Insight into Individuals' Reaction toward Information Security Breach

Completed Research Paper

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Abstract

While a perpetrator may engage in an information security breach with a negative (e.g., to release anger and frustration) or positive (e.g., to improve security) intent, it is unclear whether intent has an impact on individuals' assessment of the perpetrator's responsibility. This study provides insight into this issue. Additionally, we examine whether moral affect explains the impact of perceived intensity of emotional distress on responsibility judgment (mediating hypothesis) and whether consideration of outcome strengthens the impact of moral affect on responsibility judgment (moderating hypothesis). We analyze the usable responses of 187 participants and the results provide support for the hypotheses, except for the mediating hypothesis for the positive intent act. Lack of mediating effect in the positive intent act suggests that the nature of the act might diminish the effect of moral affect on responsibility judgment. The findings highlight the significant role of consideration of the outcome in the relationship between moral affect and responsibility judgment regardless of the nature of intent.

Keywords: Information security breach, moral affect; moral intensity; consideration of the outcome; responsibility judgment

Introduction

Perpetrators exposed the personal data of 500 million customers of Marriott in an information security breach (Brewster, 2018). This incident was not the first time that perpetrators breached Marriott's system. The hotel chain suffered at least one unreported incident, including an infection that hit the company's own cyber-incident response team (Brewster, 2018). Marriott's data breach was one of the biggest on record which led several government agencies to take action to revise regulation to punish entities that lose or misuse individuals' private information (Brewster, 2018). This action increases pressure for entities to provide increased protection for personal data.

Individuals consider the extent of morality of an act when they assess responsibility (Jones, 1991). A perpetrator's intent (Barclay, Whiteside, and Aquino, 2014), perceived intensity of the harmful consequences (Jones, 1991), and the outcome of an act (Braham and van Hees, 2012) can influence responsibility judgment. Perceived intensity of harmful consequences plays a significant role in how individuals respond to an act which needs to reach a certain threshold before they perceive the act as immoral and assess responsibility accordingly (Jones, 1991). An information security breach causes victims to experience emotional distress (e.g., concerns about misuse of personal data) regardless of a

perpetrator's intent (e.g., enhance security, improve technology, protect privacy, obtain monetary gains, or release anger and frustration) (Chiesa, Ducci, and Ciappi, 2009). To our knowledge, limited research is available for promoting understanding of whether a perpetrator's intent influences responsibility judgment, especially in the case of a positive intent act. While some studies suggest that engagement in a positive intent act may elicit emotional responses which cause individuals to empathize with and condone the perpetrator (Cushman, 2014; DeScioli and Kurzban, 2013; Hannikainen, Miller, and Cushman, 2013), other studies indicate that the harmful consequences as a result of the perpetrator's act cannot be overlooked despite the positive intent; therefore, the act may be perceived as unacceptable (Crockett et al., 2010; Decety, Michalska, and Akitsuki, 2008; Young and Saxe, 2011). We examine two information security incidents, one with a negative and the other with a positive intent to enhance understanding of individuals' reaction toward an information security breach. Increased understanding of the implications of intent on users' responsibility judgment may assist the regulatory authorities to institute legislation which imposes severe penalties on the perpetrators to deter information security breach.

Responsibility judgment requires consideration of both the victims and the perpetrator (Gray, Waytz, and Young, 2012). Individuals consider the victims when they think about the harmful consequences (e.g., emotional distress) in their responsibility judgment. Increased consideration of the victims' emotional distress increases the saliency of the victims' emotional distress and motivates individuals to restore equity for the victims (Crockett et al., 2010). Further, individuals may believe that a perpetrator should feel bad (i.e., moral affect) when he or she realizes that the act causes harmful consequences to the victims (Tangney, 1991). Hence, individuals may hold the perpetrator responsible for the act to restore equity for the victims (Green, Burnette, and Davis, 2008). To our knowledge, limited research is available for promoting understanding of whether a negative or positive intent induces different levels of moral affect (i.e., perception of a perpetrator's feelings of regret, sorry, guilt, and shame) which explains the effect of perceived intensity of emotional distress on responsibility judgment. Additionally, research is sparse on whether a negative or positive intent act affects the moderating role of consideration of the outcome in the relationship between moral affect and responsibility judgment. The purpose of this study is to examine whether (1) moral affect explains the effect of perceived intensity of emotional distress on responsibility judgment (mediating hypothesis) and (2) whether consideration of the outcome strengthens the impact of moral affect on responsibility judgment (moderating hypothesis) for a negative or positive intent act.

Participants completed a questionnaire containing items measuring their perceived intensity of the victims' emotional distress, perceived moral affect, consideration of the outcome, and responsibility judgment. Analyses of the usable responses of 187 participants provide support for the mediating and moderating hypotheses for the negative intent act. The mediating hypothesis is not supported while the moderating hypothesis is supported for the positive intent act.

The remainder of this paper is organized as follows. The next section reviews the relevant literature and develops the hypotheses, followed by the research method and results. Finally, the findings of this study, its limitations and suggestions for future research are discussed.

Background Literature

Moral Intensity

Moral intensity theory asserts that each act encompasses a different degree of moral intensity that has to reach a certain threshold before one is able to recognize an act as a moral issue and become aware of the need for a moral response (Jones, 1991). Moral intensity theory proposes that the following six components: magnitude of consequences, probability of consequences, temporal immediacy, proximity, concentration of effect, and social consensus determine the extent of perceived intensity (Jones, 1991). Previous research (e.g., Jordan, Diermeier, and Galinsky, 2012; McMahon and Harvey, 2007; Robertson, Lamin, and Livanis, 2010) suggests that not all of these components need to be present for the formation of moral intensity. We focus on magnitude of consequences, probability of consequences, and temporal immediacy based on the relevance of these components to the information security incidents examined in this study.

Magnitude of consequences refers to perceived severity of harmful consequences. Moral intensity is high when one believes that the victims have suffered severe harmful consequences. Probability of consequences pertains to the perceived likelihood that the victims might actually experience the harmful consequences. High moral intensity occurs when one feels that the victims are likely to suffer harmful consequences as a result of an act. Temporal immediacy refers to the perceived time distance between the occurrence of an act and harmful consequences. High moral intensity is present when one believes that the victims are likely to suffer the consequences immediately (Jones, 1991). When perceived intensity of the harmful consequences is high, awareness of the harmful consequences and concern about the victims' well-being may result in increased concern for righteousness and a need for engaging in a moral act to restore equity for the victims (Green, Burnette, and Davis, 2008).

Moral Affect

Innate moral beliefs promote harmonious interpersonal and social relationships among individuals and reduce propensity toward harmful acts (Bandura et al., 2001). Although individuals are unlikely to pursue an act that causes harmful consequences to others, they may erroneously conclude that moral beliefs are irrelevant and may engage in an act that causes harmful consequences to others in certain situations (Bersoff, 1999). Once individuals realize that their act causes harmful consequences to others, they might acknowledge that the act indeed violates their moral beliefs. This acknowledgement leads to activation of moral affect; that is, the perpetrators' feelings [i.e., regret, sorry, guilt, and shame (Tangney, 1991)] after they realize that their acts violate morality (Gray and Schein, 2012; Haidt, 2003).

Moral affect occurs when a perpetrator takes the perspective of the victims and realizes that the act causes harmful consequences to the victims (Tangney, 1991). One may take the perspective of the victims, realize the harmful consequences to the victims, and form an opinion about the perpetrator's feelings about an act that violates morality (de Hooge et al., 2011). An observer's perception of the perpetrator's feelings may be consistent with the actual feelings of the perpetrator. The only difference is that the observers can notice and attend to information that the perpetrator might overlook (Epley, Caruso, and Bazerman, 2006) because observers do not have to protect their personal interests. Thus, one's perception of the perpetrator's moral affect can be considered to be reliable (Savitsky et al., 2005).

Responsibility Judgment

The discussion on responsibility in the fields of philosophy, justice, ethics, and social regulation shares a common theme of accountability; that is, the need for individuals to explain and justify their act to others (Tetlock, 1992). Responsibility serves as a mechanism which allows individuals to evaluate, sanction, and control one another's behavior to promote harmony among members of society. When a perpetrator engages in an act that does not conform to the morality of society or impairs harmony among members, individuals may hold the perpetrator responsible for the act (Fischer, 1997).

Perceived consequences is an important factor for assessing a perpetrator's responsibility for the act (Hutcherson and Gross, 2011). The same act that violates morality can produce different perceptions of consequences (Schlenker et al., 1994). For example, telling lies is wrong because it violates society's moral values. However, some lies may produce serious consequences (e.g., cause injury to a victim), while some lies may be perceived as innocuous (e.g., compliment a colleague on her new dress when it seems to be out of fashion). A person telling a lie that causes serious consequences is held responsible to a greater extent than an individual telling a lie that causes less harmful consequences. Differences in responsibility judgment are a result of affect triggered during evaluation of the consequences of an act (Greene et al., 2009; Haidt and Kesebir, 2010). Intense consequences activate strong affect which in turn motivates individuals to attach increased responsibility to the perpetrator (Gray and Wegner, 2009; Tangney, Stuewig, and Mashek, 2007).

Consideration of the Outcome

A moral situation involves a perpetrator and the victims (Gray, Waytz, and Young, 2012). A perpetrator is associated with an act while the victims are associated with the negative outcome they

experience as a result of the act (Gray and Schein, 2012). Individuals consider both the perpetrator and victims to obtain an understanding of the situation before they form a conclusion on the morality of an act (Gray and Wegner, 2009; Weber and McGivern, 2010). Consideration of a negative outcome leads to recognition of the victims' pain and loss; this phenomenon is particularly acute when individuals take the perspective of the victims (Singer and Lamm, 2009), leading to increased possibility of moral condemnation and evaluation of the act as morally wrong (Crockett et al., 2010).

Individuals may also consider a perpetrator's feelings about an act when they assess responsibility. This consideration may activate negative emotional responses on how bad individuals may feel about the act (Hannikainen et al., 2013). Violation of morality can be emphasized to direct attention to the belief that an act is wrong (Miller, Hannikainen, and Cushman, 2014). Although some acts entail a negative outcome, lack of intent to harm the victims may result in increased empathy and consideration of an act in a positive light; therefore, the act may be perceived as less morally wrong (Cushman, 2014; Masek, 2000).

Hypotheses

The Mediating Role of Moral Affect

Information security incidents induce different degrees of magnitude of consequences, probability of consequences, and temporal immediacy. Some incidents might result in increased perceived intensity of emotional distress to the victims, while others might elicit less intense reactions (Jones, 1991). Harmful consequences can elicit strong emotional response when the victims are perceived to suffer high intensity of emotional distress as a result of an incident (Gautshi and Jones, 1998; Van Boven et al., 2010). Individuals may believe that the perpetrator should feel bad for engaging in an act that causes high intensity of emotional distress to the victims (Tangney and Dearing, 2002); hence, the act is perceived to violate morality and increased responsibility is assessed against the perpetrator (Schlenker et al., 1994). Perceived intensity of emotional distress can also influence responsibility judgment; specifically, individuals assign increased responsibility to a perpetrator when an act is perceived to cause high intensity of emotional distress (Coram et al., 2008; Valentine and Hollingworth, 2012).

An information security breach may be initiated with either a negative or positive intent (Chiesa et al., 2002; Thomas, 2002). In the case of a negative intent act, individuals may take action to restore justice and fairness when the perpetrator is perceived to cause emotional distress to the victims (Barclay, Whiteside, and Aquino, 2014). An information security breach with a negative intent entails widespread consequences including emotional distress for the targeted victims and innocent others (Galbreth and Shor, 2010). Thus, perceived intensity of emotional distress is expected to increase responsibility judgment against the perpetrator. Further, perceived intensity of emotional distress may result in the perception that a perpetrator should regret and be sorry, guilty, and ashamed for engaging in an act that causes emotional distress to the victims. Hence, individuals may be motivated to restore equity and fairness to the victims and hold the perpetrator responsible for violation of morality (Tangney, Stuewig, and Mashek, 2007). The above discussion leads to the following hypothesis:

H1a: Moral affect mediates the effect of perceived intensity of emotional distress on responsibility judgment for a negative intent act.

When an information security breach involves a positive intent, the unintentional harmful consequences may be perceived as unavoidable for the attainment of a greater good (Cushman, 2014). However, an act that causes emotional distress to the victims may be viewed negatively, regardless of the perpetrator's intent (Young and Saxe, 2011). Since individuals might not overlook the fact that the perpetrator engages in an act that results in the victims' emotional distress, they may hold the perpetrator responsible for the act (Monroe and Reeder, 2011). Individuals may also conclude that the perpetrator should regret and be sorry, guilty, and ashamed for the act which causes emotional distress to the victims despite the positive intent (Tangney and Dearing, 2002). Consistent with the arguments put forth in hypothesis 1a, the need for restoring the violation of morality and easing the victims' pain may result in increased responsibility judgment against the perpetrator. Therefore,

H1b: Moral affect mediates the effect of perceived intensity of emotional distress on responsibility judgment for a positive intent act.

The Moderating Role of Consideration of the Outcome

Individuals tend to view a negative intent act in a negative light when they assess responsibility (Hamlin, 2013). Increased consideration of the victims' emotional distress (Gautshi and Jones, 1998) due to the harmful consequences of the negative intent act may arouse a strong negative emotional response (Bucciarelli, Khemlani, and Johnson-Laird, 2008) which results in increased responsibility judgment. The next hypothesis investigates this issue:

H2a: Consideration of the outcome moderates the effect of moral affect on responsibility judgment for a negative intent act.

When evaluating responsibility for a positive intent act, individuals may realize that a perpetrator does not have the intention to cause emotional distress to the victims. However, they may not rule out the fact that the victims suffered emotional distress as a result of the act. When individuals consider the outcome of an incident, they may conclude that the perpetrator can choose not to engage in the act which causes the harmful consequences to others (Monroe and Reeder, 2011). Thus, individuals may view the act in a negative light regardless of the positive intent (Decety, 2011). Specifically, negative reaction toward the act may increase when the outcome of the act is considered regardless of the positive intent (Singer and Lamm, 2009), leading to motivation to obtain justice for the victims. Finally,

H2b: Consideration of the outcome moderates the effect of moral affect on responsibility judgment for a positive intent act.

Method

Development of Research Instrument

Two hypothetical scenarios describing two different information security incidents in a business context were developed based on court documents available on the U.S. Department of Justice website, and reports published by the Bureau of Justice Statistics, Computer Security Institute, and the media. One scenario depicted an incident with a negative intent while the other scenario described an incident with a positive intent. The materials revealed that taking revenge on corporations, stealing confidential information for financial purposes, and destroying corporate systems were widely known examples of incidents with a negative intent in corporate system intrusions. Since revenge occur frequently in intrusion reports, it is selected to represent negative intent in this study.

Corporate systems may also be intruded with the intention to help improve information security. This study uses helping behavior (i.e., testing security measures to detect vulnerabilities) to represent positive intent. The information provided in the scenarios is adapted from actual computer incidents from the court documents.

Pretest

First, we conducted a verbal protocol with the pretest participants. They were asked to think out loud their thoughts while they read the instrument. We revised the research instrument based on the feedback received from the verbal protocol procedure. We then pretested the research instrument with 28 senior accounting students. The instrument was further revised based on the feedback received from the pretest participants.

Task

Participants read two hypothetical scenarios[1], answered questions pertaining to the scenarios[2], and provided demographic information. Each participant received a t-shirt for completing the research instrument.

Participants

The usable responses of 187 participants were analyzed. Participants were students, employees, and visitors recruited from a university in the U.S. Their age ranged between 19 and 64 and the mean was 30. About 46% were males, and 84% had professional work experience ranging from one to 42 years and the mean was 8.7 years. Approximately 10% worked in the technology industry, 85% worked in the non-technology-related industry, and 5% did not disclose the nature of their work. The participants' demographic information (i.e., age, gender, work experience, and computer incident experience) did not have an impact on the dependent variable, responsibility judgment.

Measurement of Variables

Perceived Intensity of Emotional Distress

The perceived intensity of emotional distress construct is adapted from moral intensity theory (Jones, 1991; Singhapakdi, Vitell, and Kraft, 1996). Perceived intensity of emotional distress is measured via a three-item scale. Participants responded (on a 7-point scale with 1 = strongly disagree and 7 = strongly agree) to questions assessing their perceptions of the magnitude (the victims would suffer serious emotional distress), probability (the victims would definitely suffer emotional distress), and temporal immediacy (the victims would immediately suffer emotional distress) of the consequences in the positive and negative intent scenarios.

Moral Affect

The literature on moral affect (e.g., de Hooge et al., 2011; Ghorbani et al., 2013; Tangney et al., 1996) suggests that emotions such as regret, sorry, guilt, and shame are activated when individuals encounter an act that causes harmful consequences to the victims. Thus, we assess moral affect via a four-item scale; that is, perceptions of whether the perpetrator should regret and be sorry, guilty, and ashamed of the act (on a 7-point scale with 1 = strongly disagree and 7 = strongly agree).

Responsibility Judgment

Responsibility judgment of the perpetrator's responsibility for the information security breach is measured on a 7-point scale with 1 = strongly disagree and 7 = strongly agree.

Consideration of the Outcome

The extent of the participants' consideration of the outcome in responsibility judgment is measured on a 7-point scale with 1 = strongly disagree and 7 = strongly agree.

Results

Psychometric Properties of Measurement

We use the varimax rotation in Mplus to test the measurement model to assess the psychometric properties of two latent variables, intensity of emotional distress and moral affect. The factor loadings of perceived intensity of emotional distress and moral affect are acceptable for the negative and positive intent acts (Table 1).

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[1] The order of the scenarios was not randomized. Participants were less vulnerable to order effect because they relied on their personal moral beliefs, rather than external factors such as information from other cases, when they evaluated cases involving moral issues (Wright, 2010). In addition, the pretest results indicated that the order of the scenarios did not have an effect on their responses.

[2] The order of the questions was randomized.

Table 1. Loadings, Cross-Loadings, and Average Variance Extracted (AVE) of Latent Constructs

Panel A: Negative Intent			
	Perceived Intensity of Emotional Distress	Moral Affect	AVE
Magnitude of consequences	**.660**	.131	0.500
Probability of consequences	**.783**	.182	
Temporal immediacy	**.629**	.123	
Regret	.063	**.686**	0.583
Sorry	.159	**.787**	
Guilt	.183	**.801**	
Shame	.268	**.700**	
Panel B: Positive Intent			
	Perceived Intensity of Emotional Distress	Moral Affect	AVE
Magnitude of consequences	**.745**	.287	0.651
Probability of consequences	**.878**	.327	
Temporal immediacy	**.704**	.327	
Regret	.253	**.730**	0.736
Sorry	.315	**.790**	
Guilt	.375	**.799**	
Shame	.359	**.849**	

Reliability

The Cronbach's alpha and composite reliability of the items in the perceived intensity of emotional distress construct are 0.748 and 0.756, respectively for the negative intent act (Table 2, Panel A), and 0.844 and 0.850, respectively for the positive intent act (Table 2, Panel B), suggesting acceptable reliability.

The Cronbach's alpha and composite reliability of the items in the moral affect construct are 0.845 and 0.847, respectively for the negative intent act (Table 2, Panel A), and 0.917 and 0.919, respectively for the positive intent act (Table 2, Panel B), indicating acceptable reliability.

Table 2. Reliability and Inter-Construct Correlations

Panel A: Negative Intent				
	Cronbach's Alpha	Composite Reliability	Inter-Construct Correlations	
			Intensity	Affect
Perceived Intensity of Emotional Distress	0.748	0.756	**0.707***	
Moral Affect	0.845	0.847	0.427	**0.764***
Panel B: Positive Intent				
	Cronbach's Alpha	Composite Reliability	Inter-Construct Correlations	
			Intensity	Affect
Perceived Intensity of Emotional Distress	0.844	0.850	**0.807***	
Moral Affect	0.917	0.919	0.694	**0.858***
*Square root of average variance extracted (AVE)				

Validity

We also test the convergent and discriminant validity of the perceived intensity of emotional distress and moral affect constructs. Adequate convergent validity indicates that the constructs should account for at least 0.5 of the average variance extracted (AVE) (Hair, Anderson, Tatham, & Black, 1998). For discriminant validity, the AVE of a construct should be greater than the squared value of its correlation with another latent construct (Hair, Anderson, Tatham, & Black, 1998). The AVE of the perceived intensity of emotional distress construct are 0.500 and 0.651 for the negative and positive intent acts, respectively; hence, the requirements of convergent validity are fulfilled. The squared root values of the AVE are greater than the correlation between the perceived intensity of emotional distress and moral affect for the negative and positive intent acts (Table 2), suggesting acceptable discriminant validity.

The AVE of the moral affect construct are 0.583 and 0.736 for the negative and positive intent acts, respectively, indicating convergent validity. Further, the square root values of AVEs are greater than the correlation between the perceived intensity of emotional distress and moral affect constructs (Table 2), suggesting acceptable discriminant validity.

Test of Mediating Effect

We employ the approach of Muthen and Asparouhov (2015) in the mediation analysis. Using the regression analysis in Mplus, the mediating test results show that moral affect mediates the effect of perceived intensity of emotional distress on responsibility judgment (β[3] = 0.201, p = 0.003, Table 3, Panel A) for the negative intent act, supporting Hypothesis 1a.

The mediating test results do not indicate that moral affect mediates the relationship between perceived intensity of emotional distress and responsibility judgment (β = 0.008, p = 0.898) for the positive intent act. Thus, Hypothesis 1b is not supported.

Test of Moderating Effect

We conduct the moderating test using the regression analysis in Mplus. The Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) (Brown, 2006; Byrne, 2011) are used to assess the model fit. AIC and BIC are comparative fit measures where the model with a smaller value has a better fit. We examine two models where the first model comprises only the main effect of the moderating variable on the dependent variable (i.e., responsibility judgment), and the second model consists of both the main effect and the interaction between moral affect (mediator) and consideration of the outcome (moderator) on responsibility judgment.

Table 3. Results of Hypotheses

Panel A: Test of Mediation										
	IV	MV	DV	1) IV→MV		2) MV→DV		3) IV+MV→DV		Mediation
				β	p-value	β	p-value	β	p-value	
H1a	Intensity	Affect	Resp	0.365	0.000	0.551	0.000	0.201	0.003	Supported
H1b	Intensity	Affect	Resp	0.820	0.000	0.010	0.897	0.008	0.898	Not Supported

[3] All the coefficients are unstandardized.

Panel B: Test of Moderation					
	IV	DV	IV→DV		Moderation
			β	p-value	
H2a	IntAff	Respon	0.167	0.007	Supported
H2b	IntAff	Respon	0.182	0.001	Supported

IV=Independent Variable, MV=Mediating Variable, DV=Dependent Variable
Intensity=Perceived Intensity of Emotional Distress, Affect=Moral Affect, Resp=Responsibility Judgment
IntAff = The interaction between Perceived Intensity of Emotional Distress and Moral Affect

For the negative intent act, the AIC and BIC values of the model without the interaction term are 5271.706 and 5368.178, respectively. When the interaction term is included, the AIC and BIC values decrease to 5266.626 and 5366.210, respectively, indicating that the model with the interaction term has a better fit. The results indicate that consideration of the outcome strengthens the effect of moral affect on responsibility judgment ($\beta = 0.167$, $p = 0.007$, Table 3, Panel B) for the negative intent act, supporting Hypothesis 2a.

For the positive intent act, the AIC and BIC values of the model without the interaction term are 5353.213 and 5449.685, respectively. These values decrease to 5340.354 and 5439.937, respectively, after the interaction term is introduced, suggesting improved model fit. The results reveal that consideration of the outcome strengthens the effect of moral affect on responsibility judgment ($\beta = 0.182$, $p = 0.001$, Table 3, Panel B) for the positive intent act; therefore, Hypothesis 2b is supported.

Discussion

The results show that moral affect explains the effect of perceived intensity of emotional distress on responsibility judgment for the negative intent act. When the victims are perceived to experience emotional distress as a result of the negative intent act, individuals might believe that the perpetrator should regret and be sorry, guilty, and ashamed of the act, leading to judgment of increased responsibility to restore equity for the victims. This finding is consistent with prior research (e.g., Baumeister, Stillwell, and Heatherton, 1994; de Hooge et al., 2011; Haidt, 2008; Ketelaar and Au, 2003) suggesting that moral affect is elicited when morality is violated.

However, for the positive intent act, moral affect does not explain the effect of perceived intensity of emotional distress on responsibility judgment. Considering the nature of positive intent, individuals may perceive the act as less disastrous due to lack of intention to cause emotional distress to the victims. Individuals might conclude that the victims' emotional distress is a result of a side effect from the positive intent act, and that the ultimate outcome of improving information security might not be achieved without the act. Therefore, the positive intent act may be perceived as less morally wrong and the perpetrator may be perceived as less responsible for the act. This contention is consistent with prior research findings (e.g., Cushman, 2014; Masek, 2000).

The results also indicate that consideration of the outcome positively strengthens the effect of moral affect on responsibility judgment for both the negative and positive intent acts. This suggests that consideration of the outcome increases the belief that the perpetrator should regret and be sorry, guilty, and ashamed of the act (i.e., moral affect). Consideration of the outcome reminds individuals of the sufferings of the victims (Singer and Lamm, 2009), leading to the belief that the act is morally unacceptable regardless of whether the intent is negative or positive.

This study highlights the significance of the nature of intent and consideration of the outcome in individuals' evaluation of moral issues (i.e., information security breach). Since the findings suggest that individuals might condone a positive intent act, organizations should be cognizant of potential perpetrators who engage in information security breaches with a negative intent but claim that they do not have any intention to cause harmful consequences. Perpetrators may claim that they engage in an information security breach with a positive intent (Chiesa, Ducci, and Ciappi, 2009) and use this as an excuse to continue to engage in the activity.

When perpetrators hack a corporate system with an intent to improve system security, organizations can emphasize the harmful consequences to discourage the act. Since these perpetrators do not have any intention to cause emotional distress to the victims, they may not even realize that the act would cause emotional distress to the victims (Thomas, 2002). Perpetrators engaging in an information security breach with a positive intent usually send messages to organizations prior to the intrusion to inform them of the information security weaknesses. They also offer suggestions on security enhancement and are unlikely to attack the systems again if the entities have taken appropriate actions to improve their systems (Chiesa et al., 2009). However, some organizations do not take these messages seriously; hence, the perpetrators may attack the systems again to compel these organizations to improve their systems (Nicholson and Dash, 2011).

Limitations and Suggestions for Future Research

This study has some limitations. First, consideration of the outcome and responsibility judgment are assessed separately via only one item. Future research can develop comprehensive scales to measure these constructs to provide additional insight into the findings. Further, since the findings are based on a survey of the participants, future research can design an experiment to promote understanding of the issues examined in this study. An experimental study can shed light on the insignificant mediating effect of moral affect on the relationship between perceived intensity of emotional distress and responsibility judgment for the positive intent act reported in this study.

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