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RESEARCH PAPER

The Effects of Media Capabilities on the Rationalization of Online Consumer Fraud

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Abstract

This research develops and tests a model of online consumer fraud to determine how the capabilities of communication technologies affect the rationalization of fraudulent behaviors. The model is based on research about the rationalization of fraud, media capabilities, and computer-mediated deception. This investigation empirically tests this model by analyzing 459 Facebook advertisements and 1,896 surveys completed by university students. The findings indicate that the capabilities provided by communication technologies affect the extent to which media mask cues of deceit and dehumanize others. As a result, some media capabilities increase one's willingness to engage in fraudulent behaviors while other capabilities deter those actions. Media capabilities that mask cues of deceit and reduce social presence increase the inclination of individuals to rationalize fraudulent activities, while media capabilities that expose cues of deceit and increase social presence deter individuals from rationalizing acts of fraud. Media offering greater capabilities for reprocessability and transmission velocity decrease the inclination to rationalize fraud, whereas greater capabilities for anonymity, rehearsability, and parallelism increase the inclination to rationalize fraud. In contrast, symbol set variety does not appear to significantly affect the inclination to rationalize fraud.

Keywords: Fraud, Deception, Media, Communication, Media Capabilities, Synchronicity, Anonymity

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1 Introduction

Consumer fraud is a prolific and widespread problem for Internet-based commerce (Albrecht, Albrecht, Wareham, & Fox, 2006). Since 2010, the Internet Crime Complaints Center has reported average annual losses nearing \$1 billion (IC3, 2015). These schemes represent a growing concern because many of the same technology-mediated business practices that enable online commerce also enable online consumer fraud (Albrecht et al., 2006; Grazioli & Jarvenpaa, 2000). Although research has explored how computer-mediation affects deception detection (Carlson, George, Burgoon, Adkins, & White, 2004; Nunamaker, Dennis, Valacich, & Vogel, 1991; George, Carlson, & Valacich,

2013; Jensen & Chidambaram, 2015) and how media capabilities affect cooperative communication (Dennis & Valacich, 1999; Dennis, Fuller, & Valacich, 2008), there remains a research gap for describing how media capabilities affect online consumer fraud. This research seeks to address this gap and gain insights into how, and why, fraud occurs in online settings. The central research question asks: how do the capabilities of communication technologies affect the rationalization of online consumer fraud?

The answer to this research question is constructed from four key theoretical positions: (1) media offer varying

capabilities that affect communication performance (Dennis et al., 2008); (2) during deceptive communications cues of deceit are leaked into conversation affecting the success of subsequent deception (Ekman, 1997; Buller & Burgoon, 1996; George et al., 2013); (3) a reduced sense of social presence can foster antisocial behaviors (Bente, Rüggenberg, Krämer, & Eschenburg, 2008; Chatterjee, Sarker, & Valacich, 2015); and (4) individuals rationalize fraudulent behaviors before enactment (Rest, Bebeau, & Thoma, 1999; Murphy & Dacin, 2011). These theoretical perspectives support a position suggesting that prior to enactment, perpetrators deliberately consider whether or not a medium will support their efforts to successfully commit fraud.

This research provides theoretical benefits by determining the influence of media capabilities on fraudulent behaviors and describing the critical roles of motivation and rationalization in decision-making processes. This research also provides a methodological contribution by focusing on individual media capabilities (anonymity, rehearsability, etc.) instead of the general effects of media forms (e-mail, video conferencing, instant messaging, etc.). Finally, this research informs practice by identifying which media capabilities are most useful in deterring and detecting online consumer fraud and which media capabilities increase the risk of fraud behaviors.

The paper is organized as follows. First we review extant literature with a focus on the rationalization process that fraudsters use to justify their behaviors. Next, research discussing deception in computer-mediated contexts is examined. From these theoretical foundations, we develop a model of the effects of media capabilities on fraudulent behaviors. Then, the model is empirically tested in two independent studies. The paper concludes with a discussion of the findings and the implications for research and practice.

2 Theoretical Background and Model Development

2.1 Rationalization Fraud

Fraud is described as a dishonest act perpetrated by an individual for their own personal benefit (Wells, 1997). Fraud involves intentional misrepresentation; however, not all deception is of consequence. Exaggerations and “white lies” do not cause financial loss (Marett & George, 2013). Financial motivations commonly inspire fraud and monetary losses ensure that fraud has consequential impacts on victims (Carlson et al., 2004; Albrecht, Albrecht, Albrecht, & Zimbelman, 2012). Fraud occurs in settings where financial exchanges take place and victims suffer real financial damages (Cressey, 1953). Consequently, while fraud includes intentional deception, a

meaningful difference between fraud and other types of deception is that in the case of fraud, an individual must rationalize that their actions will cause real harm to their victims (Albrecht et al., 2012).

Rationalization is the psychological process that enables individuals to act dishonestly or immorally in certain contexts (Ramos, 2003). Rationalization occurs before action and differs from post hoc justifications (Ramamoorti, 2008). Functional magnetic resonance imaging studies (fMRI) have revealed physiological evidence that people engage in rationalization before making moral judgments (Jarcho, Berkman, & Lieberman, 2011). The rationalization process exists because people have a general disdain for deceptive acts and recognize normative pressures not to lie, cheat, or steal (Cressey, 1953; Murphy & Dacin, 2011). People usually strongly prefer avoiding causing harm to others (Cushman, Young, & Hauser, 2006; Greene & Haidt, 2002). During dishonest actions, individuals must reconcile contradictions between their intended actions and general attitudes, which is referred to as cognitive dissonance (Festinger, 1962; Ramamoorti, 2008). The discomfort associated with engaging in dishonest actions compels individuals to rationalize their behaviors within their personal ethical code (Rest et al., 1999; Albrecht et al., 2012).

People rationalize their dishonest actions by reinterpreting their dishonest intentions as moral within a particular context (Tsang, 2002; Anand, Ashforth, & Joshi, 2004). Individuals who engage in fraud generally recognize that their actions are dishonest, but rationalize their actions due to contextual factors (Ramamoorti, 2008; Rittenberg, Johnstone, & Gramling, 2011). During rationalization, contextual elements influence assessments of various outcomes associated with engaging in dishonest actions (Trevino, 1986). Individuals use these contextual elements to support a variety of psychological processes to rationalize unethical behaviors (Cressey, 1953; Murphy & Dacin, 2011; Rossouw, Mulder, & Barkhuysen, 2000; Rodgers, Söderbom, & Guiral, 2014; Tsang, 2002). For example, fraudsters may blame their victims for engaging in risky behaviors (Ramamoorti, 2008; Murphy & Dacin, 2011). Similarly, “neutralization” is a form of rationalization where individuals do not think that normal rules apply to their behaviors (Dellaportas, 2013; Sipponen & Vance, 2010). In other forms of rationalization, fraudsters may exhibit a lack of empathy for their victims (Murphy & Dacin, 2011), or may argue that their behavior avenges a perceived injustice (Albrecht et al., 1982). Fraudsters may also assert that responsibility for their actions is outside of their personal control, question the underlying morals that forbid dishonest actions, or justify their actions with the notion that others have already committed similar acts (Albrecht et al., 2012). These preaction

rationalizations are quick, automatic, affective responses to contextual elements (Schnall, Haidt, Clore, & Jordan, 2008), and individuals may not consciously recognize the rationalization approach they use (Haidt, 2001; Paxton & Greene, 2010).

This research focuses on an outcome of the rationalization process—the inclination to rationalize a fraudulent action—which we refer to as “rationalizing.” We adapted this construct from a wide array of research about fraud decisions and moral judgments (Loebbecke, Eining, & Willingham, 1989; Beasley, 1996; Wells, 2002; Choo & Tan, 2007; Zahra, Priem, & Rasheed, 2005), where the outcome of the rationalization process can be measured by a willingness to rationalize fraudulent behaviors (Cullen, Parboteeah, & Hoegl, 2004; Harrison, Summers, & Mennecke, 2016). The inclination to rationalize fraud is a moral judgment—an evaluation of prospective actions made in respect to moral disposition (Haidt, 2001). A person’s moral disposition is a stable tendency to act with consistent morals, but individual moral judgments vary with contexts (Grossman & Kim, 2000). Accordingly, rationalization plays a central role in ethical decision-making (Rest et al., 1999). Often, the rationalization process occurs tacitly, and moral judgments are only apparent as decisions that apply a moral disposition to events (Thoma & Dong, 2014). Thus, moral decision-making is observed through the endorsement of specific behaviors (Uhlmann, Pizarro, Tannenbaum, & Ditto, 2009; Paxton & Greene, 2010). These endorsements reflect judgments about the extent to which individuals consider actions to be justifiable in a given context (Cushman et al., 2006; Greene & Haidt, 2002). Therefore, “rationalizing” fraud represents an explicit assessment about the application of personal ethics within a context. We begin to develop a model of online consumer fraud by examining how computer-mediated contexts affect how people rationalize fraud behaviors.

2.2 Characteristics of Online Consumer Fraud

The scope of fraud behaviors is vast, including financial statement fraud, auction fraud, consumer fraud, investment fraud, and managerial fraud. This research focuses on a pervasive subset of fraud referred to as online consumer fraud. Consumer fraud is defined as “any fraud that targets individuals as victims” (Albrecht et al., 2012, p. 530). Online consumer fraud includes the same behaviors as traditional consumer fraud, but occurs in the context of online transactions (Grazioli & Jarvenpaa, 2000). Online fraud typically involves manipulating content, presenting or generating information to conceal, ambiguous descriptions, or falsification of relevant details of the transaction (Xiao & Benbasat, 2011). Common online consumer frauds include taking payments without

providing services or goods and misrepresenting assets during a sale (IC3, 2015; KPMG, 2013).

We look to extant research to provide the appropriate theoretical foundations for analyzing the unique features of online consumer fraud. Online maladaptive behaviors involve different psychological processes than those that have been typically described in technology adoption research (Davis, 2001). Fraud involves knowingly and intentionally foisting deceit on another individual with the goal of accruing financial or other utilitarian gains (Albrecht et al., 1982). In these scenarios, where deceptive actions carry serious consequences, personal motivations influence decision-making (Carlson et al., 2004; Albrecht et al., 2012). Accordingly, fraud contains elements of deception, motivation, and expectations of consequences (Cressey, 1953; Murphy & Dacin, 2011). These psychological elements are necessary for understanding dishonest decisions (Trevino, 1986; Rest, 1994; Rest et al., 1999), but are not included in media theories that typically assume cooperation between communicants (Daft & Lengel, 1986; Dennis et al., 2008). Media theories assuming cooperative interactions are not intended to predict dishonest behaviors, and ethics-based decision theories do not explicitly address any information technology artifacts. Therefore, we integrate complementary theoretical perspectives from ethical decision-making research, interpersonal deception theory, social presence theory, and media synchronicity theory to develop a holistic framework for studying how individuals rationalize online consumer fraud.

2.3 Influence of Media Capabilities

2.3.1 Media Capabilities and Cues of Deceit

Individuals deceive their victims during fraud (Cressey, 1953). Therefore, we use interpersonal deception theory (IDT) as a theoretical foundation to understand how the use of digital media affects deceptive communication. In IDT, people pursue advantageous asymmetries of knowledge by manipulating conversations (Buller & Burgoon, 1996). During communication, messages are littered with visual, paralinguistic, verbal, and logical cues of deceit (Ekman, 1997; Ekman & Friesen, 1969; DePaulo, Lindsay, Malone, Muhlenbruck, Charlton, & Cooper, 2003; George et al., 2013). For example, when lying via text communication, a communiqué may contain more expressive phrases, typographical errors, and modifiers and may exhibit less diverse content and linguistic complexity (Zhou, Burgoon, Twitchell, Qin, & Nunamaker, 2004). During speech, someone who is lying tends to take longer to respond and typically provides fewer details and sounds more evasive, unclear, negative, or impersonal than someone who is telling the truth (DePaulo, 2003). Similarly, video

provides nonverbal cues of deception that include posture, head angle, and hand placement (Meservy, Jensen, Kruse, Burgoon, Nunamaker, Twitchell, Tsechpenakis, & Metaxas, 2005). The most consistent predictors of deception are generally uncontrollable biometric responses, including heart rate, pupil dilation, or sweating (DePaulo et al., 2003). Individuals with greater proficiency at detecting these cues are less likely to be victims of fraud (Xiao & Benbasat, 2011).

However, dependable signals of deceit are often unobservable during computer-mediated communication, so people are obligated to use less-reliable indicators (Grazioli & Jarvenpaa, 2000). Because of the lack of observable cues in computer-mediated contexts, potential victims may assign greater importance to irregularities in the cues of deception that are available to them (Burgoon, Blair, Qin, & Nunamaker, 2003). Thus, perceptions held about each medium's capabilities for cue transmission represent important contextual factors. Savvy communicators exploit features of communication systems to succeed in their deceptions (George, Marett, & Giordano, 2008; Marett & George, 2013). Individuals who are intent on committing fraud actively mask cues of deceptive behavior (Carlson et al., 2004; George & Robb, 2008) and prefer media they perceive as being less likely to reveal their deception (George & Carlson, 1999).

Our research model posits that fraudulent actions are the result of motivated individuals rationalizing their dishonest behaviors in a context, and that these individuals prefer media that mask cues of deception (Trevino, 1986; Rest et al., 1999; Albrecht et al., 2012). To make these arguments, we assume that people engaging in fraud want to avoid detection (Wells, 2002). Individuals are generally deterred from activities with higher risks of detection and severe consequences (Gurley, Wood, & Nijhawan, 2005), and are more willing to rationalize behaviors when there are reduced consequences (Murphy & Dacin, 2011). The core of this argument rests on the idea that media capabilities will either increase or decrease the visibility of cues of deceit during interaction (Rockman & Northcraft, 2008). Research indicates that the perceived risk of detection inversely relates to the inclination to commit fraud (Wells, 2002). Accordingly, we posit that when media capabilities mask cues of deceit, a potential fraudster will anticipate better outcomes (Trevino, 1986; Rest et al., 1999) and have a greater willingness to act. In contrast, an individual's inclination for rationalizing an act of fraud will be reduced when media capabilities reveal cues of deceit (Carlson et al., 2004).

2.3.2 Media Capabilities and Social Presence

Our model also considers how a medium may affect one's willingness to hurt other people. Rationalization

involves the neutralization of the guilt and shame that accompany unethical actions (Strutton, Vitell, & Pelton, 1994; Siponen, Vance, & Willison, 2012). By definition, fraud causes harm to a victim, and accordingly, perpetrators must reconcile their intentions to do harm to another through rationalization (Murphy & Dacin, 2011). We use the concept of social presence to help explain how media capabilities can influence the rationalization of unethical behaviors. Social presence is an awareness of the presence of others that reflects the immediacy and intimacy offered by a communication medium (Short, Williams, & Christie, 1976). Social presence is developed through interaction and exposure to communication cues (Riegelsberger, Sasse, & McCarthy, 2003; Bente et al., 2008). It is associated with media richness and synchronicity, where "richer" media generally offer greater ability to foster perceptions of social presence (Burke & Chidambaram, 1999; Carlson et al., 2004). Social presence incorporates feelings of copresence, psychological involvement, and behavioral engagement during communication (Biocca, Kim, & Choi, 2001; Kim & Park, 2013). Social presence has been closely associated with the development of intimacy, affect, and empathizing among members of a group (Argyle & Cook, 1976; Tu, 2000; Yoo & Alavi, 2001; Lowenthal, 2009; Hess, Fuller, & Campbell, 2009; Sarker & Valacich, 2010). Alternately, a reduced sense of social presence can contribute to antisocial behaviors (Gunawardena, 1995; Bente et al. 2008).

Social presence is developed through the observation of cues during communication, and media provide differing levels of social presence (Carlson et al., 2004). During communication, individuals relate to each other and naturally develop an awareness of and empathy for those with whom they communicate (Argyle & Cook, 1976; Kim & Park, 2013). Individuals using media that facilitate the development of social presence perceive others with more warmth and affect (Hassanein & Head, 2007). Social presence is derived from media capabilities and increases trust in e-commerce contexts (Hess et al., 2009). In contrast, lower social presence is associated with unethical online behaviors (Gefen & Straub, 2003; Bente et al. 2008). Individuals are less willing to rationalize harmful actions because the consequences seem more palpable and immediate when communicating using media with greater social presence, (Siponen & Vance, 2010; Murphy & Dacin, 2011). Consequently, social presence deters fraud in web-based commerce (Gefen & Straub, 2003). As shown in Figure 1, we expect that individuals will be less willing to rationalize unethical behaviors when using media that foster social presence (Sarker & Valacich, 2010; Chatterjee et al., 2015) and reveal cues of deceit (Carlson et al., 2004).

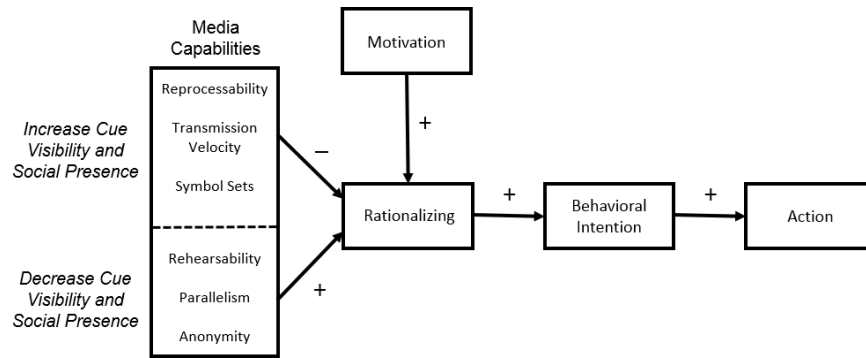


Figure 1. Model of Media Effects and Fraud Rationalization

Now that we have identified the visibility of cues of deceit and social presence as two important factors that affect online consumer fraud, we look to media synchronicity theory (MST) to provide guidance about which media capabilities are most relevant in that context. MST is intended to describe how media capabilities influence cooperative communication performance (Dennis et al., 2008), but has been extended to explain communication strategies during noncooperative acts of communication (George et al., 2013). MST proposes that media forms (e.g., e-mail, video conferencing, telephone, etc.) possess various objective capabilities that influence communication performance. However, MST is not completely deterministic; individuals influence to what extent media capabilities are used. For example, an e-mail might be “rehearsed” as it is revised several times before being sent or, alternatively, it might be sent without any effort to edit it. Similarly, a reader may “reprocess” a message by reading it repeatedly or may briefly scan the message. MST proposes that five capabilities have the greatest influence on communication performance. MST identifies transmission velocity, parallelism, symbol sets, rehearsability, and reprocessability as media capabilities that commonly affect communication outcomes (Dennis et al., 2008; George et al., 2013). We also consider anonymity to be an important media capability in the context of online consumer fraud because it has been shown to reduce normative social pressures and perceptions of social presence (Nunamaker et al., 1991; Froomkin, 1996; Davenport, 2002; Sarker, Sarker, Chatterjee, & Valacich, 2010).

2.3.3 Media Capabilities that Increase Cue Visibility and Social Presence

Reprocessability is the extent to which a message may be reexamined by the receiver. Individuals may hear, read, or see the message again when a message offers high capabilities for reprocessability (Dennis et al., 2008). Information that was not initially detected may

be uncovered by observing a message more than once. Repeated observation of a message may improve an individual’s understanding of the intended message and their ability to notice contextual and nonverbal cues (Furner & George, 2012). Potential victims of fraud have more opportunities to uncover cues of deceit when using media with high capabilities for reprocessability (Carlson et al., 2004). People sending fraudulent messages would expect recipients to be more capable of uncovering deceit when given repeated chances to analyze messages for inconsistencies. Lowered expectations of success would reduce the inclination to rationalize fraudulent behaviors.

Furthermore, we expect that higher reprocessability will be associated with a greater sense of social presence for individuals considering engaging in fraud. Although social presence is generally associated with higher levels of media richness and synchronicity (Carlson et al., 2004), we expect that reprocessability will increase the perception that the other party is another person and will evoke more sympathy. Feelings of social presence are developed during communication as social cues and content are shared (Argyle & Cook, 1976; Riegelsberger et al., 2003) and intimacy accrues (Bente et al., 2008). Social impressions are developed through exposure, and the more exposure one has with other communicants, the more social bonds form (Walther, 1994; Burke & Chidambaram, 1999). Consequently, we expect repeated exposure to people and their messages will humanize potential victims (Diener, Lusk, DeFour, & Flax, 1980) and will decrease one’s willingness to harm them by engaging in online fraud (Harrington, 1996; Gefen & Straub, 2003).

H1A: Reprocessability will be negatively related to rationalizing an act of fraud.

Transmission velocity refers to the rate at which a message can be sent and processed and has been closely associated with feedback immediacy (Dennis & Valacich, 1999; Dennis et al., 2008). While closely

associated, transmission velocity differs from feedback immediacy, which is characteristic of an interaction and not an objective trait of the medium (Dennis et al., 2008). Media with greater transmission velocity are more useful for clarifying uncertainty. Interactive technologies are useful for monitoring messages and allow adjustments to improve communication effectiveness (Te'eni, 2001). For example, if a buyer asks a question of a seller, an e-mail may result in delayed communication while a telephone call would likely garner immediate response. The ability to ask for and receive feedback reassures individuals about the authenticity of previous messages (Carlson et al., 2004). The ability to respond quickly is important in e-commerce exchanges where messages are scrutinized for cues of deceit (Buller & Burgoon, 1996). Assessments about the veracity of messages affect subsequent levels of trust and skepticism and influence communication outcomes (Carlson et al., 2004). In interactive conversations, new lies are built on previous statements, and it becomes more likely that cues of deceit will be revealed (Ekman, 1997). Similarly, cues of deceit are more likely to be revealed when using media with greater interactivity (George et al., 2013). Consequently, an individual will perceive a higher likelihood of being detected and will be less willing to rationalize an act of fraud when using a medium with greater transmission velocity.

In addition to a perception of increased risk of detection, we expect transmission velocity to increase social presence. The ability to respond in a timely fashion contributes to a sense of intimacy and trust (Gunawardena, 1995; Miranda & Saunders, 2003). Immediate communication reduces the time needed for social impressions to form (Burke & Chidambaram, 1999). These social impressions are the basis of social presence (Walther, 1994), and as a consequence immediate communication builds social presence more quickly than delayed communication (Bente et al., 2008). Transmission velocity creates more interactivity (Nunamaker et al., 1991) and humanizes potential victims (Chatterjee et al., 2015). Thus, social presence is developed through interactivity and intimacy (Short et al., 1976; Bente et al., 2008). Generally, people avoid behaviors that will hurt other people (Strutton et al., 1994), and greater social presence makes people less willing to rationalize actions that would harm others (Diener et al., 1980; Harrington, 1996). Therefore, people will be less willing to engage in a harmful action, like fraud, when using a medium with greater transmission velocity.

H1B: Transmission velocity will be negatively related to rationalizing an act of fraud.

Symbol sets represent the variety of ways that information can be encoded in a message (Daft & Lengel, 1986). For example, in e-commerce, websites

may display written descriptions, audio, photos, video, keywords, seals or certificates, and vital characteristics of the item. Messages using less encoded symbolism (e.g., physical gestures) are interpreted more quickly by receivers than messages using highly encoded symbolism (e.g., written communication). People evaluate written descriptions, along with photos or videos, to develop their understanding of the condition of the product. Individuals perceive consistency as a sign of honesty, because lying is a cognitively difficult task and uncontrolled cues of deceit will manifest as inconsistencies (Ekman & Friesen, 1969; Buller & Burgoon, 1996). Media offering more symbol sets will impose more production costs associated with creating a convincing deceptive message (Dennis et al., 2008). Media that offer a variety of symbol sets will therefore be more difficult to control for consistency and may leak cues of deceit (Eckman, 1997). Communication with a reduced number of symbols impedes the development of social perceptions and contextual cues (Daft & Lengel, 1986; Dennis et al., 2008) and encourages self-serving behaviors (Griffith & Northcraft, 1994). For example, previous research indicates that deceivers are more successful in avoiding suspicion when using only text-based communication than when using text with video components (Burgoon, Stoner, Bonito, & Dunbar, 2003). We posit that the more symbol sets provided by a medium, the more likely it will be that cues of deception will leak into deceptive conversations and increase the probability of detection.

An increased range of social cues, provided through a greater variety of symbol sets, also increases the awareness of others and makes people hesitant to act dishonestly (Diener, 1980). Symbol variety increases social presence (Burke & Chidambaram 1999; Aldiri, Hobbs, & Qahwaji, 2008; Bente et al., 2008). In turn, social presence fosters trust between communication participants (Hess et al., 2009) and acts a deterrence to fraud (Gefen & Straub, 2003). Consequently, a variety of symbols promotes a greater sense that behaviors could harm others (Chatterjee et al., 2015) and inhibits harmful actions (Sarker & Valacich, 2010). The opposite is also true; a lesser variety of symbol sets reduces social presence in computer-mediated communication (Miranda & Saunders, 2003). A lack of social cues discourages trust in online settings and increases the potential for deceptive behaviors (Carlson et al., 2004). We expect that greater symbol set variety will increase social presence and will reduce the willingness to harm others (Harrington, 1996).

H1C: Symbol set variety will be negatively related to rationalizing an act of fraud.

2.3.4 Media Capabilities that Decrease Cue Visibility and Social Presence

Rehearsability provides senders with opportunities to fine-tune their messages. Messages that have been

rehearsed are often less confusing and more detailed (Mennecke, Valacich, & Wheeler, 2000). Rehearsability can be used to encode a message in a manner that is best suited to aid in interpretation (Dennis et al., 2008). However, rehearsed messages are also more likely to mask cues of deception (Carlson et al., 2004). Liars actively hide their cues of deception from others (George et al., 2013). Media with greater capabilities for rehearsability provide potentially fraudulent actors multiple opportunities to review and revise their messages, with the goal of hiding as many of the cues of misrepresentation as possible. It can be challenging to juggle cues of deceit (Buller & Burgoon, 1996) and the more time an individual has to refine their message, the more likely it will be that the fraudulent communicator can mask obvious cues of misrepresentation. Thus, individuals will be more confident about their deception remaining undetected when communicating using a medium that is perceived to transmit fewer deceptive cues. Potential perpetrators are more likely to engage in fraud when the risk of detection is low (Wells, 2002). Thus, we conclude that individuals will be more willing to rationalize fraudulent actions when using media with greater rehearsability.

We also expect that rehearsability will reduce feelings of social presence. A highly practiced message will discourage the development of intimacy and immediacy, the basis of social presence (Burke & Chidambaram, 1999; Bente et al., 2008). Intimacy develops through interaction (Yoo & Alavi, 2001; Walther, 1994), and a practiced dialogue reduces interactivity (Tu, 2000). Consequently, without interaction it becomes more difficult to recognize others, understand their intentions, and respond accordingly (Biocca et al., 2001). Consequently, we expect that rehearsability reduces fraudsters' perceptions that they are harming other people and makes them more willing to rationalize unethical behaviors (Strutton et al., 1994; Harrington, 1996; Siponen et al., 2012).

H2A: Rehearsability will be positively related to rationalizing an act of fraud.

Parallelism refers to the number of communications in which participants are simultaneously engaged. Some media require a high degree of attention from participants, allowing only a single conversation at one time while other media allow multiple conversations. Media that facilitate simultaneous engagement increase the amount of information that can be transmitted and received, but at the cost of lowering the shared focus of participants (Dennis et al., 2008). When individuals manage fewer communication channels, they are better at detecting cues of deception, and are better at hiding their own cues of deception (Carlson et al., 2004). The effort required to juggle multiple conversations causes distractions and masks cues of deceit (Burgoon et al., 2006). Conversations with multiple threads reduce the attention that can be

devoted to any single conversation (Herring, 1999). Thus, media with greater capabilities for parallelism obscure cues of deceit by overloading recipients with more information than they are capable of effectively assessing in a timely manner. With more cues of deception being masked, a potential perpetrator of fraud would perceive a greater likelihood of success. Therefore, we expect individuals using media with greater capabilities for parallelism will infer that they have a greater chance of success and will be more willing to rationalize fraud.

We also expect parallelism to reduce social presence and reduce concerns about harming others. Parallelism provides the capacity to send messages to larger groups of individuals (Dennis et al., 2008). The attribution of personal identities to members of a group decrease with group size (Postmes, Spears, & Lea, 2000). Perceptions of group membership deindividualize people and obscure differences between the members of a group (Di Blasio et al., 2008). Consequently, we expect messages sent to larger groups to be less personal and intimate (Diener et al., 1980). This lack of intimacy and personalization reduces social presence (Bente et al., 2008). Thus, we expect that parallelism trivializes and depersonalizes victims (Harrington, 1996). This reduced social presence makes people less concerned about others' welfare (Biocca et al., 2001) and increases the willingness to commit online fraud (Gefen & Straub, 2003; Carlson et al., 2004).

H2B: Perceptions about parallelism will be positively related to rationalizing an act of fraud.

We identify anonymity as another important media capability in the context of online consumer fraud. Although not included in MST, extant research (Nunamaker et al., 1991; Carte & Chidambaram, 2004; Sarker et al., 2010) identifies anonymity as a media capability that affects ethical decision-making and collaboration. Anonymity is defined as the extent to which the capabilities of a communication medium enable individuals to confirm the identity of another social actor (Griffith & Northcraft, 1994). As with other media capabilities, people influence the degree to which the capability is applied (Dennis et al., 2008) and may choose to divulge their identity, or not. Anonymity influences various types of nonnormative behaviors including arguing (Lee, 2007), lying (Rockman & Northcraft, 2008), risky decision-making (Kiesler & Sproull, 1992; Pissarra & Jesuino, 2005), and lowered inhibition in computer-mediated communication (Sosik, Kahai, & Avolio, 1999). Anonymity makes individuals feel less compelled to conform to social norms (Kraemer & King, 1988; Jarvernpaa et al., 1988; Nunamaker, Applegate, & Konsynski, 1988; Connolly, Jessup, & Valacich, 1990; Carte & Chidambaram, 2004).

Gavish and Gerdes (1998) described three facets of anonymity that in combination form general anonymity: environmental anonymity, content-based anonymity, and procedural anonymity. Environmental anonymity is the extent to which environmental factors (e.g., familiarity of communicants, number of participants, proximity, etc.) affect the anonymity of the communication system, content anonymity is the extent to which the source of a contribution can be identified through message content, and procedural anonymity refers to how well a communication protocol hides the source of a message. Procedural anonymity is provided by the communication medium and is the aspect of anonymity most commonly used as an antecedent to communication outcomes (Gavish & Gerdes, 1998). The conceptualization of anonymity in the context of media effects research closely resembles process anonymity and refers to the ability of a communication medium to hide the source of a message (Chatterjee et al., 2015). In this conceptualization, anonymity is generally grouped alongside media capabilities including parallelism, transmission velocity, or feedback immediacy (Nunamaker et al., 1991; Harrington, 1996; Carte & Chidambaram, 2004; Sarker et al., 2010).

Extant research provides mixed support for the influence of anonymity on cooperative communication performance (Dennis, Wixom, & Vandenberg, 2001; Nunamaker et al., 1991; Sosik et al., 1999; Valacich, Dennis, & Nunamaker, 1992); however, anonymity is relevant in the context of e-commerce transactions (Gopal, Tripathi, & Walter, 2004; Burk & Pfitzmann, 1990). Verifying the identities of others is a principal concern of e-commerce transactions (Froomkin, 1996). Online environments facilitate the misrepresentation of identity and offer greater anonymity than face-to-face communications (Davenport, 2002; Woo, 2006). While individuals are usually deterred from engaging in criminal or antisocial activities with high risks of detection or severe consequences (Cushman et al., 2006), they believe that they are more likely to get away with criminal acts when those actions are performed anonymously (Connolly et al., 1990; Gurley et al., 2005). When it is difficult to trace actions to individuals, there are lower expectations of punishment and retribution (Griffith & Northcraft, 2004). Anonymity promotes selfish behaviors and inhibits the use of contextual cues in conversation (Sarker & Valachich, 2010). Nontraceable (i.e., anonymous) communication has been shown to increase unethical decision-making (Chatterjee et al., 2015). We posit that when people use media with greater capabilities for anonymity, they perceive a lesser likelihood of punishment and will be more willing to rationalize fraudulent behaviors.

Beyond perceiving an improved possibility of successfully defrauding others, we also expect anonymity to dehumanize potential victims (Di Blasio et al., 2008; Chatterjee et al., 2015). Anonymity decreases social presence (Bente et al., 2008; Sarker & Valacich, 2010) and dehumanizes others during communication (Gavish & Gerdes, 1998; Postmes et al., 2000). The dehumanization of potential victims lessens the psychological conflict caused by engaging in harmful behaviors (Strutton et al., 1994; Harrington, 1996) and increases the willingness to rationalize fraudulent behaviors (Burke & Chidambaram 1999; Murphy & Dacin, 2011; Albrecht et al., 2012). Thus, we expect anonymity to weaken social presence and increase people's inclination to rationalize fraudulent behaviors.

H2C: Anonymity will be positively related to rationalizing an act of fraud.

2.4 Motivation

Based on extant research about ethical decision-making (Rest et al., 1999; Jones, 1990; Trevino, 1986), the model combines psychological drivers of behaviors (e.g., motivation) and opportunistic contextual elements (e.g., media capabilities). Motivation is a critical psychological driver of unethical behaviors (Carlson et al., 2004; George et al., 2008), because sufficiently motivated individuals may attempt to gain benefits through dishonest means (Cressey, 1953; Murphy & Dacin, 2011). Although motivations may be driven by intrinsic themes like pleasure and satisfaction, or extrinsic rewards like money (Venkatesh, 2000), motivations to commit fraud typically stem from perceived financial insecurities, social pressures to accumulate wealth, or the desire for achievement (Albrecht et al., 2012; Choo & Tan, 2007). People are more willing to violate their moral principles when strongly motivated (Tsang, 2002; Uhlmann et al., 2009). When people perceive greater rewards they are more motivated to commit, and more willing to rationalize, fraudulent actions (Murphy & Dacin, 2011; Rodgers et al., 2014). Extant research has strongly supported a positive relationship between financial motivations and fraud (Cressey, 1953; Albrecht et al., 2012; Dellaportas, Choo, & Tan, 2007; Dorminey, Fleming, Kranacher, & Riley, 2012; Ramamoorti, 2008; Ramos, 2003; Rodgers et al., 2014; Rossouw et al., 2000; Wells, 1997; Zahra et al., 2005). Accordingly, motivation is an important antecedent to the rationalization of unethical decisions (Rest et al., 1999; Muphy & Dacin, 2011; Ramamoorti, 2008). In general, people that are more motivated to commit fraud are more likely to rationalize their behaviors (Dorminey et al., 2012).

H3: Motivation to commit fraud will be positively related to rationalizing an act of fraud.

2.5 Behavioral Intention

Individuals reconcile their personal ethics with any unethical intentions before enactment (Ramamoorti, 2008; Rittenberg et al., 2011; Murphy & Dacin, 2011). Ethical reasoning occurs before an individual develops intentions to act (Rest, 1999; Banerjee, Cronan, & Jones, 1998). The ability to rationalize an unethical action is a necessary antecedent to the development of intention (Rest et al., 1999; Jones, 1990; Trevino, 1986; Uhlmann et al., 2009). Similarly, rationalizing unethical actions using information systems has been associated with the development of intentions to commit computer abuse (Harrington, 1996; Siponen & Vance, 2010). We expect that an individual must be willing to rationalize their actions before developing an intention to act (Haidt, 2001; Anand et al., 2004; Jarcho et al., 2011).

H4: Rationalizing an act of fraud will be positively related to the individual's intention to commit that act.

2.6 Enactment

Behavioral intentions closely predict actual behaviors in a variety of contexts (Venkatesh, 2000). More specifically, intention has been identified as an antecedent of action during ethical decision-making (Rest, 1994; Rest et al., 1999). An individual contemplating a dishonest action develops an intention to act before engaging in actual behaviors (Trevino, 1986; Jones, 1990; Banerjee et al., 1998). We expect that individuals with greater intentions will be more likely to engage in certain behaviors. Specifically, we expect online consumer fraud decisions to manifest in two critical behaviors (Albrecht et al., 2012): (1) the intentional overpricing of goods, and (2) the intentional misrepresentation of the condition of

goods. Together, these two actions constitute fraud; the intentional misrepresentation of the condition of goods shows a willingness to deceive others, and intentional overpricing displays a willingness to profit from that duplicity (Wells, 1997; Marett & George, 2013). Individuals who commit fraud distort the details of the transaction to manipulate the perceived value of the items they are selling (Xiao & Benbasat, 2011). Consequently, we expect that people who intend to commit fraud will be more willing to overprice and misrepresent the quality of items they sell.

H5A: An individual's intention to commit an act of fraud will be positively related to the amount that the product they are selling is overpriced.

H5B: An individual's intention to commit an act of fraud will be positively related to the extent that the condition of the product they are selling is overstated.

3 Research Method and Data Analysis

As shown in Figure 2, we used a two-study approach, with six distinct data sets, to test the proposed model. One set of data validated the adapted measures of perceived media capabilities, four data sets were used to test hypotheses with various media, and a final data set was used to test the model in a different setting. This multistudy design improves the validity of context-based studies (Whetten, 2009; Hong, Chan, Thong, Chasalow, & Dhillon, 2013). Study 1 used a scenario-based survey approach that focused on measuring the impact of media capabilities on rationalizing fraud. Study 2 validated the model and tested if the model could predict intentional misrepresentation and overpricing.

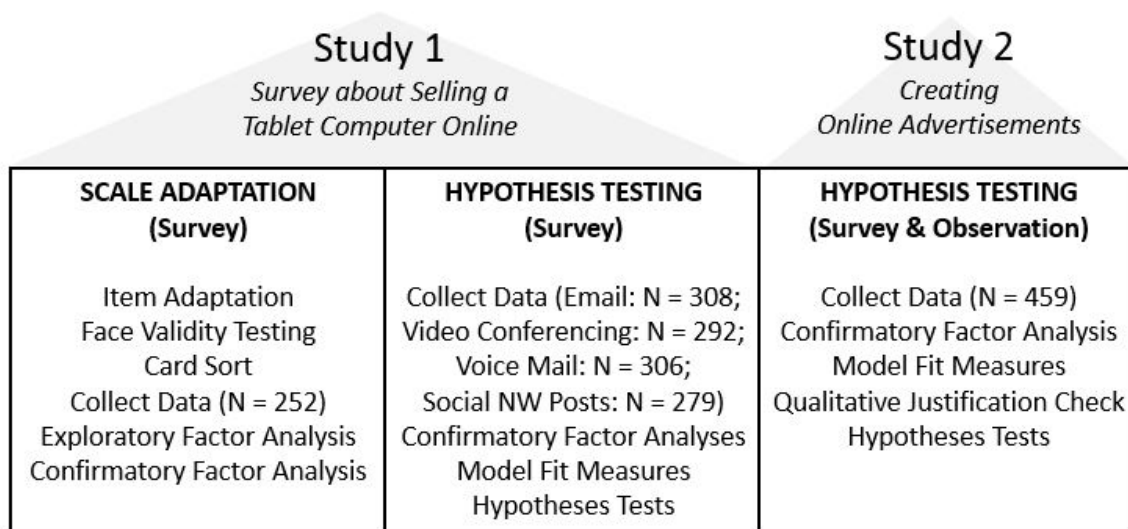


Figure 2. Multistudy Research Approach

3.1 Study 1—Survey Data

3.1.1 Design

First, we developed a scenario involving online consumer fraud to gather data and test the model. Scenario-based approaches have already demonstrated effectiveness for studying media capabilities (Sarker et al., 2010) and ethical decision-making (Paxton & Greene, 2010; Cushman et al., 2006). The scenarios were hypothetical and were used as a means to elicit responses that realistically capture attitudes and perspectives about behaviors that would otherwise be prone to response biases (Banerjee et al., 1998; Furner & George, 2012; Sarker et al., 2010; Street & Street, 2006). Each scenario was designed to contain a sufficient moral intensity to signify a recognizable ethical consideration (Jones, 1990); yet, because it involved misrepresentation of the condition of an asset as being in slightly better condition than it actually was, it lies within a realm of behaviors that many people can rationalize (Singhapakdi, Vitell, & Kraft, 1996).

First, each participant was randomly assigned to answer questions about a specific medium's capabilities (i.e., e-mail, video conferencing, voicemail, or social network posts). Specific examples of communication tools were presented to ensure respondents understood which media were being described. Scenarios involving social networks provided examples using Facebook, Twitter, Foursquare, MySpace, Pinterest, and Weibo; video conferencing examples included Skype, AIM, GoogleTalk, WebEx, Facetime, and gotomeeting. Then, imitating extant research using a similar

methodology (Sarker et al., 2010), each subject was presented with a scenario that described using that medium to sell a laptop computer. The scenario was identical for each person except for the medium being used to facilitate the sale. The scenario presented a realistic situation where an individual could gain \$100 by intentionally overstating the condition of the tablet computer. The scenario explicitly described the misrepresentation of an asset, one of the most common forms of online consumer fraud (IC3, 2015; FTC, 2013; Albrecht et al., 2012) with a reward of sufficient moral intensity to warrant ethical considerations (Jones, 1990). After reading the scenario, respondents were asked about their attitudes and intentions.

As shown in Table 1, the four different media used in the scenarios were selected to ensure that the study encapsulated a wide range of media capabilities. For example, Dennis and colleagues (2008) predicted that voicemail and video conferencing vary in capabilities for transmission velocity, with voicemail having low to medium capabilities and video conferencing having high capabilities. Thus, we selected e-mail and video conferencing because they offer contrasting media capabilities, but are equally desirable for communicating misrepresentation. Extant research indicates that individuals display a roughly equal preference between these two media for engaging in deceptive communication (George et al., 2013). Therefore, voicemail was selected as a third medium, because it has distinctive inverse relationships between media capabilities that frequently correlate (e.g., rehearsability and reprocessability). Finally, the fourth medium, social network posts, was selected as an innovative new medium that has not been rated in extant MST research (Dennis & Valacich, 1999; Dennis et al., 2008).

Table 1. Comparison of Media Capabilities in Dennis et al., 2008

	Transmission velocity	Parallelism	Symbol sets	Rehearsability	Reprocessability	Anonymity
E-mail	low-medium	high	low-medium	high	high	high*
Video conferencing	high	low	medium-high	low	low	low-medium*
Voicemail	low-medium	low	low	low-medium	high	low-medium*
Social network posts	medium-high*	medium-high*	low-medium*	medium-high*	high*	low-medium*
<i>Note:</i> *Predictions indicate authors' expectations; capabilities not predicted in previous research						

3.1.2 Scale Adaptation

MST suggests that transmission velocity, parallelism, symbol set variety, rehearsability, and reprocessability are germane to communication. Whereas MST was originally postulated using researchers' ratings, we used a secondary data strategy to collect data and

validate survey measures for media capabilities, including anonymity. Specifically, we adapted previously validated self-reported measures of media capabilities for this study (Scott, 2008; Sarker et al., 2010). We chose to use self-reported scales for three primary reasons: (1) we were interested in the respondents' personal assessments of the potential

capabilities of the media, (2) some of the researcher-based ratings of media capabilities have changed over time (Dennis & Valacich, 1999; Dennis et al., 2008), and (3) no researcher-based ratings exist for any emergent technologies that were not included when the ratings were established (e.g., social network posts). We presented the scales to five experts on fraud and a pilot group of 25 nonexperts who examined the items for face validity, and then performed a card sort to conceptually validate the measurement items.

The scenario and adapted measurement items are listed in Appendix A. The items use 7-point Likert scales ranging from “strongly disagree” to “strongly agree.” We followed a multistage validation process and performed exploratory and confirmatory factor analyses using SPSS (MacKenzie, Podsakoff, & Podsakoff, 2011). The scales were validated using 252 completed surveys collected from students at a large midwestern university. The pattern matrix provided in Appendix B was extracted using principal components analysis and oblimin rotation. The results provide

evidence of convergent and discriminant validity; each measurement item groups strongly with other measures of the same latent factor (Hair et al., 2010). The factors exhibited similar evidence of reliability and validity as extant scales for the same constructs (Scott, 2008; Sarker et al., 2010).

We performed a preliminary analysis to evaluate the data’s consistency with prior theorizing and ensure the data was a valid representation of media capabilities. As shown in Table 2, we interpreted differences in the mean factor scores between media as evidence that the data covered a broad range of media capabilities and reflected the distribution of media capabilities posited by Dennis et al., (2008). The results of an ANOVA to evaluate these differences indicated that reprocessability ($p < 0.001$), transmission velocity ($p < 0.001$), symbol sets ($p < 0.001$), anonymity ($p < 0.001$), rehearsability ($p < 0.001$), and parallelism ($p < 0.001$) differed by medium. These findings indicated the perceptions held by subjects about media capabilities varied in a manner consistent with prior theorizing (Dennis et al., 2008).

Table 2. Group Means

	E-mail	Video conferencing	Voicemail	Social network posts
Reprocessability	5.910	4.158	5.121	5.628
Transmission velocity	5.091	5.728	3.891	5.630
Rehearsability	5.695	4.059	3.902	5.481
Parallelism	5.319	4.856	3.016	5.651
Symbol sets	5.205	5.037	2.546	5.523
Anonymity	3.381	1.717	3.004	2.859
<i>Note:</i> The rows are ordered by mean values (highest to lowest)				

3.1.3 Data Collection for Hypothesis Testing

After the measurement items were validated, we collected a second independent set of data for testing hypotheses. A second round of data collection is necessary to provide a unique set of responses for testing the structural model and is recommended when scales include any new or adapted measurement items (MacKenzie et al., 2011). The second data set was gathered using the validated survey and was collected from undergraduate students in a junior-level business course at a large midwestern university. This sample population was appropriate since, as described in a KPMG (2013) forensic investigation report: “Cybercrime brings with it a different type of fraudster: a younger, educated person without corporate experience but having learned the business playing with technology early on (p. 118).” Even ostensibly honest individuals from a variety of backgrounds have been shown to willingly engage in fraud when presented with certain conditions (Albrecht

et al., 2012; Cressey, 1953; Stone, 2015). Accordingly, a general population of people who regularly engage in e-commerce would include people that would consider themselves to be “honest” but may nevertheless engage in unethical behaviors. Furthermore, college students frequently engage in online commerce and, while not all college students engage in criminal acts, many engage in exchanges that include deception and misrepresentation (Skinner & Fream, 1997; Tade & Aliyu, 2011). All respondents in Study 1 indicated that they had experience buying or selling goods online. Thus, the study population had access to and experience with Internet-based commerce (Palfrey & Gasser, 2013; Bennett & Maton, 2010), and represents an appropriate group for studying online consumer fraud.

Of the 1,212 surveys that were started, 1,185 (97.7%) were completed and used in Study 1. Again, respondents were randomly assigned to one of the four media types. Of the respondents, 308 were in the e-mail group (26.0%), 292 were in the video

conferencing group (24.6%), 306 were in the voicemail group (25.8%), and 279 were in the social network posts group (23.5%). While the data was collected concurrently to ensure random assignment, the data for each medium was analyzed separately. We analyzed the data by medium to ensure the analysis focused on the influence of individual media capabilities. Before testing the structural model and hypotheses for each medium, we revalidated the measurement model. As shown in Table 3, we evaluated measures of reliability and compared correlations for each of the variables in the model by medium. All the latent constructs exhibit high Cronbach's alpha values and composite reliability scores demonstrating reliability. The average variance

extracted (AVE) is greater than 0.50 for every latent construct, which provides evidence of convergent validity (Fornell & Larcker, 1981). There are theoretical reasons to expect significant correlations between some media capabilities. Extant theory suggests that reliability and rehearsability are both media processing capabilities, while transmission velocity and parallelism are media transmission capabilities (Dennis et al., 2008). Despite these expectations, for each latent construct, the square root of the AVE is larger than any of the correlations to other constructs—thus providing evidence of discriminant validity (Chin, 1998). Thus, the measures of the latent factors consistently demonstrated reliability and validity, irrespective of medium.

Table 3. Measures of Construct Reliability and Validity

Scale development, n=252				Correlations between constructs							
	Alpha	CR	AVE	RP	TV	SS	RH				
Reprocessability (RP)	0.938	0.942	0.845								
Transmission velocity (TV)	0.873	0.875	0.701	0.020							
Symbol sets (SS)	0.848	0.845	0.645	0.273	0.420						
Rehearsability (RH)	0.876	0.884	0.719	0.832	0.016	0.388					
Parallelism (PL)	0.938	0.915	0.843	0.391	0.362	0.489	0.488				
E-mail hypotheses, n=308				Correlations between constructs							
	Alpha	CR	AVE	RP	TV	SS	RH	PL	AN	MOT	RAT
Reprocessability (RP)	0.875	0.877	0.703								
Transmission velocity (TV)	0.898	0.899	0.748	0.452							
Symbol sets (SS)	0.905	0.906	0.763	0.511	0.442						
Rehearsability (RH)	0.936	0.936	0.830	0.534	0.287	0.414					
Parallelism (PL)	0.930	0.930	0.817	0.537	0.438	0.420	0.554				
Anonymity (AN)	0.915	0.916	0.687	-0.031	0.004	0.130	0.111	0.083			
Motivation (MOT)	0.949	0.949	0.790	0.164	0.111	0.128	0.261	0.173	0.114		
Rationalizing (RAT)	0.937	0.937	0.750	-0.243	-0.318	-0.129	0.062	-0.015	0.423	0.344	
Behavioral intention (INT)	0.949	0.950	0.864	-0.305	-0.244	-0.187	-0.071	-0.098	0.229	0.290	0.655
Voice conferencing hypotheses, n=292				Correlations between constructs							
	Alpha	CR	AVE	RP	TV	SV	RH	PL	AN	MOT	RAT
Reprocessability (RP)	0.903	0.904	0.758								
Transmission velocity (TV)	0.906	0.907	0.764	0.026							
Symbol sets (SS)	0.871	0.874	0.698	0.409	0.272						
Rehearsability (RH)	0.876	0.881	0.714	0.578	-0.034	0.397					
Parallelism (PL)	0.909	0.909	0.769	0.103	0.265	0.309	0.273				
Anonymity (AN)	0.952	0.952	0.800	0.002	0.342	0.227	0.102	0.385			
Motivation (MOT)	0.951	0.952	0.798	0.092	0.148	0.157	0.065	0.196	0.187		
Rationalizing (RAT)	0.941	0.941	0.763	0.043	-0.201	0.047	0.318	0.249	0.159	0.359	
Behavioral intention (INT)	0.957	0.957	0.882	0.047	-0.237	-0.068	0.220	0.211	0.042	0.238	0.671
Voicemail hypotheses, n=306				Correlations between constructs							
Reprocessability (RP)	0.774	0.776	0.537								

Table 3. Measures of Construct Reliability and Validity

Transmission velocity (TV)	0.880	0.881	0.711	0.155							
Symbol sets (SS)	0.929	0.933	0.823	-0.105	0.310						
Rehearsability (RH)	0.793	0.806	0.589	0.218	0.200	0.398					
Parallelism (PL)	0.948	0.948	0.858	0.000	0.380	0.677	0.452				
Anonymity (AN)	0.933	0.933	0.735	0.193	0.170	0.258	0.251	0.306			
Motivation (MOT)	0.960	0.961	0.830	0.180	-0.068	-0.005	0.144	0.066	0.165		
Rationalizing (RAT)	0.930	0.932	0.733	-0.066	-0.012	0.314	0.286	0.324	0.323	0.357	
Behavioral intention (INT)	0.963	0.963	0.896	-0.115	0.129	0.419	0.306	0.463	0.114	0.234	0.656
Social network post hypotheses, n=279				Correlations between constructs							
	Alpha	CR	AVE	RP	TV	SV	RH	PL	AN	MOT	RAT
Reprocessability (RP)	0.822	0.828	0.618								
Transmission velocity (TV)	0.887	0.892	0.733	0.647							
Symbol sets (SS)	0.803	0.805	0.581	0.635	0.613						
Rehearsability (RH)	0.855	0.858	0.668	0.671	0.487	0.428					
Parallelism (PL)	0.922	0.925	0.805	0.526	0.571	0.455	0.658				
Anonymity (AN)	0.911	0.912	0.675	0.128	0.037	0.079	0.166	0.203			
Motivation (MOT)	0.944	0.945	0.775	0.153	0.054	0.039	0.156	0.254	0.192		
Rationalizing (RAT)	0.951	0.953	0.801	-0.234	-0.242	-0.174	0.025	0.121	0.286	0.354	
Behavioral intention (INT)	0.955	0.956	0.879	-0.282	-0.373	-0.296	-0.122	-0.043	0.164	0.354	0.736

3.1.4 Analysis

Before testing the hypotheses, we analyzed the model fit statistics and validated the structure of the model using a covariance-based structural equation model in AMOS. Maximum likelihood estimation was used to

estimate the parameters in the model. The model used the survey items as reflective measures of the latent constructs. As shown in Table 4, goodness-of-fit statistics including the CFI, NFI, TLI, RMSEA, and SRMR all indicate the structural model fits well for each medium.

Table 4. Model Fit

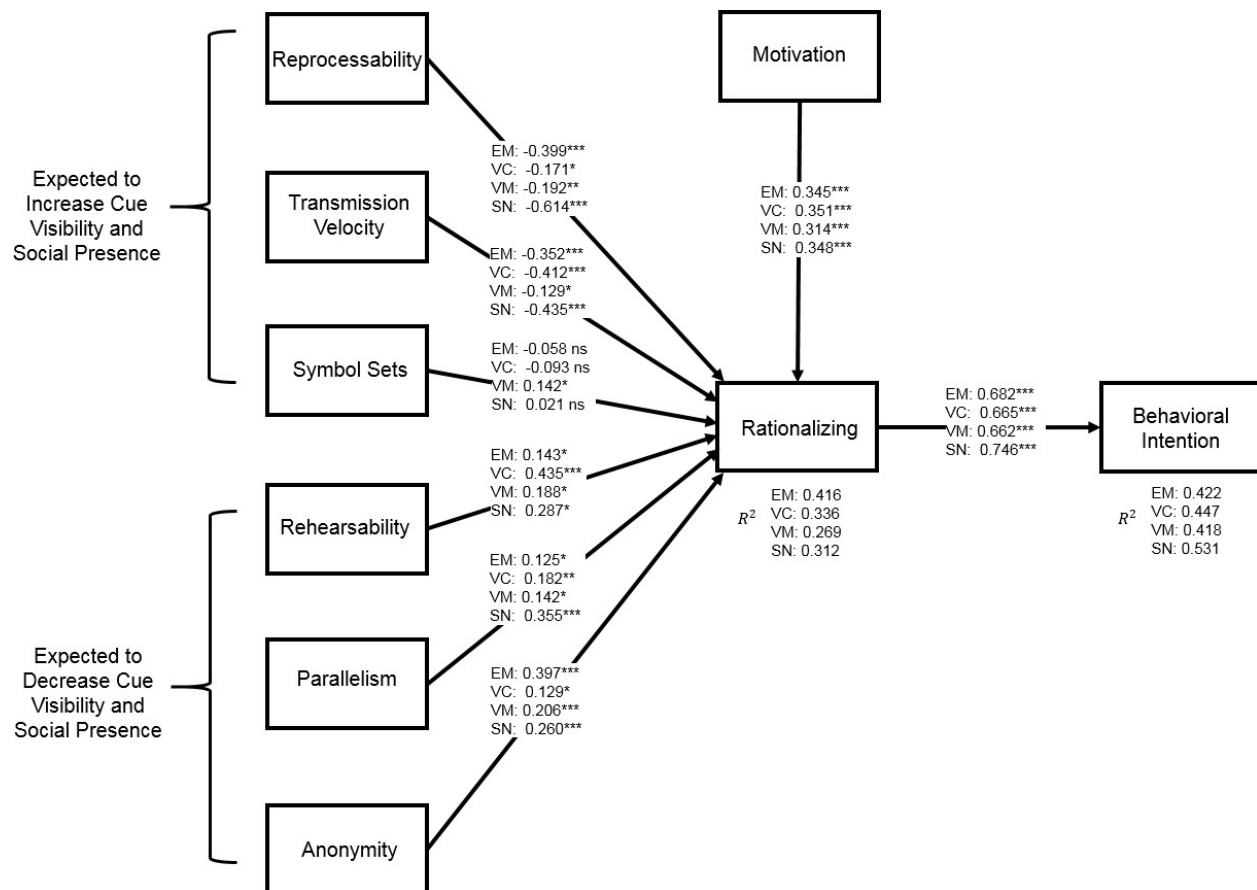
	Study 1				Study 2	Recommendations (Hair et al., 2010; Hu & Bentler, 1999)	
Index	E-mail	Video conferencing	Voicemail	Social network posts	Facebook ad	Benchmark	Fit
Chi-sq	809.920	585.626	642.839	706.043	1,171.041		
DF	459	459	459	459	601		
Normed chi-sq	1.765	1.276	1.401	1.538	1.948	< 3.000	“Good”
CFI	0.961	0.985	0.979	0.968	0.964	> 0.950	“Good”
NFI	0.915	0.936	0.931	0.914	0.929	> 0.950	“Moderate”
NNFI/TLI	0.955	0.983	0.976	0.963	0.960	> 0.950	“Good”
RMSEA	0.050	0.031	0.036	0.044	0.046	< 0.050	“Good”
SRMR	0.036	0.032	0.037	0.038	0.081	< 0.080	“Good”

Study 1 focuses on understanding how media capabilities influence the rationalization of fraud.

Analyzing each medium separately emphasizes how individual media capabilities affect the inclination to

rationalize fraud and provides the opportunity for the cross-validation of results. However, in this study the hypotheses about enactment (H5A and H5B) are not explicitly tested. The hypotheses describing the effects of media capabilities on fraud intentions are independently tested for significance by medium. As shown in Figure 3, all of the hypothesized relationships except for Hypothesis 1C are consistently supported. As hypothesized, reprocessability (H1A) and transmission velocity (H1B) are negatively related to rationalizing fraud across all four media. In contrast to these convergent results, symbol set variety has no

consistent effect on rationalization (H1C). Rehearsability (H2A), parallelism (H2B), anonymity (H2C), and motivation (H3) are positively related to rationalizing fraud across all media. Finally, rationalizing fraud has a positive relationship with the intention to commit an act of fraud (H4). The r-squared values for rationalizing fraud and behavioral intention represent substantive amounts of variance described by the model (Cohen, Cohen, West, & Aiken, 2013). The model describes between 26.9% and 41.6% of the variance for rationalizing fraud, and between 41.8% to 53.1% of the variance in behavioral intention is explained.



Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, EM: e-mail, VC: video conferencing, VM: voicemail, SN: social network posts

Figure 3. Summary of Effects of Media Capabilities on Behavioral Intention

We included six control variables when analyzing media effects on fraud rationalization. First, we included a categorical variable representing the communication process that the respondents thought best represented the scenario. MST posits that during cooperative communication, the tendency to use one of two communication processes (i.e., convergence and conveyance) will influence media fit and communication performance (Dennis et al., 2008). However, extant research has suggested that deceptive

acts require a combination of conveying information and converging on meaning (George et al., 2013). This leads to the expectation that both communication processes occur during fraud, and that the communication process will not strongly effect outcomes. The data supported this proposition, as shown in Appendix C. Between 35.4% and 38.0% of respondents thought the scenario was mainly an act of conveyance, while between 54.1% and 58.1% felt the scenario required mostly convergence. Despite an

expectation that the communication process would not significantly affect deceptive behaviors, we chose to include communication process (i.e., conveyance or convergence) as a control variable because MST proposes that individuals will be more successful when communication processes align with media capabilities. As shown in Appendix D, when added as a control variable, the communication process did not have a consistently significant effect on either rationalization or intention.

We also included dichotomous variables for other appropriation factors that may have influenced the results, including the sex of the subject (55% male, 45% female), previous use of the communication technology (98% had experience), previous experience selling goods online (58% had experience), and prior experience with Internet fraud (16% had been defrauded). We also included an ordinal control variable measuring the participants' sensitivity to \$100 as a financial payment.

Monetary sensitivity was measured on a 7-point Likert scale and had a mean of 5.03 with a standard deviation of 1.52. Only 1 out of 24 control variables had a significant effect on intention; experience using the medium reduced behavioral intention when using social networking posts. Only 2 out of 24 control variables influenced peoples' inclination to rationalize fraud. The communication process and experience selling goods online both reduced rationalizing when using social network posts. However, none of the control variables substantively changed the significance of any meaningful paths, altered the r-squared values associated with the dependent variables, or changed the interpretation of analysis. Thus, the interpretation of the

model was consistent across media irrespective of the inclusion of control variables.

3.1.5 Tests of Mediation, Interaction, and Bias

Models of deceptive communication built on MST typically test the direct effects of media capabilities on intentions (Carlson and George 2004; George et al., 2013). As we extend the context of research to address fraudulent behaviors, the theoretical foundations suggest that rationalizing fraud is a necessary antecedent to engaging in fraudulent actions (Rest et al., 1999; Ramamoorti, 2008; Murphy and Dacin, 2011). The model posits that rationalization plays a role as a mediator between media capabilities and behavioral intentions. To test this mediating role, we evaluated a set of mediation models where rationalization was alternately included as a mediator and excluded from the model (Kenny, 2008; Hayes, 2009; Zhao, Lynch, & Chen, 2010). As displayed in Table 5, we observed evidence that motivation and each of the media capabilities that affected behavioral intention were either fully (reprocessability and transmission velocity) or partially (rehearsability, parallelism, and anonymity) mediated by rationalizing fraud (Kenny, 2008; Zhao et al., 2010). There was no evidence of a significant mediation effect on the relationship between symbol sets and behavioral intention for any of the four media. The data indicates that the rationalization of fraud regularly mediates the effects of media capabilities on behavioral intention.

Table 5. Mediation Effects of Rationalization

Exogenous variable	Endogenous variable	Model	Total effect	Direct effect	Indirect effect	Results
Reprocessability	Behavioral intention	EM	-0.291 (p < 0.001)	-0.142 (p = 0.027)	-0.149 (p = 0.003)	Mediation
		VC	-0.058 (p = 0.440)	0.053 (p = 0.404)	-0.111 (p = 0.004)	Mediation
		VM	-0.159 (p < 0.009)	-0.066 (p = 0.200)	-0.093 (p = 0.014)	Mediation
		SN	-0.206 (p = 0.039)	0.066 (p = 0.432)	-0.272 (p = 0.003)	Mediation
Transmission velocity	Behavioral intention	EM	-0.170 (p = 0.008)	0.022 (p = 0.715)	-0.192 (p = 0.002)	Mediation
		VC	-0.287 (p < 0.001)	-0.100 (p = 0.068)	-0.187 (p = 0.003)	Mediation
		VM	-0.020 (p = 0.735)	0.056 (p = 0.264)	-0.076 (p = 0.016)	Mediation
		SN	-0.354 (p < 0.001)	-0.167 (p = 0.012)	-0.187 (p = 0.002)	Mediation
Symbol sets	Behavioral intention	EM	-0.065 (p = 0.314)	-0.037 (p = 0.508)	-0.028 (p = 0.441)	No mediation
		VC	-0.172 (p = 0.015)	-0.128 (p = 0.030)	-0.044 (p = 0.222)	No mediation

Table 5. Mediation Effects of Rationalization

		VM	0.169 (p = 0.021)	0.087 (p = 0.158)	0.082 (p = 0.063)	No mediation
		SN	-0.074 (p = 0.378)	-0.087 (p = 0.191)	0.013 (p = 0.797)	No mediation
Rehearsability	Behavioral intention	EM	0.022 (p = 0.737)	-0.048 (p = 0.402)	0.070 (p = 0.053)	No mediation
		VC	0.242 (p < 0.001)	0.014 (p = 0.835)	0.228 (p = 0.007)	Mediation
		VM	0.125 (p = 0.032)	0.047 (p = 0.335)	0.078 (p = 0.017)	Mediation
		SN	0.047 (p = 0.589)	-0.081 (p = 0.25)	0.128 (p = 0.112)	No mediation
Parallelism	Behavioral intention	EM	0.069 (p = 0.252)	-0.005 (p = 0.927)	0.074 (p = 0.066)	No mediation
		VC	0.234 (p < 0.001)	0.127 (p = 0.014)	0.107 (p = 0.015)	Mediation
		VM	0.315 (p < 0.001)	0.228 (p < 0.001)	0.087 (p = 0.051)	No mediation
		SN	0.162 (p = 0.021)	-0.003 (p = 0.956)	0.165 (p = 0.007)	Mediation
Anonymity	Behavioral intention	EM	0.192 (p < 0.001)	-0.029 (p = 0.584)	0.221 (p = 0.002)	Mediation
		VC	0.021 (p = 0.696)	-0.050 (p = 0.283)	0.071 (p = 0.081)	No mediation
		VM	-0.059 (p = 0.255)	-0.182 (p < 0.001)	0.123 (p = 0.004)	Mediation
		SN	0.114 (p = 0.041)	-0.032 (p = 0.484)	0.146 (p = 0.003)	Mediation
Motivation	Behavioral intention	EM	0.327 (p < 0.001)	0.126 (p = 0.013)	0.201 (p = 0.002)	Mediation
		VC	0.249 (p < 0.001)	0.030 (p = 0.550)	0.219 (p = 0.004)	Mediation
		VM	0.235 (p < 0.001)	0.049 (p = 0.284)	0.186 (p = 0.002)	Mediation
		SN	0.354 (p < 0.001)	0.150 (p = 0.001)	0.204 (p = 0.003)	Mediation

Note: EM: e-mail, VC: voice conferencing, VM: voicemail, SN: social network posts

Next, as a means to test the limits of this context-based theory, we evaluated alternate models that explored the interactions between the media capabilities and motivation (Hong et al., 2013). This alternate model is based on the proposition that personal characteristics and context interact during ethical decision-making (Trevino et al., 1986; Ashkanasy, Windsor, & Trevino, 2006). Extant research about a variety of cognitive decisions, including: engaging in e-commerce transactions (Ramaswami, Strader, & Brett, 2000), adopting medical records systems (Govindaraju, Hadining, & Chandra, 2013), using social networks (Parra-Lopez, Gutierrez-Tano, Diaz-Armas, & Bulchand-Gidumal, 2012), and sharing information (Reinholt, Pedersen, & Foss, 2011) have suggested that motivation may drive behaviors while contextual elements moderate

that relationship (Hughes, 2007). When applying the same logic to the model, we considered whether the capabilities enabled by the medium moderate the relationship between motivation and rationalizing. To test this alternative model, we created centered interaction terms comprised of the interaction between motivation and the six media capabilities (Cohen et al., 2013).

As displayed in Appendix E, the tests of interaction had mixed results. Symbol set variety and rehearsability partially moderated the relationship between motivation and rationalizing when using e-mail, but did not have a significant effect for any other medium. Similarly, reprocessability, anonymity, and parallelism partially moderated the relationship between motivation and rationalizing when using Facebook advertisements. Thus, the tests of

moderation did not reveal consistent significant effects (Aiken & West, 1991; Cohen et al., 2013), but suggest that in certain contexts media capabilities may partially moderate the relationship from motivation to behavioral intention (Hong et al., 2013). We then used a χ^2 difference test to compare model fit between the two nested models (Hair et al., 2010). The differences between the models indicated that the original model fit was significantly better than the interaction model ($\Delta\chi^2 = 1,683.398$, $\Delta df = 219$, $p < 0.001$). Because there was not consistent evidence of interaction effects, the hypothesized model was selected for use in subsequent analyses, rather than the alternative interaction model.

Finally, we tested the results for common methods bias. We used a common latent factor and a marker variable that theory suggests is unrelated to MST. We used “eating attitudes,” a construct used to diagnose eating disorders, as the marker variable for this assessment (Garner & Garfinkel, 1979). Because we have no theoretical reason to assume that eating attitudes are correlated with the MST constructs, this technique allowed the amount of common variance to be parsed between the factors that load onto a common latent factor (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Lindell & Whitney, 2001). The factor loadings to the method factor were not significant (EM: $p = 0.481$, VC: $p = 0.147$, VM: $p = 0.891$, SN: $p = 0.059$), and the indicators’ substantive variances were consistently greater than the variances for the method factor, which indicates that common method variance is unlikely to be a serious concern for this model. The common factor explained only EM: 1.93%, VC: 5.76%, VM: 0.55%, SN: 5.02% of the variance, suggesting that variance due to a common method was not a problem.

3.2 Study 2 – Facebook Advertisement

3.2.1 Design

Behaviors and intentions may not align in information security contexts (Crossler, Johnston, Lowry, Hu, Warkentin, & Baskerville, 2013), so we designed a second study to extend beyond intentions and predict actual fraud behaviors. Study 2 employed a design with observable behavioral outcomes. During the study, participants created advertisements on templates for Facebook classified ads to sell laptop computers. The study was designed to capture intentional misrepresentation and financial gain, two core components of fraud (Wells, 1997), as indicators of fraud behaviors. This study design allows for comparisons between participants’ attitudes about media capabilities and the amount of misrepresentation within the advertisements that they created. The data were gathered from junior-level undergraduate business students at a large midwestern university.

Data for the study was collected in two phases which were separated by a week. Of the 468 respondents that

started the study, 459 completed all parts of the study (98.1%) and were used for the analysis. A week before creating the Facebook advertisements used in the study, participants provided demographic information and estimated the value and condition of a number of items. The items evaluated by participants in the initial meeting included a laptop computer that was used during the second phase of the study. Questions about the laptop’s value and condition were embedded within appraisals of other items to reduce the likelihood that participants would remember their estimates during subsequent parts of the study. All participants evaluated the same heavily used Toshiba laptop computer, which exhibited obvious wear and scratching.

The following week, during the second phase of data collection, participants were shown examples of real Facebook advertisements to ensure familiarity with the medium. Next, participants evaluated the medium’s capabilities. The same scales validated during the previous study were used for Study 2. Again, statistical assessments of the measurement items indicated that the scales exhibited reliability and validity. Then, participants were presented with the task: a real-life version of the scenario used in Study 1 where they would be creating an advertisement to sell a laptop computer. After reading the task, participants completed scales measuring their attitudes and intentions associated with selling the laptop using Facebook. Finally, participants created an advertisement to sell the laptop.

3.2.2 Measurement

The scenario and laptop presented to participants was identical; however, the advertisements created by the participants could vary considerably, as shown in Figure 4. The intentional misrepresentation and overpricing of goods is one of the most common forms of online consumer fraud (IC3, 2015; FTC, 2013), and the measures were designed to provide evidence of an attempt to profit from intentional misrepresentation (Albrecht et al., 2012). We used observable elements within the advertisements as measures of the participants’ actions. Differences between the advertisement and the participants’ estimates of the true value and condition of the laptop, collected the week before, were used to calculate misrepresentation and overpricing. During the first phase of the study, the average estimate of the value of the laptop was \$330.64. When creating advertisements to sell the same laptop a week later, participants listed the laptop for an average of \$401.34, which was 21.4% higher than their estimates of its true value. The difference between a participant’s estimate of the laptop’s true value and the price listed on their advertisement was used to measure intentional overpricing. For example, if a participant had estimated the laptop to be worth \$400, but attempted to sell it in the advertisement for \$500, it was intentionally overpriced by \$100.

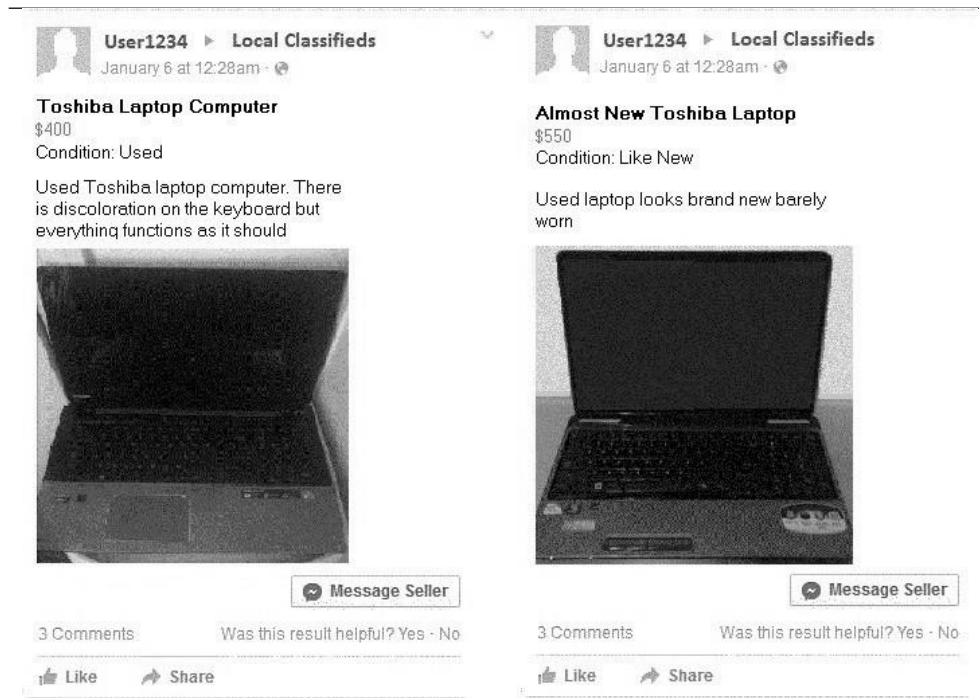


Figure 1. Advertisements Created by Study Participants

We used standard description ratings for Facebook classified ads (i.e., “like new”: 5, “excellent”: 4, “good”: 3, “used”: 2, and “fair”: 1) for each of the items as a means to measure misrepresentation. Estimates of the condition of the same laptop during the previous week indicated that all participants in the study perceived that the laptop was in “Used” or “Fair” condition. As displayed in Table 6, during the second study 297 (64.7%) participants listed the laptop as

being in “Used” or “Fair” condition. About half of the participants (45.9%) created an advertisement with the laptop presented in better condition than their previous estimate of its true state. For example, a person that previously described the laptop as being in “fair” condition, but created an advertisement selling the worn laptop as “good,” intentionally overstated the condition of the laptop.

Table 6. Distribution of Conditions and Prices

Estimate of true condition	Advertised condition	Picture of item
Like new 0 (0%)	Like new 10 (2.2%)	Like new 12 (2.6%)
Excellent 0 (0%)	Excellent 40 (8.7%)	Excellent 39 (8.5%)
Good 0 (0%)	Good 112 (24.4%)	Good 139 (30.3%)
Used 291 (63.4%)	Used 195 (42.5%)	Used 192 (41.8%)
Fair 168 (36.6%)	Fair 102 (22.2%)	Fair 77 (16.8%)
Average estimate of true value: \$330.64	Average price in advertisement: \$401.34	

As a second measure of misrepresentation, participants selected one of five photos to include in their advertisements. Each picture showed an exemplar of a standard Facebook condition description clarifying the meaning of conditions ranging from “new” to “fair” and displayed the exact same make, model, and color

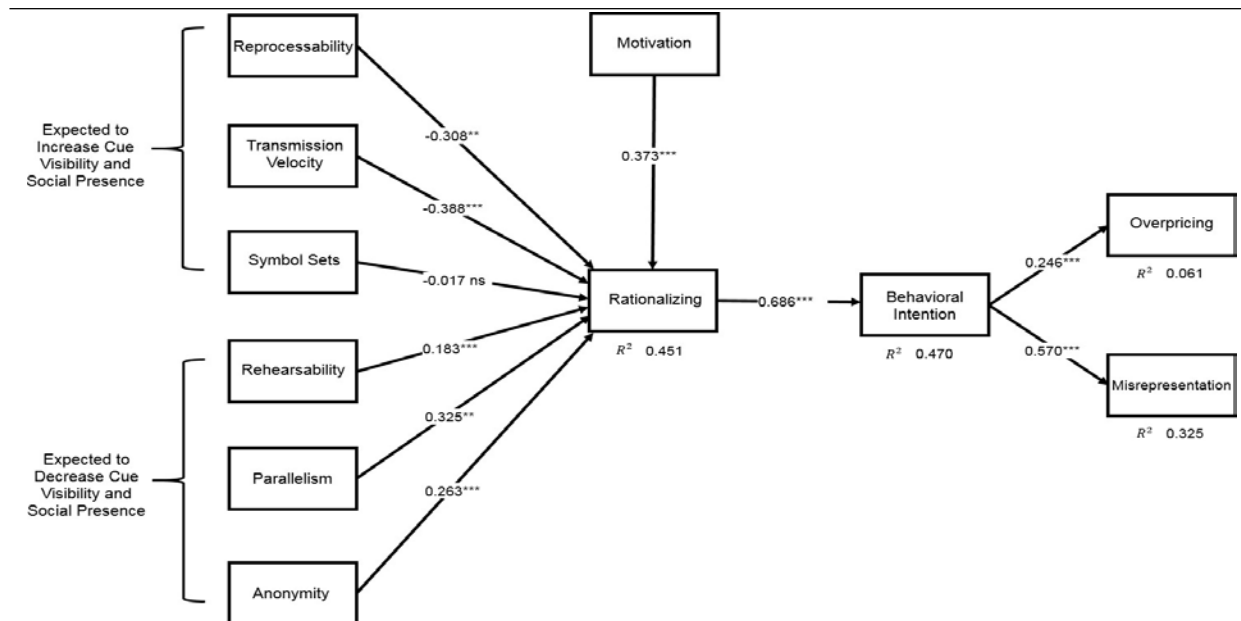
of Toshiba laptop used in the study. For example, the photos representing the “like new” condition were taken before use, whereas the “used” condition showed considerable wear. The laptop physically presented to the participants for the study exactly matched the photos from the “used” condition. Although all the

respondents had previously rated the laptop's true condition as "used" or "fair" during the creation of the advertisements, only 269 (58.6%) participants selected a photo showing the laptop in "used" or "fair" condition. Again, we used these differences to measure the intentional misrepresentation of the laptop in the advertisements.

3.2.3 Analysis

We performed the analysis for Study 2 using a covariance-based structural equation model in AMOS and maximum likelihood estimation. As displayed in Table 4, the preponderance of evidence again supported the relationships proposed in the model, indicating that the model has good fit. The results of the hypothesis tests for Study 2 are displayed in Figure 5 and support the results of Study 1. Consistent with the previous study, the results indicate that reprocessability (H1A) and transmission velocity

(H1B) negatively relate to rationalizing fraud. Similarly, reprocessability (H2A), parallelism (H2B), anonymity (H2C), and motivation (H3) positively relate to rationalizing fraud. Again, symbol set variety (H1C) does not exhibit a significant effect on rationalizing fraud. Likewise, rationalizing fraud positively relates to the intention to act (H4). Intention was positively related to the amount of overpricing (H5A) and the amount of misrepresentation (H5B) in the Facebook advertisements. The r-squared values for rationalizing (45.1%), behavioral intention (47.0%), and the misrepresentation of the laptop's condition (32.5%) indicated that the model describes a substantive amount of variance (Cohen et al., 2013). The model described a statistically significant ($p < 0.001$), but substantively moderate amount of variance of overpricing (6.1%). Accordingly, the model is useful for predicting intentional misrepresentation and overpricing.



Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 2. Effects of Media Capabilities on Fraudulent Actions

To validate that the advertisement creation task contained a moral issue that required ethical reasoning, we asked each participant to explain the question: "What was your strategy for setting the price and features of your advertisement?" Of the 459 participants, 446 (97.2%) described their strategies. We used these qualitative responses to capture post hoc justifications of the participants' actions. Post hoc justifications are nomologically related to rationalization strategies that occur prior to enactment and provide evidence that participants used ethical reasoning (Rest et al., 1999; Murphy & Dacin, 2011).

We coded the responses in respect to whether participants acknowledged using ethical reasoning during the creation of their advertisements. Two coders, familiar with business ethics research but unfamiliar with the research project, performed the coding. The coders agreed in 93.9% of cases as to whether the post hoc moral justification provided by participants contained an explicit acknowledgement of ethical considerations. The interrater agreement as measured by Cohen's κ was 0.91, indicating a high level of agreement (Cohen, 1968). The remaining 27 cases were presented to an arbiter who made the final determination about how to categorize the moral

justifications. As shown in Table 7, of the 446 completed descriptions, in 326 (73.1%) cases the participants described ethical components of their decision, while in 120 (26.9%) cases they did not. Responses including justifications were categorized according to the taxonomy described by Anand et al., (2004). Among the participants, denial of victim and

the metaphor of the ledger (i.e., entitlement to compensation) were the most commonly used justification strategies (Tsang, 2002). There was also a group of 25 (5.6%) individuals who explicitly refused to justify any unethical behaviors. We consider this evidence that participants' advertisement strategies generally included ethical considerations.

Table 7. Examples of Participants' Moral Justification

Category	Moral Justification	Examples
Acknowledged ethical considerations: 326 (73.1%)	Denial of victim: 92 (20.6%)	<ul style="list-style-type: none"> • Buyer deserved to be ripped off. • If you're stupid enough to buy a laptop off of Facebook before looking at it in person you deserve to have it sold to you overpriced.
	Metaphor of the ledger: 79 (17.7%)	<ul style="list-style-type: none"> • I work hard, I deserve it. • I can get away with it and I'm "owed" anyway.
	Social weighting: 59 (13.2%)	<ul style="list-style-type: none"> • Because (I) "really need it" and everyone charges more than things are worth. • Other people have done worse.
	Denial of injury: 45 (10.1%)	<ul style="list-style-type: none"> • If they can afford a laptop they won't miss a little money. • They probably wouldn't notice or care anyway.
	Denial of responsibility: 21 (4.7%)	<ul style="list-style-type: none"> • I can't afford not to. • Don't have enough money now to pass up the change.
	Appeal to higher loyalties: 5 (1.1%)	<ul style="list-style-type: none"> • I have bills to pay. • I will pay it back later, but for now I need to worry about rent.
	Moral refusal: 25 (5.6%)	<ul style="list-style-type: none"> • It's dishonest period. Don't do it. • Asking more is understandable but not morally correct.
Did not acknowledge ethical considerations: 120 (26.9%)		<ul style="list-style-type: none"> • It's in my best interests to price it higher than it is worth because most people will try to haggle anyway and I can sell it for what it's actually worth • Overpricing the laptop first and then they would bargain down to normal price • An item is worth as much as someone is willing to spend on it • Value can be relative/subjective depends on specifications sellers usually want to earn a profit

Finally, the same six control variables from the previous study were included in Study 2. The control variables included in the model did not significantly affect the interpretation of results in Study 2 and there were no indications that common methods bias significantly influenced these results. When the eating attitudes construct (Garner & Garfinkel, 1979) was added to the model as a marker variable, the common factor explained only 9.67% of the variance, suggesting that variance due to a common method was not a problem (Lindell & Whitney, 2001; Podsakoff et al., 2003).

4 Discussion

4.1 Summary of Results

In these studies, we examined how differences in media capabilities affect the rationalization of

fraudulent behaviors. We used multiple studies to analyze the model and test the hypotheses. The outcomes of the analyses were consistent and provided convergent evidence about the influence of media capabilities on the rationalization of fraud. Anonymity, rehearsability, and parallelism increased the inclination to rationalize fraud. In contrast, transmission velocity and reprocessability decreased an individual's inclination to rationalize fraud, and symbol set variety did not have a consistent effect. Our studies also indicate that the effects of media capabilities extend beyond intentions to behaviors. Study participants were more willing to intentionally misrepresent and overprice items when using media with capabilities that reduced feelings of social presence and obfuscated cues of deceit.

4.2 Implications for Research

Our results have important theoretical implications. First, MST is considered to be a marquee theory for understanding how media affects communication in collaborative contexts (Dennis et al., 2008; George et al., 2013), but this research identifies challenges in applying existing media theories beyond the bounds of cooperative communication. We believe these findings will aid in the generalization of media theories to everyday contexts, where up to a third of communication may be noncooperative (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996). There has been a call to discover how combinations of media capabilities influence trust-based communications (Hess et al., 2009). Our research addresses this issue by evaluating the influence of anonymity and the five media capabilities identified in MST. Our findings indicate that the capabilities defined in MST do typically affect communication performance. However, our findings also suggest that future research should continue to seek media capabilities germane to general communication, where self-serving and dishonest messages abound (George & Robb, 2008). We recommend that media capabilities like anonymity (Nunamaker et al., 1991; Sosik et al., 1999), vividness (Hess et al., 2009), and immersion (Agarwal & Karahanna, 2000) should be considered as additions to the capabilities defined by MST when extending that research to general contexts.

Our second theoretical contribution concerns the central role of rationalization in the adoption of information systems for malicious purposes. Despite growth in online fraud (IC3, 2015), and increased research about how consumer trust is affected by the capabilities of websites (Gefen & Straub, 2003; Benlian, Titah, & Hess, 2012; Reidl et al., 2014; Lowry, Moody, Vance, Jensen, Jenkins, & Wells, 2012; Lu, Fan, & Zhou, 2016; Xiao & Benbasat, 2011), there is scant research about how individuals seek to manipulate that trust for dishonest purposes—particularly in a consumer-to-consumer context. Our research addresses this issue by focusing on the perpetrator's use of information systems and the mediating role of rationalization in online consumer fraud. The prominent role rationalization plays in developing an intention to commit online consumer fraud is often reflected in ethical decision-making models (Rest et al., 1999; Albrecht et al., 2012), but is seldom considered when modeling the adoption of information systems for malicious behaviors. Our research demonstrates the value of explicitly modeling rationalization as a means to link attitudes to behaviors in behavioral information security research, where those relationships are often tenuous (Crossler et al., 2013) or inconsistent (Chatterjee et al., 2015).

Our third theoretical contribution involves recognizing the role of context. Our research answers the call for

providing greater context in IS theory (Te'eni, Rowe, Ågerfalk, & Lee, 2015). Media effects are context dependent and the same medium can produce positive or negative communication outcomes in different contexts (Valacich et al., 1992; Sarker & Valacich, 2010). Thus, context is important because research about media effects examines the interplay between the technology artifact and other factors (Hong et al., 2013; Te'eni et al., 2015) and allows researchers to unravel the contexts under which a capability may either add to or reduce communication performance (Carte & Chidabaram, 2004). We tested the same model in a variety of contexts, thus providing information about which relationships are context-dependent and which relationships are general (Te'eni et al., 2015). These tests indicated support for the prominent role of rationalization across contexts and suggested that future research should clarify the conditions under which media effects moderate motivations (Whetten, 2009). In the context of online consumer fraud, the most commonly used rationalization strategies blamed victims or reflected a sense of entitlement. However, the types of rationalization strategies used, and the most effective preventive countermeasures, may change with circumstance (Xiao & Benbasat, 2011). Insights from Hong et al.'s (2013) framework indicate that future efforts can extend this research by decomposing core constructs like rationalization into individual rationalization strategies.

Finally, this research provides a methodological contribution by using perceptions of media capabilities as a level of analysis. Examining how perceptions about media capabilities (anonymity, transmission velocity, rehearsability, etc.) affect decision-making provides a finer grained view than approaches that bundle capabilities by medium (Carte & Chidabaram, 2004). Our findings support the proposition that media have inherent physical properties as predicted by extant research, but that these properties are perceived and used differently by individuals (Dennis et al., 2008). Our findings indicate that study participants rate media capabilities similarly to experts' assessments, but participant ratings can be applied to new technologies and incorporate features added to existing media. We posit that as media evolve to incorporate new features and uses, an emphasis on measuring perceptions of individual media capabilities will provide a more flexible and sustainable approach.

4.3 Implications for Practice

This research offers practical solutions for reducing online consumer fraud by manipulating the mix of media capabilities used in e-commerce information systems. Even incremental changes to e-commerce tool capabilities could have substantial financial impacts; between 2010 and 2015, the Internet Crime Complaints Center has averaged 300,000 complaints

each year with annual losses over \$800 Million (IC3, 2015). Our research identifies media capabilities that decrease fraud behaviors and provide guidance on how to design media intended to facilitate online commerce. Specifically, we recommend that individuals and firms that engage in e-commerce deter fraud by enforcing the use of tools that clearly identify parties and require immediate, individualized, and authentic responses from both buyers and sellers. Similarly, we recommend that e-commerce systems should consider providing archival records and transactions to consumers as a means of deterring fraud, rather than using these records exclusively for investigation and detection (Graziloi & Jarvenpaa, 2000).

In addition, our research challenges the assertion that media capabilities may be bundled together (Carte & Chidabaram, 2004). Despite frequent associations between certain media capabilities, evidence from these studies indicates that these correlations are not assured. For example, while rehearsability and reprocessability are frequently thought to correlate with each other (Dennis et al., 2008), voicemail consistently exhibited low rehearsability and high reprocessability. Similarly, Twitter and SnapChat have introduced features that can automate message deletion and these features would reduce reprocessability without impacting other media capabilities. While we recognize that a purely technological solution is an impractical approach to combat fraud (Xiao & Benbasat, 2011), our research supports the perspective that media are malleable and that designers have substantial precision and control over the capabilities imbued into the media they develop (Carlson & Zmud, 1999; Carte & Chidabaram, 2004). We recommend that a greater emphasis should be placed on designing media that dissuade antisocial behaviors.

4.4 Limitations and Future Research

This research approach has some limitations. First, the scales used in these studies were designed and validated using adult subjects, with some college education, and may not be appropriate or generalizable for testing media effects for children or other less-literate subjects. Similarly, it is conceivable that participants had trouble describing abstract concepts like symbol set variety, which offers an alternate explanation for why the effects of symbol set variety were inconsistent. In addition, during some online consumer fraud schemes, communication involves engagement in back-and-forth banter between individuals. While IDT theoretically addresses this engagement, the scenario-based methodology limits the impact of any cat-and-mouse interplay that might develop as individuals become involved in real-life fraud (Buller & Burgoon, 1996). Studying this interplay may elucidate alternative antecedents of rationalization that may be germane to social contexts. Similarly, the analysis does not take into account the

skill of individuals contemplating engagement in fraud. Future research may be needed to address how highly skilled individuals may interpret media capabilities differently than others (Jensen & Chidambaram, 2015).

Finally, future research may also be useful to identify other antecedents to motivation and to investigate the conditions under which media capabilities may interact with motivations. The interactions between psychological and environmental capabilities could result in more complex rationalizations. The analysis of post hoc justifications indicated that most individuals prioritized a single justification; however, in some cases individuals may combine or overlap rationalizations and justifications. For example, there appears to be a common process of denial used in multiple justifications, including “denial of victim,” “denial of injury,” and “denial of responsibility” (Anand et al., 2004). Although interrater reliability was high indicating these justifications could be conceptually distinguished from one another, these findings also suggests that additional research may be needed to parse common rationalizations and justifications.

5 Conclusion

Current research examining the effects of media on behaviors has largely been focused on activities that involve cooperation (George et al., 2013). The appropriation of technology for fraud remains underexplored in current research. Given the increasing occurrence of e-commerce fraud (IC3, 2015), an improved understanding of how communication tools affect fraudulent behaviors is necessary (Albrecht et al., 2006). The findings described in this research address these problems by identifying those media capabilities that are germane to the act of fraud.

Specifically, we find that media with greater capabilities for reprocessability and transmission velocity decrease rationalizing while greater capabilities for anonymity, parallelism, and rehearsability increase rationalizing. The data also indicated that not all media capabilities have a significant effect; symbol set variety did not affect the rationalization process. These findings also strongly support the position that explicitly modeling the rationalization process of offenders is a critical component for understanding IS security issues (Siponen & Vance, 2010). We expect that the theoretical model proposed in this research will be useful in prospective research about online consumer fraud because it provides a robust foundation for studying attitudes and motivations that affect intentions to act dishonestly.

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Appendix

Table A1. Measurement Scales

Scenario example	You are selling a tablet computer online and intend to use <u>e-mail</u> to communicate with the potential buyers. If you state the condition of the tablet computer to make it appear better than it really is, you could gain an additional \$100 from the sale.			
Construct	Mean	SD	Item	Measure (7-point Likert Scale: Strongly Disagree-Strongly Agree)
Reprocessability (RP) $\alpha = 0.880$	5.21	1.569	RP1	Messages using _____ can be re-examined again later.
	5.20	1.557	RP2	If someone wanted to observe a message again it would be easy using _____.
	5.22	1.568	RP3	People can read or watch a message a second time to understand it better when using _____.
Transmission velocity (TV) $\alpha = 0.918$	4.99	1.572	TV1	_____ allows immediate feedback from others.
	5.14	1.520	TV2	When using _____ people can rapidly respond to each other.
	5.07	1.589	TV3	_____ lets people reply immediately to each other.
Symbol sets (SS) $\alpha = 0.941$	4.47	1.864	SS1	_____ uses many different symbols like words, images, and charts to communicate.
	4.55	1.897	SS2	_____ mixes pictures, words, and other symbols.
	4.64	1.804	SS3	Using _____, the same message can be described using multiple methods like words, images, and charts.
Rehearsability (RH) $\alpha = 0.886$	4.64	1.819	RH1	Messages using _____ can be edited before being sent.
	4.71	1.799	RH2	_____ allows people to check over their messages before they send them.
	4.98	1.599	RH3	People can rehearse messages prior to sending them when using _____.
Parallelism (PL) $\alpha = 0.953$	4.69	1.830	PL1	_____ allows many conversations between people at the same time.
	4.71	1.838	PL2	More than one conversation can occur at the same time when using _____.
	4.66	1.824	PL3	When using _____ a person can have many conversations occurring at the same time.
Anonymity (AN) $\alpha = 0.939$	4.23	1.708	AN1	When people use _____ it is not easy to verify who they are.
	4.11	1.720	AN2	It is not easy to make sure a person is who they say they are when using _____.
	4.35	1.635	AN3	_____ does not allow individuals to confirm each other's identities.
	4.24	1.670	AN4	People cannot confirm each other's identities when using _____.
	4.32	1.690	AN5	I cannot be sure about who I am communicating with when I use _____.
Motivation (MOT) $\alpha = 0.952$	4.75	1.579	MOT1	Selling a tablet computer for more than it is worth would benefit me.
	4.73	1.557	MOT2	I would benefit by selling my tablet computer to someone else for more than it is worth.
	4.65	1.537	MOT3	I have something to gain by overstating the value of the tablet computer I am selling.
	4.80	1.524	MOT4	I could benefit by selling the tablet computer for more than it is worth.
	4.60	1.576	MOT5	Making a tablet computer appear to be in better condition than its true condition would be beneficial to me.
Rationalizing (RAT) $\alpha = 0.939$	3.29	1.631	RAT1	I can justify selling this tablet computer for more than I think it is worth.
	3.31	1.626	RAT2	I believe that it is appropriate to sell the tablet computer for more than it is worth online.
	3.16	1.609	RAT3	In my opinion, it is acceptable to sell this tablet computer for more than I think it is worth.
	3.24	1.586	RAT4	In this circumstance, it is acceptable to make the tablet computer appear to be in better condition than it really is.
	3.54	1.575	RAT5	I deserve the chance to make a little extra by selling this tablet computer for more than I think it is worth.
	2.78	1.579	BI1	If I were going to sell a tablet computer online, I would misrepresent the condition of the tablet computer.
	2.72	1.544	BI2	I intend to misrepresent the condition of the tablet computer if I sell it online.

Table A1. Measurement Scales

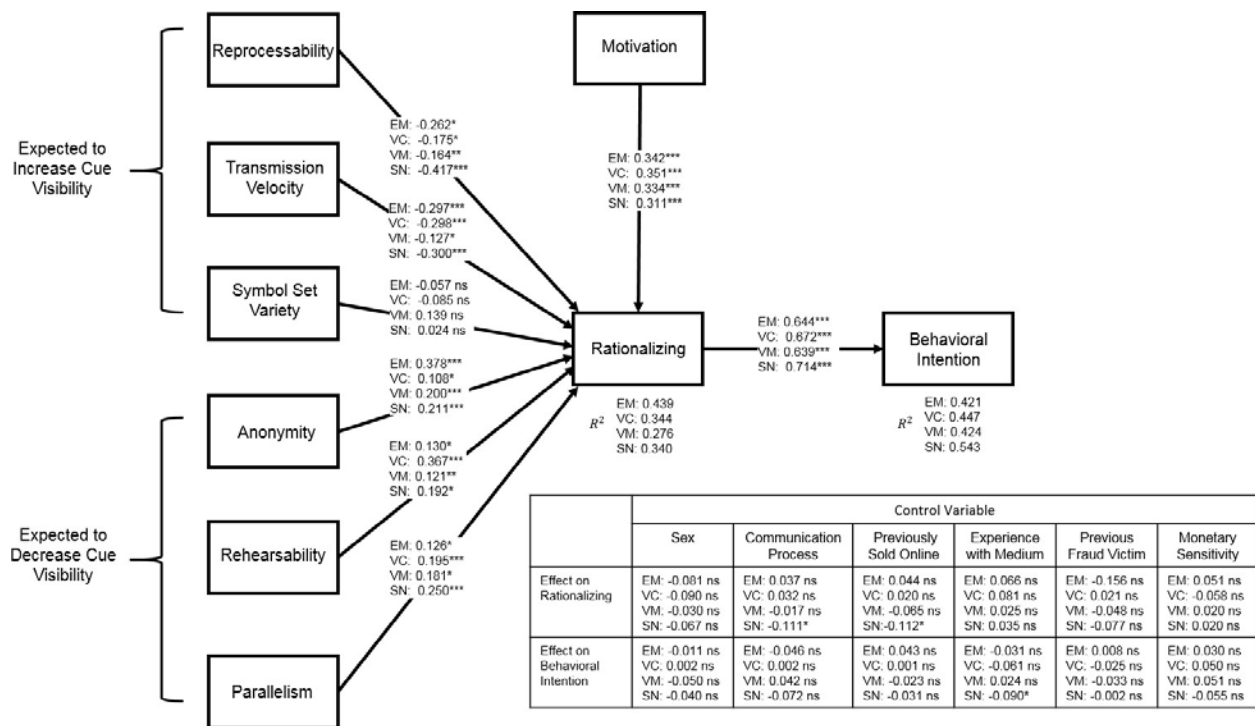
Behavioral intention (BI) $\alpha = 0.956$	2.75	1.572	BI3	If I sell a tablet computer online, I plan to misrepresent the condition of the tablet computer.
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Table A2. Pattern Matrix

Measurement Item	Component					
	1	2	3	4	5	6
RP1	-.005	-.038	.912	.050	.015	.030
RP2	-.014	.046	.890	.061	-.058	.042
RP3	.011	-.003	.912	-.102	.015	-.073
TV1	.050	.040	-.002	.921	.024	.023
TV2	-.037	-.050	.003	.936	-.032	-.026
TV3	.030	.023	.003	.892	.006	-.042
SS1	.948	-.008	.011	.025	-.017	.002
SS2	.900	.060	-.002	.020	.009	-.015
SS3	.932	-.017	-.013	.011	-.026	-.021
RH1	.157	-.076	.082	-.001	-.741	-.108
RH2	.117	-.058	.023	-.010	-.829	-.079
RH3	-.097	.064	-.012	.020	-.965	.062
PL1	.050	-.001	-.014	-.034	-.008	-.956
PL2	.016	.020	.024	.086	.013	-.880
PL3	-.040	.011	-.003	.011	-.019	-.984
AN1	.052	.914	.050	-.017	.040	.035
AN2	.029	.899	-.069	-.005	.006	-.026
AN3	.058	.912	.003	.017	.008	.049
AN4	-.045	.924	.007	.015	-.020	-.048
AN5	-.061	.907	.004	.001	-.034	-.036

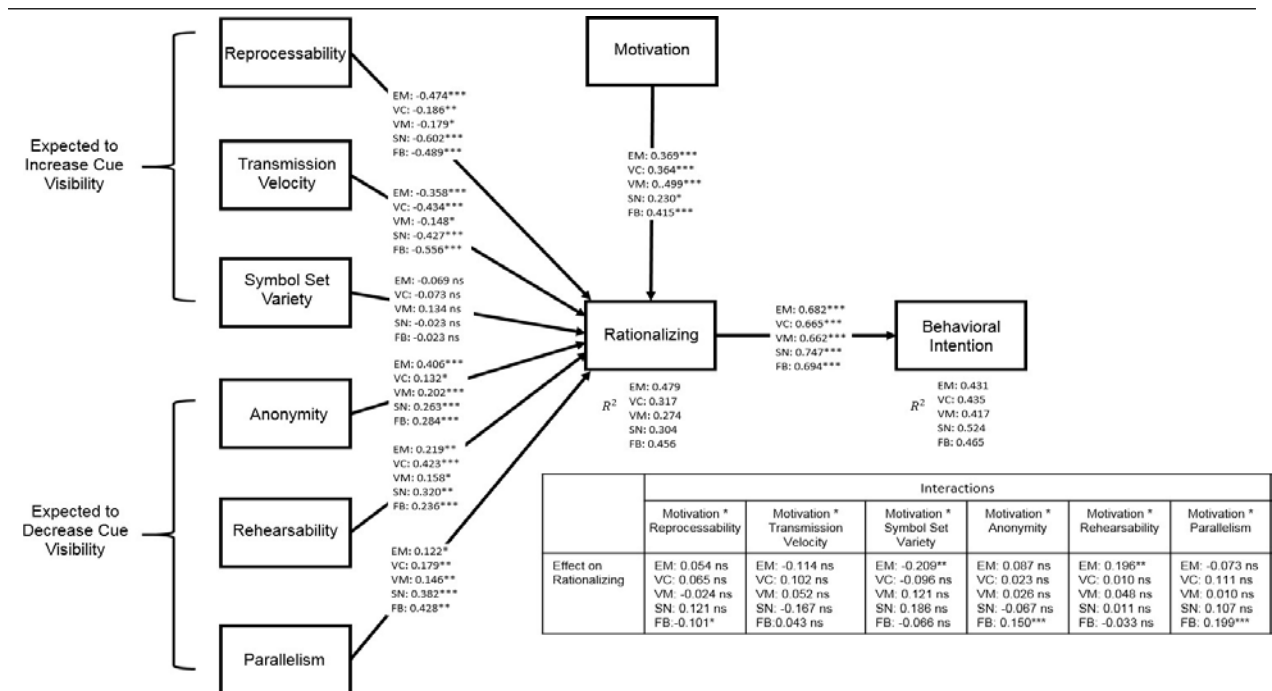
Table A3. Participant Perceptions of Consumer Fraud Scenario

Item: Which situation below better describes the buying and selling of tablet computers online?			
Group	Conveyance (responses, percent)	Convergence (responses, percent)	Neither (responses, percent)
	“The buyer analyzes and makes sense of the seller’s information about the product and terms of sale before making a decision.”	“The buyer and seller engage in back and forth dialog to come to a shared understanding about the condition of the tablet computer and the terms of the exchange.”	“Neither situation describes the exchange better than the other.”
Scale development, n=252	91, 36.1%	137, 54.4%	24, 9.5%
E-mail, n=308	109, 35.4%	179, 58.1%	20, 6.5%
Video conferencing, n=292	220, 37.7%	160, 54.8%	22, 7.5%
Voicemail, n=306	111, 36.3%	170, 55.6%	25, 8.2%
Social network posts, n=279	106, 38.0%	151, 54.1%	22, 7.9%
Facebook ads, n = 459	171, 37.3%	249, 54.2%	39, 8.5%



Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure A1. Media Effects with Control Variables



Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, EM: e-mail, VC: video conferencing, VM: voicemail, SN: social network posts, FB: Facebook ads

Figure A2. Interactions between Media Capabilities and Motivation

About the Authors

Andrew Harrison is an assistant professor of information systems in the Carl H. Lindner College of Business at the University of Cincinnati. He received his PhD in MIS from Iowa State University. Currently his research interests include fraud detection and deterrence, computer-mediated communication, knowledge management, data integration, and virtual worlds. His research has been published in the *Journal of Business Ethics*, *Journal of Information Systems*, and *Journal of Virtual Worlds*, and he has received awards for excellence in teaching.

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