deceptive seller.

Buyer Mindfulness in Online Auction Listing Evaluation: An Example

Of what value is the model of buyer mindfulness? Of what practical value are the data related to online auction seller deception tactics, issues, domains and product categories? We next consider examples, based on observed cases on seller deception, of high and low levels of buyer mindfulness in evaluating a listing. The first example illustrates a low mindfulness, and the second a high mindfulness, buyer evaluation. Table 2 summarizes the core evaluation processes of these examples. In both cases, a potential online auction purchaser of limited online auction experience, for example, a college student, office administrative assistant, or solicitor (attorney),

wants to buy a new 8gb iPod Touch MP3 player. Both cases begin with buyer acquisition of core cue information.

Initial Cue Information Acquisition

eBay auction listings reveal buy-it-now prices for the desired product of between \$165-215 plus tax (where applicable) and shipping; the price is very attractive -- approximately \$70 less than the retail price at Apple.com. The listing with the least expensive price, i.e. \$165, shows a picture and description of the iPod. The seller's location is listed as US; he or she accepts PayPal and credit cards; shipping policies seem normal. The seller's reputation feedback page indicates a 100% positive reputation consisting of 87 transactions, mostly for sales. Written buyer feedback evaluations praise the seller's dependability and fast shipping.

Low Mindfulness Buyer Evaluation

Cue Integration, Hypothesis Generation and Evaluation, Decision

Based on this analysis, the potential buyer purchases and pays for the iPod; it never arrives. Email messages sent to the seller are unacknowledged. Four weeks after the purchase, the seller's account is "delisted", i.e. is removed by eBay. The recoverability of the lost payment depends on the payment method, the seller's actual (not necessarily listed) country and the buyer's willingness to pursue recovery.

High Mindfulness Buyer Evaluation

Acquire Cue Information

Additional evaluation of the core cue information reveals the following: Comparison of the auction listing picture and description of iPod Touch, with those at the Apple website, reveal that the picture and description are copied from the Apple website. The buyer clicks through the seller's profile in order to examine the profiles of the buyers who have purchased from this seller. All buyers from this seller are from one of three groups: (1) novices with less than ten

transactions on eBay, (2) eBay member IDs who are no longer registered users, or (3) members with “private” (hidden) feedback. Finally, the seller has not listed the item’s location; in the item location field, the seller states, “Seller guaranties the product”.

Cue Integration and Hypothesis Generation

Integrating the pattern of cues gives rises to following hypotheses regarding potential seller deception tactics:

- The copying of “stock” product pictures and descriptions suggests the use of a *masking* tactic that attempts to obscure relevant information. Original, i.e. not copied, product photographs and descriptions often include product information about defects (e.g., scratches) and history, e.g., a factory stamp or label indicating a “refurbished” or “second” product or a product identification number.
- The seller’s reputation profile suggests the use of a *mimicking* tactic that copies or imitates the characteristics of honest traders. The three categories of buyer accounts that have purchased from this seller are all potential indicators of secondary accounts that the seller has self-created in order to generate fictitious sales and fraudulently inflate his or her feedback rating.
- The seller’s eBay account is registered in the United States (US) but the listing does not indicate an item location. Instead, this field states: “Seller guaranties the product”. This inconsistency suggests that either the seller or the product may not be domiciled in the US. This suggests that the seller may be using an *inventing* deception tactic. That is, providing false information that differs from the expected "rules of the game”.

The spelling of the word “guaranties” is not the U.S. spelling, which is “guarantees.” This suggests that the seller is not American and suggests the use of a flawed *mimicking* tactic, in which a non US seller has attempted to, but failed, to *mimic* a US listing.

Hypothesis Evaluation and Decision

The pattern of cues is sufficiently suspicious as to lead to the buyer to conclude that the listing is deceptive. The potential buyer rejects the opportunity to purchase from this seller and investigates other eBay auction listings using a similar evaluative process.

CONTRIBUTIONS, LIMITATIONS AND CONCLUSION

Implications of a More Mindful Market

The starting point for this investigation are economic models which suggest that market failure can occur under conditions of quality uncertainty and information asymmetry, where sellers know more about products than do buyers (Akerlof (1970); Levin (2001)). To address these problems, this paper extends Burgoon and Langer’s (1995) suggestion, i.e., to explore mindfulness as a means for reducing deception and fraud, to the problem of seller deception in the online auction market. Specifically, we propose: (1) the use of mindfulness principles to advance understanding of the buyers’ problem of detecting deception within online auctions and

(2) a model for detecting deception and use it as a basis for investigating the nature and evolution of online auction deception by sellers. We then gather and report data on the nature of seller deception in online auction markets, and, synthesize the data into a model of the mindful auction buyer.

Mindfulness has been extensively explored at the level of the individual, and, although somewhat less, at the level of the organization. However, discourse regarding a market-level

construct of mindfulness is far less developed. Accordingly, we next consider the nature of the mindful market; how would a "mindful" online auction market, that is, one in which buyers evidenced higher levels of mindful behavior, differ from the present market? We argue that a mindful online auction market would be evidenced by:

1. *Curiosity and Questioning.* Mindfulness includes a natural and innate curiosity about the way of things. A mindful online auction market would be populated with curious buyers who explore seller behavior by prodding and poking with questions, following Weick's (1985) suggestion of an "effectuating" strategy -- of learning through acting and questioning to make sense of the information available in online environments.

Hence, one would expect greater information search and synthesis – motivated by curiosity -- among buyers in a mindful online market.

2. *A Process and Outcome Focus.* Market outcomes, including selling prices, delivery dates, and the quality and nature of deliverables, would remain important in the mindful market. However, one would also expect mindful buyers to evidence greater attention to the processes that underlie market transactions. Hence, the mindful market could be expected to include buyer greater attention to, for example, the quality of communication and interactions among stakeholders, and to satisfaction with, and the adequacy of, representations, including auction listing texts and pictures, in the mindful market.

3. *A Refined Capacity for Knowing.* Mindfulness is a way of being and knowing (Kabat-Zinn, 2005). It includes a commitment to greater awareness, and attention to the present; hence, the quality and level of information processing – that is of knowing – would be higher in the mindful market.

4. *Seeking Patterns not Cues.* Mindful market stakeholders are more likely to seek to identify patterns or interactions of deception cues rather than focusing on individual cues, in deception identification. Such an approach is consistent with previous

research investigating the patterns of deception that are associated with financial statement frauds (Johnson et al. 1991; Johnson et al. 1993, 2001; Jamal et al. 1995). Further, research on the judgment processes used by experts suggest that such "broken leg cues", which are based on identifying patterns among cues, are integral to experts' reasoning processes (e.g., Goldstein and Hogarth 1997). Hence, mindful auction stakeholders are more likely to engage in "sense making" in which seemingly disparate flows of information are pieced together into a coherent whole, much like bringing together the seemingly unrelated pieces of a jig-saw puzzle, until the "gestalt" or whole emerges.

5. *Appropriate trust.* Trust among stakeholders is essential to market, including online market, success (Lee et al. 2005). Flexible and thoughtful information processing by buyers will reduce the success of common, simple seller deceptions. Accordingly, mindful buyers would be expected to have higher levels of appropriate trust and to thereby facilitate market expansion.

6. *Reduced price volatility and market bubbles.* Viewed from a long-term perspective, markets, with some regularity, engage in boom and bust cycles in which true economic values diverge from market prices (e.g. Atack and Neal 2009). In a mindful market, in which buyers more carefully attend to available evidence, one would expect reduced volatility and divergence between true values and market prices. Fiol and O'Connor (2003) make this point in arguing that mindfulness will reduce the

extent and influence of “bandwagon” effects, in which social pressures lead to the organizational adoption of misguided policies and strategies.

7. *Adaptability and evolutionary fitness.* The key element of the construct of mindfulness is flexible, contingent, contextually grounded information processing. In the face of evolving deceptions, fluid, non-algorithmic nature of mindfulness is critical to evolving and evolutionarily fit market. Hence, mindfulness has the capacity to enhance and increase market adaptability.

Responsibility and engagement. Mindfulness includes an acceptance of responsibility for, and a commitment to enhancing, one's attention and awareness. In a market context, this would include buyer responsibility for the quality of individual's search processes and market outcomes. In a laissez-faire market – such as the present online auction -- buyer responsibility for transaction processes and outcomes is essential to market growth. Such responsibility and engagement may include developing communities of practice who adopt shared responsibility for monitoring seller and buyer behavior in the market (e. g.,Chua et al.2007)

The mindful market is a middle way – between excessive risk and foregoing market opportunities. And while of great benefit, mindfulness among buyers is no utopian solution or panacea. Both mindful and unmindful markets would still include the processes of “creative destruction” (Schumpeter et al. 2011) that create both efficiency and instability. Hence, we propose mindfulness – not as a panacea – but rather a guiding principle in the control of deception risk, and, the design of market controls. One potential application of these principles is in creation of “technologies of mindfulness”, which could help users parse the information streams of online markets.

For example, some research proposes the use of systems, based on machine learning models, for identifying and classifying complex patterns of deception cues (De Wilde 1997, Huang et al. 2004). Four identified studies model some aspect of internet-based fraud detection. Ku et al. (2007) use social network analysis (SNA) to identify internet auction fraud and achieve a “hit rate” (correct cases / total cases) of over 90% for a

sample of 100 transactions. Chau et al. (2006) and Zhang et al. (2008) use a Markov Random Field (MRF) to detect fraudulent activities, though little validation evidence is provided in these early-stage reports from on-going research. Abbasi and Hsinchun (2009) compare the predictive validity of five machine-learning models for predicting fake-escrow websites; they find that a support vector machine model best predicts fraud outcomes. While currently focused on model development, these efforts suggest that machine-learning research may eventually create robust, assumption-free, nonlinear, data-informed machine-learning predictive models that could be used in assisting market stakeholders, including buyers, regulators, and market facilitators, to identify seller deceptions.

Conclusion

This article seeks to guide buyer strategies for detecting seller deception in online auction listings. Our study joins an important, growing, and understudied problem -- detecting online auction seller deception -- with a construct (mindfulness) that has, heretofore, been largely unexplored at a market level of analysis. One pragmatic goal of such research is to enable online auction stakeholders, including buyers, regulators, and market facilitators, to anticipate and identify the strategies and tactics of seller deceit. A related goal of this endeavor is to facilitate the construction of systems, and to identify the relevant informational and architectural components, that better inform online auction stakeholders of the risk of seller deception.

However, fraud strategies and tactics evolve. Today's successful deceit tactic (e.g. the Nigerian fraud letter scheme) becomes tomorrow's harmless, overused annoyance. Though an uncomfortable realization for buyers and consumers, the evolving nature of deception promises deception researchers, and unfortunately online consumers, with an unending stream of future online market deceptions. However, innovations occur within a fixed set of seller deception tactics and buyer strategies for detecting these tactics. Identifying these deception tactics, and the means for their detection, can also be a means for building systems that better assist mindful buyers in preventing, detecting and correcting seller deception. Such systems are an important step towards the creation of the online auction market that "mindfully" addresses seller deception.

Figure 1
Number of Publicly Disclosed Seller Deception Cases by Year

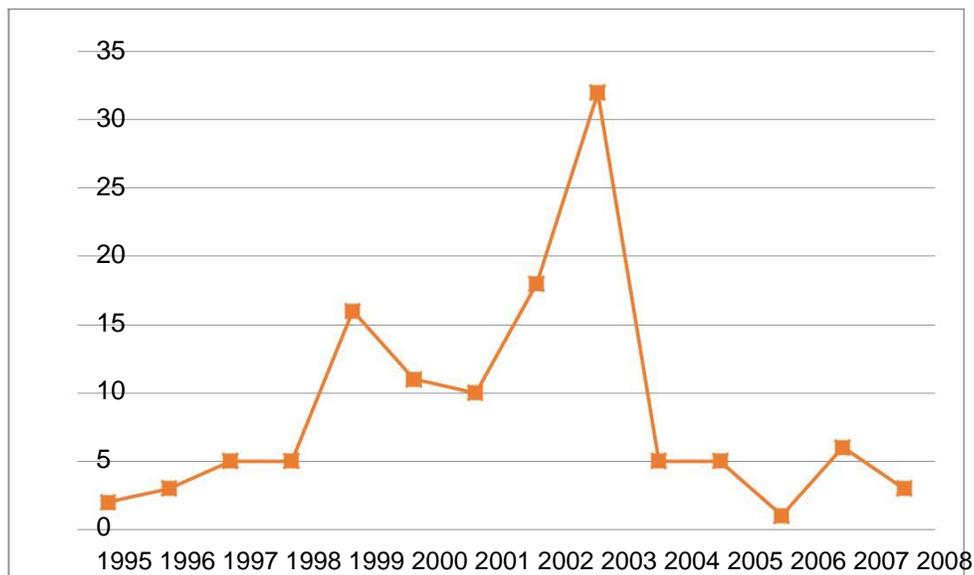


Figure 2

Sequence of “Mindful” Buyer Evaluation of an Online Auction

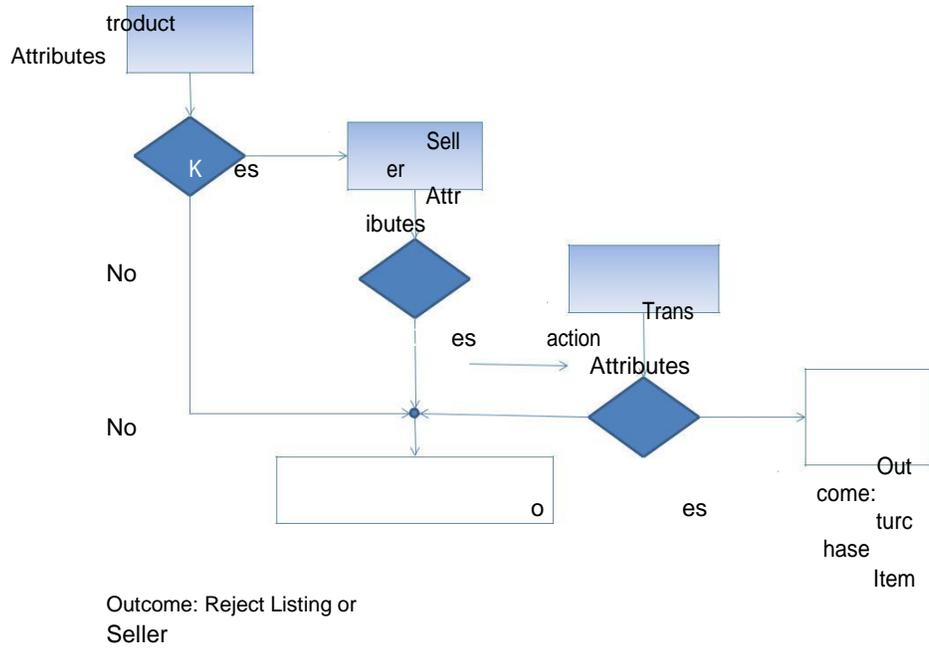


Table 1
Product, Transaction and Seller Domains, Attributes and Risks

Panel A: Product Domain

1. Fitness – will product work in expected application (e.g., software versions)?
2. Condition or authenticity – is product condition and authenticity accurately represented?
3. Existence – does product exist (e.g., promised by manufacturer but unreleased)?
4. Ownership – does seller own product?
5. Location – is product where the seller claims (US versus offshore)?
6. Legality – is product legal in buyer's market?
7. Price – is product price, relative to value, too high or low?

Panel B: Transaction Domain

1. Location – is transaction within or outside (riskier) the market maker's systems?
2. Repudiation – does seller deny transaction contract or provisions?
3. Sequence, Timing, and Fulfillment – expected execution of the following events:
 - *Seller actions:* auction listing, delivery for shipping, posting feedback for buyer, reply to buyer feedback (if desired)
 - *Buyer actions:* sale (i.e. purchase), payment, feedback posted for seller, reply to seller feedback (if desired)
 - *Shipper action:* Delivery
4. Information or buyer identity theft
5. Communication disruption – seller disrupts transaction communication (e.g., by delisting)

Panel C: Seller Domain

- 1) Honesty – seller honesty (i.e. opportunistic or honest (Dellarocas 2005))
- 2) Knowledge and capability – extent of seller's product, internet, and online auction knowledge
- 3) Persona (e.g., positive, cooperative vs. negative, threatening)
- 4) Location – is seller's physical location disclosed and accurate?

Table 2
Deception Stratagems and Tactic Definitions

Tactic	Definition
Stratagem: Hiding (Concealing) – Prevent accurate perception of the deception	
Masking	Obscure, eliminate or erase information
Repackaging / Relabeling	Disguise real with descriptions or representations that suggest validity
Dazzling	Hide by confusing: Obscure or blur information with irrelevancies
Stratagem: Showing (Simulating) – Present falsified representation of the object	
Mimicking	Show false through imitation, e.g., copy characteristics of honest traders
Inventing	Show false with a newly created reality outside of the “rules of the game.”
Decoying	Show false to divert attention from real

Adapted from Bell and Whaley (1982, 1991)

Table 3
Cross Tabulation of Domains by Deception Tactics
Panel A - Hiding Tactics

	Domain		
	Transaction	Product	Total
Masking	7	3	10 (35.7%)
Repackaging / Relabeling	11	2	13 (46.4%)
Dazzling	5	0	5 (17.9%)
Total	23 (82.1%)	5 (17.9%)	28 (100%)

**Panel B – Showing
 Tactics**

	Domains		
	Transaction	Product	Total
Mimicking	99	7	106 (93.8%)
Inventing	2	0	2 (1.8%)
Decoying	5	0	5 (4.4%)
Total	106 (93.8%)	7 (6.2%)	113 (100%)

1995-2008 data, n = 122 cases

Table 4
Comparison of 1995-2000 with 2001-2008 Publicized Auction
Listing Deception Characteristics and Tactics
Panel A – Perpetrator, Prosecution and Tactics per Case

	1995 -2000 (n = 42)	2001 -2008 (n = 80)	p	dj. r ² A
Business Perpetrator	0.20	0.01	0.007	0.240
Case Prosecuted	0.71	0.75	0.437	0.005
# of Tactics per Case	1.55	1.08	0.001	0.249
# of Hiding Tactics per Case	0.55	0.05	0.001	0.213
# of Showing Tactics per Case	1.00	0.98	0.72	0.007

· binary logistic regression;
 · Multinomial logistic regression;
 McFadden's R² reported for multinomial logistic regression; Nagelkerke R² reported for binary logistic regression.

Panel B - Hiding Stratagem Tactics

	1995-2000 (n = 42)	2001-2008 (n = 80)		dj. r ²
Masking	14.3%	3.8%	0.048	0.083
Repackaging / Relabeling	28.6%	1.3%	0.001	0.332
Dazzling	11.9%	0.0%	0.997	0.300

Binary logistic regression results; Nagelkerke R²

Panel C – Showing Stratagem Tactics

	1995 -2000 (n = 42)	2001 -2008 (n = 80)		dj. r ² A
Mimicking	76.2%	97.5%	0.002	0.223

ing	Invent	9.5	0.0	.997	.277
ing	Decoy	14.3	0.0	.997	.321

Binary logistic regression results; Nagelkerke R²

Table 5
Comparison of 1995-2000 with 2001-2008 Publicized Auction
Listing Deception Issues

	Domain	% of Cases 1995-2000 (n = 42)	% of Cases 2001-2008 (n = 80)	Adjusted R ²
Identity Theft	Transaction	0.07	0.04	.016
Non-delivery of Merchandise	Transaction	0.81	0.86	.008
Merchandise Ownership	Product	0.07	0.04	.016
Merchandise Value	Product	0.12	0.06	.021

P > 0.28 for all results

Binary logistic regression results; Nagelkerke R²

Two categories with less than 5% of total responses are omitted, i.e. shill bidding, fencing.

Table 6
Comparison of 1995-2000 with 2001-2008 Publicized Auction
Listing Deception Products

Products	% of Cases 1995- 2000 (n = 42)	% of Cases 2001- 2008 (n = 80)
Clothing or Apparel	0.02	0.06
Collectibles	0.19	0.15
Electronics and Computers	0.55	0.65
Financial Securities	0.07	0.00
Jewelry and Watches	0.00	0.10
Multiple Products	0.12	0.18
Sports	0.02	0.09
Miscellaneous	0.07	0.07

p values from logistic
 regressions $p > 0.20$ for all results

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