

THE FOX IS GUARDING THE HENHOUSE:  
CAN INTERPERSONAL CONFLICT  
DAMAGE AN ORGANIZATION'S  
INFORMATION SECURITY?

by

AMMAR NURBHAI

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Abstract

THE FOX IS GUARDING THE HENHOUSE:  
INTERPERSONAL CONFLICT AND  
INFORMATION SECURITY

Ammar Nurbhai

The University of Texas at Arlington, 2014

Supervising Professor: Jingguo Wang

As computer networks grow ever more interconnected, securing an organization's information is becoming increasingly vital. At the forefront of this threat is that of the insider, an individual who is already behind the firewall. Extant literature related to the causes and motivation behind malicious insider behavior is lacking. This study examines whether workplace interpersonal conflict can motivate an individual to retaliate against an organization's digital information assets. The moderating effects of Organizational Justice and anger control are also explored to determine whether these constructs can mitigate the risk of retaliatory behavior. The link between Anger and subsequent aggression are also examined.

To test the hypotheses, an online survey was carried out on a student sample, resulting in 232 usable responses. Principle Least Squares (PLS) and Bootstrapping was used to analyze the data. The results supported all of our hypotheses, indicating that interpersonal conflict can induce anger, which subsequently can lead an individual to violate an organization's Information Security Policies. Organizational Justice significantly reduces the effect of conflict on anger and anger control significantly reduces the effect of anger on policy violating behavior.

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## Chapter 1

### The Insider Threat

From 1968 through 1985, John Walker, a United States Navy Chief Warrant Officer, spied for the Soviet Union in exchange for the paltry sum of ten thousand dollars. Although not very high in the U.S. Military's chain of command, by chance of luck and circumstance, Walker happened to gain access to highly classified and sensitive U.S. military data, including naval fleet movements, exercises and highly detailed information on the top secret SOSUS underwater surveillance system, which tracks submarine movements through a series of hydrophones strategically placed throughout the Atlantic and Pacific oceans.

For seventeen years, senior officials in the defense department were perplexed as to how the Soviets were able to avoid the SOSUS system and know in advance the location of the U.S. naval fleet. During his time as a Soviet spy, Walker helped the USSR gain access to over one million pages of encrypted naval messages. It has been said that Walker, and the subsequent spy ring he formed to facilitate his espionage, was the biggest security breach in United States naval history.

This scenario demonstrates the insider's ability to cause lasting damage to an organization's reputation and information assets. "Insiders are employees or others who have (1) access privileges and (2) intimate knowledge of internal organizational processes that may allow them to exploit weaknesses (Willison and Warkentin, 2013, pp. 2)". The paramount risk an insider can pose is recognized by governments both foreign and domestic. A report by the British Armed Forces stated that the ever growing threat of the insider is of primary concern to their national security (Walker, 2008).

In the 2013 Data Breach Investigations Report (DBIR), the Verizon RISK team reported that 14% of all data breach incidents were conducted by insiders, a 10%

increase from that of the previous year. What is even more troubling, is the fact that many organizations fail to report information security breaches perpetrated by insiders, in the fear that the negative publicity might damage their image or stock prices (Richardson, 2007; PWC, 2013). This obviously suggests that the number of insider attacks might be even greater than those reported by these surveys.

Although rare, accounting for only 14% of all intrusions, the damage an insider can cause could potentially be catastrophic to an organization. However, the exact reasons why an insider may choose to perpetrate such acts is still unknown. Prior research conducted on the insider threat has revealed that insiders typically have multiple motives in carrying out their activities (Kowalski *et al.*, 2008; Keeney *et al.*, 2005); with interpersonal conflict being one of the two most common motivators, especially in regards to IT organizations.

In an attempt to combat and curtail employee computer abuse, organizations have started deploying sophisticated technological software, such as Intrusion Detection Systems, that try to safeguard an organization's data by red flagging any activity that deviates from the norm (through the use of sophisticated algorithms). However, this plays back into the old adage of "when all of you've got is a hammer, everything looks like a nail". This sentiment is supported by Willison and Backhouse (2006) who claim that "the distorted image of security held by managers is often equated with a myopic understanding of the problem and how it should be addressed [...] in many organizations IS security is often perceived as a purely technical concern (Willison & Backhouse, 2006, pp. 405)".

What the purely technological based approach fails to take into account however is that insiders are already behind the firewall; he or she already has trusted access to an organization's secure data (Willison and Warkentin, 2012). A report conducted by the

United States Secret Service (Secret Service) National Threat Assessment Center (NTAC) and CERT, showed that out of 36 confirmed cases of illegal cyber activity that occurred in the government sector between 1996 and 2002, 58% of them required very little technical expertise (Kowalski, *et al.* 2008). Another joint NTAC and CERT report conducted in the financial and banking sector, showed similar results (Randazzo, *et al.* 2005). This highlights the fact that an insider doesn't need to use sophisticated algorithms or attack patterns in order to breach an organization's security perimeter; even simple commands will do the required task.

The focus now is on shifting away from relying solely on technological deterrent measures, and incorporating socio-organizational factors to help mitigate the risk of insider computer abuse or sabotage (Bulgurcu, Cavusoglu, Benbasat, 2010). As mentioned before, it is important to identify the risk factors that would lead an individual to carry out a malicious cyber-attack beforehand and try to find ways of alleviating those factors before they prove to be a threat (Willison and Warkentin, 2013).

In a joint study by the Secret Service NTAC and CERT on insider events within the telecommunications industry, 67% of all breaches perpetrated by insiders were motivated by work related issues, such as employment termination, a dispute with a former or current employer, demotions, and a variety of other issues (Kowalski, *et al.*, 2008). In a separate study, this time conducted in industries related to critical infrastructure, "a negative work related event triggered most insiders' actions" (Keeney *et al.*, 2005, pp. 14). These work related events are similar to the ones reported by Kowalski *et al.*, (2008) and primarily involved a dispute with a coworker or supervisor, employment termination or demotion and dissatisfaction with corporate policies/procedures.

Clearly, a healthy organizational atmosphere is vital for employee well-being- and, as can be surmised from the previously mentioned studies, work related issues can

sometimes result in severe consequences; not just to the individual, but to the organization itself. The question now becomes: is conflict the main culprit behind causing an individual to engage in such destructive behaviors?

If organizations are to be successful in stopping the insider from carrying out his/her malicious activities, then it would be prudent to understand potential antecedents and ways to mitigate those risk factors. This is the primary focus of our research, and through it, we hope to find answers to the following questions:

1. Is workplace interpersonal conflict a potential risk factor in motivating employees to engage in deviant activities?
2. What negative affective feelings arise because of conflict?
3. Can a sense of perceived Organizational Justice help mitigate these risk factors?

While prior empirical studies have examined two or more of these constructs (Fox, Spector and Miles, 2001; Meier *et al*, 2013; Ayoko, Callan, Hartel, 2013), none to the best of our knowledge have studied the entire dyad. Neither have they taken a holistic view of these variables and their relationships. We feel that in order to get a better understanding of the 'big picture', it would be wise to investigate how all of these factors interact with each other.

Furthermore, as Willison and Warkentin (2013) have pointed out, there has been scant research done on IT employees as potential sources of insider threats. The present research study aims to address this gap in the literature. Additionally, there has been a distinct lack of literature regarding whether interpersonal conflict might lead to retaliatory behavior in the form of an Information Security Policy (ISP) violation. Although prior research has examined the link between conflict and deviant workplace behavior, and the moderating role Organizational Justice plays in reducing the likelihood of retaliation; our

study examines these linkages in an IT context. In addition, our study also examines whether interpersonal conflict can lead an individual to violate ISPs. Essentially, the aim of this study is to examine 'dark side' behaviors and ways to mitigate them.

Prior literature suggests that high amounts of injustice may lead to anger (Barclay, Skarlicki & Pugh, (2005) and that anger, in turn, may lead to aggression. In contrast, our study looks at the relationship between high amounts of justice and anger. Specifically, we wish to examine whether a high amount of Organizational Justice can reduce anger. Further, it addresses the question of whether anger might lead an employee to engage in retaliatory acts (in the form of noncompliance behavior). The current research also examines the moderating role that Anger Control has on anger and subsequent noncompliance behavior.

Thus, our study expands upon research already done and explores new directions, constructs and relationships. Over the next few sections, we shall delve a little deeper into the meaning of the constructs, the prior research conducted on them and how they fit into our research model. However, before we do that, it would be beneficial to dig a little deeper into the case of the insider and how information security has changed from the time of John Walker to the present day and age.

## Chapter 2

### Information Security Policy Compliance

Let us fast forward to 2011; a sustained and persistent cyber-attack hits the information systems networks of Lockheed Martin, the largest U.S defense contractor. A separate attack, this time perpetrated by a mere USB flash drive inserted into a laptop brought the entire Department of Defense to lockdown. In a separate incident during that same year, Creech Air Force Base was victim to a key logger on their Predator drone command and control data stream.

All of these events signaled a radical shift in the way espionage and even warfare is conducted in the 21<sup>st</sup> century. Whereas human intelligence systems, such as spy rings, are still existent and in certain circumstances extremely effective, the majority of espionage is conducted through digital means.

As computer networks grow ever more interconnected, securing an organization's information is becoming increasingly vital. The advent of the Internet gave rise to the computer hacker, accompanied by his/her various personal agendas, whether they be political, state-sponsored, or people just looking for "cheap thrills".

In 2013, cyber warfare was for the first time, considered by national security officials an even bigger national security threat than terrorism or terrorist- affiliated networks such as Al-Qaeda. Over a nine year time span, the Verizon RISK team, in collaboration with the Computer Emergency Readiness Team (CERT) and the United States Secret Service (Secret Service), estimated that a record 1.1 billion records were compromised by either external hackers or even insider agents.

As the threat of cyber espionage becomes increasingly global and complex, organizations have started to spend millions of dollars shoring up the security of their outer perimeter by implementing various technologies such as firewalls and intrusion

detection systems (IDSs). However, even with all of these technologies at their disposal and even more sophisticated technologies being developed every day to help stem the tide of data breaches, the most dangerous threat to information security is often times overlooked: the insider. Unfortunately, the inherent threat posed by an insider is oftentimes overlooked in the course of developing safeguards to information networks.

In a troubling finding, a global security survey conducted by Ernst and Young (2002) reveals:

Yet again we see greater concern about vulnerability to external attacks (57%), than internal (41%), and yet leading research groups continue to confirm that more than three quarters of attacks originate from within organizations (pp. 8-9).

In a separate study, a survey conducted by Carnegie Mellon's Software Engineering Institutes (SEI) reported that while the distribution of those who caused the most damage to an organization (either internal or external), in terms of financial costs or operations, appear to be equal, a large number of respondents indicated very little attention was paid to insider threats (CSO, 2007). For example, the use of background checks, employee monitoring and employee security awareness training all dropped between the years 2006 and 2007 (CSO, 2007).

In a study of information security done from the perspective of criminological theory, Willison and Backhouse (2006) reported eight specific factors that lead to opportunities for computer crime. Indeed, one of the factors identified was "erroneous perceptions of IS security risk". Organizations continue to believe that the greatest threats they face continue to be from the outside. While the largest number of attacks may originate from outside the organization (92% as reported by Verizon's 2013 DBIR), it only takes one insider with access to sensitive data or intimate knowledge of loopholes in an organizations information networks to do significant damage.

Take the case of a disgruntled system's administrator who was previously employed by a thriving defense firm. He alone developed and managed the organization's computer networks. Angry because of his diminished role, he decided to centralize the software that managed the company's manufacturing processes onto a single server. Following his termination, the insider detonated a logic bomb that he had previously installed, causing the organization to lose their only copy of the critical software. The damage done by this single act of corporate sabotage cost the company an estimated \$10 million, which led to the subsequent layoff of eighty employees (Keeney, *et al.*, 2005).

In a separate incident, an insider, several weeks after his resignation, used bogus accounts he had previously created to change all of the organization's administrator passwords, delete two databases, change the computer registry and delete the entire billing system (Kowalski, *et al.*, 2008). While fairly rare, these two cases highlight how much damage can be perpetrated by a single rogue employee.

Obviously, not all damage caused by insiders is malicious in nature, and following this train of logic, not all insiders are deviant and untrustworthy. Willison and Warkentin (2013) identified three types of insider behavior, all falling on a continuum: (1) passive, nonvolitional noncompliance (to an organization's Information Security Policy...to be discussed later), (2) volitional (but non malicious) noncompliance, and (3) volitional and malicious noncompliance.

Passive, nonvolitional noncompliance refers to the failure to engage in security behaviors, and occur by accident and without malicious intent. Volitional noncompliance is the result of actions that knowingly disregard security protocol, but that do so without malicious intent. Examples would be employees who fail to create database backups, share passwords with coworkers or fail to shred sensitive documents.

“Such violations, although significant, are often dwarfed by a major insider abuse event, in terms of their cost to an enterprise (Willison & Warkentin, 2013, pp. 3)”. These actions are perpetrated by the volitional and malicious noncompliant type; that is, employees who knowingly violate the I.S.P with intent to harm the organization. It is these events, volitional and malicious which will be the focus of this thesis, and as Willison and Warkentin (2013) stated earlier, are the ones which pose the biggest threat to an organization.

With so many security risks in play, how can organizations help to safeguard their information security? In an effort to curtail the misuse of Information Systems (IS), organizations have developed Information Security Policies (ISPs). These policies are formulated to guide the behavior of employees (Whitman, Townsend and Aalberts, 2001), and clarify what is deemed to be appropriate and what is not. Often, they also articulate the consequences of failure to conform to acceptable behaviors.

However, ISP’s by themselves are not enough. Simply having policies in place does not guarantee that individual employees will abide by them (Bulgurcu, Cavusoglu and Benbasat, 2010). In an effort to increase end user compliance, many organizations and researchers have investigated various methods to persuade employees to abide by the IS terms set forth by their organizations.

For example, in a study measuring mandatory Enterprise Resource Planning (ERP) software usage by a major technology firm based in China, Xue, Liang and Wu (2011) sought to investigate whether punishment is an effective methodology to increase compliance by employees. They found that the perceived justice of punishment (i.e., does the punishment fit the crime?) was a more salient factor than the actual act of punishment itself. However, in keeping with the literature that punishment is an emotionally charged event for an individual, the study found that punishment is only

perceived as justified if it happens to an individual other than oneself (Xue, Liang and Wu 2011). If the punishment is applied to the self, it is intrinsically seen as unfair (i.e., “I only violated the policy once, I don’t deserve to be punished”) (Xue, Liang and Wu 2011; Barsky and Kaplan, 2007).

In another study that again focuses on mandatory ERP usage by employees in China, Liang, Xue and Wu (2012), sought out to determine whether reward or punishment is a more salient factor in ensuring end user compliance. They found that while both reward and punishment ultimately increased end user IT compliance, reward was only more effective on employees with a focus on attaining rewards, while punishment was more effective in all other cases. Perhaps a reason for this is because in order to attain rewards, good behavior must be consistent for a prolonged period of time, while punishment is immediately applied after just one instance of bad behavior. Therefore, a temporal distance is implied: rewards are delayed whereas punishment is immediate.

Johnston and Warkentin (2010) investigated whether the use of fear appeals is an effective methodology to increase end user behaviors specifically meant to mitigate the risk of spyware. Fear appeals are persuasive messages designed to induce individuals to engage in a specific course of action by describing the terrible things that will occur if they do not comply (Witte, 1992). Common examples of this are pest control ads one commonly sees on television. The fear arousal in this case, would be an infestation (of rodents, roaches, ants, etc.) and the only way to combat it is to call the respective pest control service.

Again, fear is a highly emotionally charged event, and the arousal of too much fear may actually hinder an individual’s perception of their ability to combat the threat (Kavanagh & Bower, 1985). The findings by Johnston and Warkentin (2010) support this

notion. They found that response efficacy, self-efficacy, social influence and threat severity all play a role in motivating an individual to engage in threat mitigation behaviors. However too much threat severity may actually cause individuals to engage in behaviors meant to reduce the pertinence of the fear itself, often by engaging in denial, such as ignoring the fear altogether.

Even with the effective use of punishment and fear appeals to motivate employees to comply with ISP's, the fact remains that employees are still the weakest link in an organization's cyber security (Mitnick and Simon 2002; Warkentin and Willison, 2009). Clearly, merely having ISP's in place will not safeguard an organization's information security and different individual factors can influence the degree to which employees abide by the terms set forth in ISP's.

To investigate whether implementing a code of ethics in addition to ISPs might influence an individual's judgment to engage in unethical behavior, Harrington (1996) measured a sample of 219 employees spanning nine organizations in northeastern Ohio. This study, found that a psychological trait termed Denial of Responsibility (RD) (the likelihood an individual will take responsibility for his actions) was highly correlated with computer abuse intentions. Harrington (1996) found that individuals high in RD (those who won't take responsibility for their actions) were much more likely to view computer abuse in a favorable light, when compared to their low RD counterparts. Unfortunately though, it was found that having a code of ethics overall will not deter high or low RD individuals from computer abuse intentions; implying that merely implementing a code of ethics, or even making individuals sign it, will not be sufficient to deter computer abuse.

This highlights an important fact made earlier by Johnston and Warkentin (2010) who warn against the dangers of implementing a "cookie cutter" approach to ISP compliance. Siponen (2000) claim's that many factors influence employees' ability to

engage in security behaviors, such as knowledge of the threats, their individual ability to guard against them and their respective access privileges and motivation. It is these myriad of factors that make ensuring employee compliance to ISP such a difficult task.

A study conducted by Leonard & Cronan (2001) found that multiple personal factors can influence whether or not an individual is likely to behave ethically towards their organization's digital information assets. Their study, found that personal beliefs, ego strength (i.e. conviction to one's purpose), gender and the unique organizational situation all interact to predict ISP compliance. These results are again supported in a separate study conducted by Bulgurcu, Cavusoglu, Benbasat (2010) who found that an individual's normative beliefs, attitude and self-efficacy all heavily influence an employee's compliance behavior.

Borrowing from the Criminology literature, specifically General Deterrence Theory, Straub Jr. (1990) set out to investigate whether implementing security software might ward off potential ISP violations. In a large sample of 1,211 employees, Straub Jr. (1990) found that implementing a security system significantly reduced computer abuse. However, this is not to say that relying on the technology alone was responsible, but rather it was the knowledge that security software was in place, and effectively being used, that deterred computer abuse.

Table 2.1 provides a broad overview of the literatures have influenced this paper in regards to ISP compliance and misuse. It is important to note that none of these papers have examined conflict empirically, or its potential link to subsequent Information Security Policy violations. In addition, the table also provides the constructs that each of these studies measured and the theories that influenced their research models.

Table 2.1 Literature Overview

Citation	DV Definition	Constructs	Theories
Johnston & Warkentin (2010)	Spyware software usage	(1) Response Efficacy (2)Self-Efficacy (3)Threat Severity (4)Threat Susceptibility (5)Social Influence (6)Behavioral Intent	Protection Motivation Theory
Bulgurcu, Cavusoglu, Benbasat (2010)	ISP Compliance	(1) Assessment of Compliance (2) Normative Beliefs (3) Intention to Comply (4) Self-Efficacy	Theory of Planned Behavior Rational Choice Theory
Willison & Warkentin (2013)	ISP Violation	(1) Behavioral Intent (2) Motivation	Security Action Cycle Neutralization Theory
D'Arcy, Hovav & Galletta (2009)	IS Misuse Intention	(1) Perceived Sanction Severity (2) Perceived Sanction Certainty (3) SETA (4) Computer Monitoring (5) ISP (6) Behavioral Intent	General Deterrence Theory
Siponen & Vance (2010)	IS Misuse Intention	(1) Informal Sanctions (2) Formal sanctions (3) Shame (4) Neutralization Techniques	Neutralization Theory General Deterrence Theory
Kowalski <i>et al.</i> (2008)	ISP Violation	(1) Motivations	None
Leonard & Cronan (2001)	IS Misuse Intention	(1) Ethical Behavior Intention (2) Attitude Toward Ethical Behavior (3) Normative Beliefs (4) Ego Strength (5) Locus of Control (6) Scenario (7) Gender	Theory of Planned Behavior Theory of Reasoned Action

Table 2.1 *Continued*

Harrington (1996)	IS Misuse Intention	(1) Code of Ethics (2) Denial of Responsibility	General Deterrence Theory
Straub Jr. (1990)	IS Misuse	(1) Deterrents (2) Rival Explanations	General Deterrence Theory
Xue, Liang, Wu (2011)	IS Compliance	(1) Punishment (2) Punishment Expectancy (3) Perceived Justice of Punishment (4) Satisfaction (5) Perceived Usefulness (6) Perceived Ease of Use	Organizational Justice Punishment
Liang, Xue, Wu (2012)	IS Compliance	(1) Reward Expectancy (2) Punishment Expectancy (3) Promotion Focus (4) Prevention Focus	Control Theory Regulatory Focus Theory
Guo, Yuan, Archer, Connelly (2011)	Nonmalicious Security Violation (NMSV)	(1) Attitude Toward Target (2) Utilitarian Outcomes (3) Normative Outcomes (4) Self Identity Outcome (5) Attitude About NMSV	Theory of Planned Behavior Theory of Reasoned Action

It has already been stated that conflict is a potential motivator of ISP violating behavior. The next logical question to ask ourselves is what type of conflict should organizations be most concerned with? Are certain types of conflict more compelling than others in motivating an individual to perpetrate destructive acts? Are all conflicts bad? And, for that matter, are there different types of conflict? The research now, focuses on the definition of conflict- and its antecedents- as well as the varying forms that conflict might take and their potential ramifications.

## Chapter 3

### Conflict Inside the Workplace

Over the years, many researchers have tried to operationally define what exactly conflict means (Schmidt & Kochan, 1972). A brief literature review on this topic brings scores of various definitions, with some researchers claiming that conflict is the result of an opposition of goals between two parties (Putnam & Poole, 1987), incompatible wishes and irreconcilable desires (Boulding, 1963), or when an individual simply feels obstructed by another person (Van de Vliert, 1997). Other researchers have tried to define conflict as a point in time (i.e., that conflict is not stagnant, it is in a state of perpetual shift) (Schmidt & Kochan, 1972).

This view, that conflict is always changing as time passes, has led many researchers to try and pinpoint when exactly conflict occurs. Is conflict merely an antecedent condition? Is conflict the emotions that emerge because of those conditions? Or, is it the end result (i.e., the behavior itself)? Antecedent conditions include any conditions/states that preceded the conflict, such as an unhealthy work environment or a rocky relationship with other organizational members. Affective states include the emotions that arise because of the conflict and the behavior itself, which is the subsequent resulting behavior that emerges because of conflict.

Some have criticized that this definition is overly broad, and conflict is, in fact, all of these conditions combined, a dynamic process if you will (Pondy, 1967). For the purposes of this study, we define conflict as: (1) antecedent conditions, (2) affective states, (3) and the conflict behavior itself. This definition, while broad, encompasses all the various states of conflict and correlates with the various constructs in our research model.

Delving into the literature, we discover that within the realm of conflict itself, there are three different types of conflict that many researchers have found within various organizations, namely: Relationship, task and process conflict (Jehn & Mannix, 2001). Each of these conflicts deals with a different facet of workplace behavior, and as studies show, some can be more detrimental than others.

Relationship conflict (or interpersonal conflict, as it is termed in some studies) “is a perception of interpersonal incompatibility and typically includes tension, annoyance and animosity among group members” (Simons & Peterson, 2000, p. 102). This type of conflict is “fraught with negative tension, emotion, and personal friction” (Shaw et al. 2011, p. 392). Relationship conflict can occur at all levels within the organization: with subordinates, coworkers or supervisors. Relationship conflict can be highly damaging to both the individual and to the organization as a whole. For example: a high amount of conflict with a supervisor can be detrimental to both the subordinate (who may experience high levels of stress and anger) (Tepper, 2000) and potentially to the organization (in the form of retaliation), since supervisors represent the company they work for (Levinson, 1965).

Task conflict mainly involves perceptions of disagreement among group members about how to approach daily work and includes differences in opinions, ideas and viewpoints (Jehn, 1995). Related to task conflict, process conflict involves disagreements about processes used to delegate certain tasks, or ways in which to complete the project (Jehn & Mannix, 2001).

While the general and predominant view for most of the century has been that conflict is bad and should be avoided as much as possible (Bhat, Rangnekar & Barua, 2013), recent research has suggested that this definition may not apply to all types of conflict. In fact, some researchers have found that a moderate amount of task and

process conflict may actually benefit the organization, in that it encourages employees to voice their concerns, fosters creative thinking and prevents stagnation (Bhat, Rangnekar & Barua, 2013; De Dreu, 2006; Shaw et al., 2011). However, we cannot generalize this finding to relationship conflict, as all research conducted on this dimension concludes that interpersonal conflict always leads to negative outcomes (Jehn, 1997).

Relationship conflict is not only detrimental by itself, but it also exacerbates negative situations when it is combined with task conflict. In a study measuring the interplay between relationship conflict, task conflict and team effectiveness, Shaw *et al.* (2011) found that when relationship conflict is low, a moderate amount of task conflict is associated with higher team performance. In essence, they found the existence of an inverted U-shape relationship between task conflict and team performance: a moderate amount of task conflict leads to increased performance whereas too low or too high is detrimental. However, this relationship is transformed in a linear negative slope when in the presence of a high amount of relationship conflict. When relationship conflict is high, team performance is consistently low.

Other studies have shed further light on the detrimental impact relationship conflict can have on employees. Recent findings have shown that interpersonal conflict is linked to lower job satisfaction- and, even more importantly, psychological well-being (Kivimaki, *et al.*, 2003). In a separate study, Myers and Larson (2005) stated that "Relationship and process conflict should be resolved early in the conflict situation to stave off employee dissatisfaction and poor work performance" (pp. 308).

It is clear from the extant literature that workplace conflict can be detrimental towards an organization. However, might these workplace grievances translate into cyber security threats for an organization? Despite the renewed emphasis on investigating non-technological means for combatting malicious employee behavior, the impact conflict

may have on information security hasn't been researched sufficiently. In their guest editorial, Warkentin and Willison (2009) have stated:

However, we should not forget that with regard to IS security in the organizational context, there is another form of behavior that should be considered- the behavior of the offender. Interestingly, this is an area of research which has received far less attention from the IS security community (pp. 102).

Warkentin and Willison (2009) further go on to state that:

Although research on the insider threat is increasing, there currently exists a lack of insight into the problem of employee disgruntlement and how this plays a role in motivating some form of computer crime (pp. 103).

It is clear from the above article that conflict might pose a larger problem than information security specialists currently realize. Although the link between conflict and information security has not been thoroughly researched, the few studies that have been conducted show support for the notion that workplace conflict can lead to acts of retaliation against an organization's information networks (Shaw, *et al.*, 1998).

The reasons behind this might be sufficiently explained from the results of the 'Forum on Information Warfare'; a gathering that drew top military officials from all branches of the United States military and academic officials from around the world. At this forum, FBI personnel and researchers from George Washington University (GWU) emphasized the looming threat that IT employees (especially System's Administrators) might pose to an organization's information networks (Messmer, 2003).

In research conducted on case studies of prior criminal computer use by insiders, FBI and GWU researchers found a variety of motivations for disgruntled employees: the chief among these being financial gain and revenge for workplace grievances (Messmer, 2003). This sentiment is shared by the 'Prestel Hacker', aka. Robert Schifreen, who stated that revenge against a workplace grievance, is one of the five motivational factors

influencing hacking behavior (Hoath & Mulhall, 1998). This obviously begs the question, why would workplace grievances translate into a cyber-security threat?

Jerrold Post, a professor of psychiatry at GWU, posits that the typical psychological profile of an IT employee may explain the rationale for their malicious behavior. According to Post (Messmer, 2013), a majority of IT employees fit the classical stereotype as depicted in popular culture: a loner who prefers the solidarity and predictability of a computer rather than the complexity of human interaction (Messmer, 2003; Shaw, *et al.*, 1998). IT employees are generally introverts and express themselves primarily through online means rather than 'talking it out' with another individual. He suggests that intervention by management early on could prevent problems from escalating, because introverts are less likely to seek help (Messmer, 2003).

Other studies conducted on the motivations underlying employee hacking (a clear breach of any ISP) have also supported the notion that workplace grievances, such as a conflict with a coworker or management, may translate into acts of retaliation against an organizations information security.

In a study seeking to determine the psychological makeup of deviant insiders, Shaw, *et al.*, (1998) showed evidence of the existence of a dangerous subgroup of IT employees whose primary motivation of entering the IT field was frustrations with interpersonal relationships. These individuals showed a history of aggressive behaviors towards peers and coworkers, and a propensity for anger towards authoritative figures. These character traits, it can be argued, might cause a simple workplace conflict to escalate into ISP violations; particularly because these same individuals have detailed knowledge of the security vulnerabilities of the organization's information systems (Shaw, *et al.*, 1998).

Shaw *et al.*, (1998), also noted the existence of a 'recurring pathway'. This pathway included: "predisposing personal traits, an acute situation stressor, emotional fallout, biased decision-making or judgment failures and failure of peers and supervisors to intervene effectively" (pp. 9). This pathway, in turn, "led directly to insider attacks" (Griffin & Grimala, pp. 3).

Clearly, the theoretical underpinnings of the link between conflict and subsequent ISP violations are present. However, the mounting evidence for this relationship does not stop there. Motivations related to revenge for some perceived workplace grievance can be found in prior case studies examining malicious insider attacks against an organization's information security.

In a study investigating illicit insider activity within the IT and telecommunications sector, the Secret Service in collaboration with CERT found that a majority (63%) of individuals who committed illegal insider activity were employed in a technical position and 57% of individuals were single and never married (perhaps lending credence to the 'loner' psychological profile) (Kowalski, *et al.*, 1998). Most importantly, over half of the insiders cited revenge in response to some work related grievance as their primary motivation for attack. Of these work related grievances, a dispute with a coworker or management ranked second highest in terms of proportion (Kowalski, *et al.*, 1998).

Another joint Secret Service/CERT study in industries related to critical infrastructure, such as banking and finance, continuity of government, the defense industry and a host of other vital sectors; found even more startling results. Again, a dispute with a coworker or supervisor ranked second highest in terms of workplace grievances. What is disturbing, however, is that a perceived workplace grievance was the primary motivation 92% of the time. Again, the insiders who committed the acts were former or current IT employees. As can be expected, these employees expressed their

anger through the medium that they knew best. A majority of insiders “exploited systemic vulnerabilities in applications, processes, and/ or procedures [...], compromised computer accounts, created unauthorized backdoor accounts, or used shared accounts in their attacks” (Keeney, *et al.*, 2005, pp. 17). Needless to say, all the above mentioned activities would be clear violations of an ISP.

While conflict is inevitable in many organizations, having effective methodologies to deal with conflict is critical. Many conflict management techniques exist to deal with conflict; and the one that is chosen depends upon a myriad of factors such as personal preference or perhaps even culture. For example, while employees in the United States and China both strongly value a direct communication style, which favors being straightforward and outwardly expressing one’s views and opinions (as opposed to ‘beating around the bush’); employees in the United States also valued a more assertive conflict management approach, while employees in China rated a nonassertive approach more highly (Brew & Cairns, 2004). An assertive management approach isn’t concerned with reducing animosity, but rather, is focused on high achievement.

Direct communication was also one of the top three conflict resolution strategies utilized by teams that maintain high levels of performance overtime. In high performance teams, researchers found that the content of the information being delivered was more important than the delivery style and that directly discussing the reasoning behind any work decisions was also vital to successfully resolving conflict of any type (not just interpersonal) (Behfar *et al.*, 2008).

Regardless of the conflict management approach utilized, the research is clear that effective conflict management is an important predictor regarding the outcome in the conflict-behavior dyad. Given the importance of effective conflict resolution strategies, it would be prudent for organizations to invest in developing a process to handle conflict

filled situations as they arise. Thomas (1992) argues that having conflict resolution processes in place can help restore fairness, improve working relationships and satisfy the parties involved. Thomas (1992) believed that by employing all of the aforementioned strategies (such as fairness and improving relationships), organizations can help reduce the negative impact caused by all types of conflict.

Having processes in place in order to resolve workplace disputes is clearly vital in order for functioning relationships to thrive and for employees to perceive that there is a sense of justice within the organization. A natural extension of the concept of 'justice' would lead us to the realm of Industrial/Organizational Psychology, a field that studies human behavior inside the workplace. This subject introduces us to the concept of 'procedural justice', a sub-construct that is part of an even larger and broader construct known collectively as Organizational Justice.

## Chapter 4

### Organizational Justice: A Potential Moderator?

The Organizational Justice literature has been well established, with many researchers proving the benefits that strong Organizational Justice policies can have on employees- and, in turn, the organization's bottom line.

Organizational Justice is composed of three different components: Distributive, Procedural and Interactional Justice (Greenberg, 2011). Each justice deals with a different facet of organizational policies and if employed correctly, can have significant beneficial impacts on employee well-being.

Distributive Justice deals with the allocation of rewards (Homans, 1961), and is similar to Equity Theory. Equity Theory states that an employee compares his or her input and output ratio with that of referent others, such as a co-worker, industry standards or even oneself at a prior place in time (Adams, 1965). If the employee perceives that his input/output ratio is unbalanced, then s/he will take actions to correct those measures (Adams, 1965). For example, if an employee perceives that his co-worker is getting paid an equal amount, but does significantly less work, then that employee will feel an imbalance in his equity ratio.

This is similar to Distributive Justice, which refers to the perceived fairness of the distribution of rewards or resources of some type. In order for an employee to perceive an allocation as either fair or unfair, he must have a frame of reference (i.e., "fair compared to what?"). This is where equity theory commonly comes into play. If the employee feels that everyone receives rewards that are equal to the amount of work they put in, then a high level of distributive justice will be felt. However, if the employee feels that distributions are unequal, or that rewards or resources are not allocated accordingly,

then the employee will feel a high level of distributive injustice. According to equity theory, the employee will then take steps to balance his input/outcome ratio (Adams, 1965).

Procedural justice refers to the perceived fairness of the processes used to determine reward or resource allocation (Leventhal, 1980). Organizations can ensure they have a high level of procedural justice by giving their employees voice in the procedures. Studies in performance appraisals showed that if employees felt that their inputs during the process mattered (Greenberg, 1986), then even if the results of the appraisal were negative, employees still felt satisfied with the processes used (Landy, Barnes-Farrell and Cleveland, 1980).

The third term, Interactional justice, is composed of two additional components: Interpersonal Justice and Informational justice (Bies & Moag, 1986). This type of justice mainly focuses on the interactions between the organization and an employee, while distributive and procedural justice mainly focuses on the structural elements (Greenberg, 2011). Interactional justice as a whole is considered with making the employee feel valued by his or her organization. The way an organization can accomplish that, is through effective use of interpersonal and informational justice.

Interpersonal justice mainly involves treating employees with dignity and respect, making sure the employee feels valued and that supervisors care about subordinates' personal well-being and welfare (Greenberg, 2011).

Informational justice is primarily concerned with providing subordinates fair and proper explanations as to why certain decisions were made. It deals with ensuring employees understand the procedures used to make allocations of rewards and/or resources (Greenberg, 2011).

Interpersonal and informational justice have traditionally been lumped together, and recent research indicates that these two constructs are highly correlated to one another, with an  $r_c = .66$  in a meta-analysis conducted by Colquitt *et al.* (2001). “This strong relationship makes sense given that it is in the course of explaining negative outcomes that enlightened managers may be especially inclined to treat subordinates with dignity and respect (Greenberg, 2011, pp. 284)”. Additionally, following the release of Colquitt’s (2001) article, only 7 out of 87 articles related to Organizational Justice published in five leading Industrial/Organizational Psychology academic journals differentiated between the two constructs; and of these, over half of the correlations reported were in excess of .70 (Ambrose & Schminke 2009). Therefore, given the high correlation, in addition to the evidence presented by past research, we shall not differentiate between the two sub-constructs for the purposes of this study.

For the purposes of our study, we will mainly be focusing on procedural justice and specifically, the interpersonal justice subcomponent of interactional justice. The reasons for this, is because given the conditions of our scenario (in which including outcomes did not make sense), measuring distributive justice was unnecessary and would have needlessly lead to confusion for participants. This would have subsequently lead to poor validation scores for distributive justice and would have detracted from the overall survey instrument.

The same argument can be made for why we chose not to include informational justice. Since informational justice involves providing individuals with fair, thorough and unbiased information regarding outcomes, we felt this would not have made sense; given both that the scenario did not involve a definitive outcome and because modifying the scenario to include informational justice would have increased its length, which we

feared, would have affected our response rate and led respondents to lose interest in the scenario.

Furthermore, since we are using the three factor model of Organizational Justice, it is possible to remove and only focus on certain components, as prior studies have done (Pillai, Williams & Tan, 2001; Blader, Chang and Tyler, 2001; Nesbit, Nabatchi & Bingham, 2012). Prior studies have also investigated interpersonal justice and/or interactional justice either separately (Skarlicki, Barclay & Pugh, 2008) or in combination with each other, with the exception being that each subcomponent was used to measure separate constructs (LeyRoy, Bastounis and Minibas-Poussard, 2012). This is possible because although conceptually they are highly related to one another, recent studies have suggested that interpersonal and interactional justice display distinct convergent and discriminant validity (Colquitt, 2001). Additionally, as LeRoy, Bastounis and Minibas-Poussard (2012) have shown, it is interpersonal justice (not informational justice) that most strongly interferes with active CWB by mitigating anger. This same study also utilized Colquitt's (2001) Organizational Justice scale (which is the same scale we used) and both studies have still conceptually referred to both components as interactional justice.

Since we have now gained a better understanding about the various constructs that compose Organizational Justice, we can now delve into the literature describing the moderating role that Organizational Justice plays in reducing adverse and negative behaviors, both in experimental laboratory settings and inside actual organizations.

Numerous studies have been conducted on how Organizational Justice can help to reduce deviant employee behaviors inside the workplace, such as employee theft.

Similar to insider threats, employee theft is considered to be one of the most pervasive and serious problems facing the field of human resource management and is

considered to be the most expensive form of nonviolent crime against businesses; costing organization's an estimated \$994 billion a year (Association of Certified Fraud Examiners, 2008).

While numerous explanations ranging from easing financial pressure to norms tolerating theft have been posited by researchers, Hollinger & Clark (1983), in a study based on dozens of surveys and interviews, argued that the primary cause of employee theft was not a moral decay of society, but rather the byproduct of employee dissatisfaction. Employees who felt exploited by the organization were much more likely to engage in deviant behaviors in order to restore some semblance of equity. Note how similar this is to Adams' (1965) equity theory, which states that if an individual feels unfairly treated, then he/she will take steps in order to restore their sense of equity.

This theory, that employee theft was caused by employee attitudes towards the organization, was investigated by Greenberg (1990) on two manufacturing plants that temporarily slashed employee pay by 15% over a period of time. The dependent variable, employee theft, was then compared to pre and post-reduction theft rates (or alternatively to control groups). Greenberg (1990) found that plants that reduced their employee pay, also suffered a significantly higher rate of employee theft. This finding is hardly surprising and can be described by many people as 'obvious'. However, the main point of importance in this study, and similarly in this paper, is the manipulation of the independent variable: Organizational Justice.

Between the two firms, one manufacturing plant employed a high sense of Organizational Justice, giving employees a detailed and sensitive explanation as to why the cuts were necessary, while the other plant essentially told employees to 'deal with it'. No explanation was given as to why the pay cuts were made nor was any sense of empathy felt in regards to the employees' plight. Needless to say, employee theft was

significantly reduced (although still apparent) for the manufacturing plant that employed a high sense of Organizational Justice. This seems to suggest the moderating role Organizational Justice can play in reducing malicious employee behaviors.

This sentiment is further supported by a study conducted by Skarlicki and Folger (1997) that investigated the link between Organizational Justice and Organizational Retaliatory Behaviors (ORBs). ORBs are negative behaviors used to punish the organization and its representatives for a perceived injustice (Skarlicki and Folger, 1997).

In their study, Skarlicki and Folger (1997) used a sample of manufacturing employees and measured how often they noticed their coworkers engaging in ORB's. They also investigated the amount of distributive, procedural and interactional justice present within the workplace. Unsurprisingly, the results of the study showed that Organizational Justice predicted ORBs. What is surprising however, are the interactions between the different components of Organizational Justice themselves. The results showed that the interaction of distributive justice and retaliation was only present when there was a low amount of procedural and interactional justice. Similarly, the two-way interaction of distributive and procedural justice was only present in the absence of interactional justice, while the two-way interaction of distributive and interactional justice was only present in the absence of procedural justice.

The results of this study suggest that the different components of Organizational Justice seem to influence each other. In essence, it is not necessary to have high levels of every component of Organizational Justice. For example, if employees feel that their supervisors treat them with dignity and respect, then a lack of proper procedures and unfair distributions maybe tolerated, rather than if no sense of justice was perceived at all. This study also shows that procedural and interactional justice may be substituted for one another. This would lend support to the notion that procedural justice and

interactional justice both lead to various forms of socially counterproductive work behavior (Alexander & Ruderman, 1987), suggesting that procedural and interactional justice are more socially oriented constructs compared to distributive justice.

Organizational Justice can also influence the conflict resolution styles employees engage in with their supervisors. When employees perceive high levels of justice to be present, they are much more likely to engage in cooperative resolution styles, such as integrating, obliging and compromising (Rahim, Magner & Shapiro, 2000). Cooperative styles are ones in which meaningful amounts of concern are shown for the other party, and generally are likely to produce positive outcomes and reduce conflict, rather than acting as a catalyst to aggravate it even further (Rahim, Magner & Shapiro, 2000).

The research clearly dictates that employing high levels of Organizational Justice is vital in order to maintain a functioning organization. However, despite the benefits that Organizational Justice clearly offers, retaliatory acts (or I.S.P violations in this study) may still occur towards an organization's assets. Reasons for this could be plentiful, but prior research indicates that when employees feel unfairly treated, feelings of resentment and anger may manifest themselves (Greenberg, 1990), in acts of retaliation against the organization (Hollinger and Clark, 1983). Employees engage in these acts as part of an effort to try and restore some semblance of equity (Skarlicki & Folger, 1997).

In a study on the common causes of workplace anger episodes, Fitness (2000) found that the leading cause of anger among subordinates was a feeling of unjust treatment by other employees. This finding, that a feeling of injustice may instigate anger, is further supported by Umphress *et al.* (2013). This study is particularly interesting because it investigated the effect of injustice on third party observers. Among the notable findings of this study, is that even the intent to perpetrate injustice induced feelings of anger in third party observers. Therefore, this seems to suggest that anger can be

induced by the mere motivation to commit an unjust act; in other words, injustice doesn't actually have to take place to instigate anger. Overall literature reviews conducted by Barclay, Scarlicki and Pugh (2005) and Beugre (2005) further support the finding that perceptions of injustice may incite feelings of anger.

However, despite the mounting evidence linking perceptions of injustice to anger, research examining the relationship between Organizational Justice and anger has been extremely scant. It has already been shown that Organizational Justice is effective in reducing workplace retaliatory behavior; therefore it would stand to reason that perhaps it would be equally effective in reducing a potential antecedent of retaliation, specifically anger. It would make theoretical sense to examine the relationship between these two constructs. If a high amount of injustice can trigger negative affect, then perhaps a high amount of justice might reduce it.

Prior studies have shown that most ORBs and CWBs are instigated by some form of workplace conflict, whether it be a layoff, pay cut or an interpersonal conflict with a colleague or superior. These same studies have also shown that Organizational Justice is effective at reducing CWBs and ORBs. If Organizational Justice can moderate the linkages between conflict and retaliatory behavior, it stands to reason that perhaps it can also moderate the linkage between conflict and its common consequent: anger. After all, if retaliatory behavior is a potential consequent of conflict; and if anger is also a potential consequent of conflict, then perhaps Organizational Justice would be effective in reducing anger as well. It has already been shown to be effective in reducing the conflict-retaliatory behavior dynamic, so perhaps it will also be effective in reducing the conflict-anger dynamic.

Conceptually, Organizational Justice as a whole deals with how employees are treated in the workplace. It would make sense that this construct would have a negative

relationship with anger, a feeling that develops when an individual feels unjustly treated. It would also be reasonable to examine the potential moderating effect that justice may place between conflict and anger.

Therefore, in order to fully appreciate the link between conflict and subsequent I.S.P violations, anger should be studied as a potential intermediary factor in this paradigm.

## Chapter 5

### Anger and Anger Control

The effect that anger has on motivating an individual to act on his or her negative feelings is an important one and should be fully explored in order to gain a thorough understanding of the conflict>retaliatory behavior paradigm. Anger, it can be argued, is a universal emotional experience, transgressing both cultural and ethical lines. However, before we delve too deeply into the anger literature, perhaps it would be prudent to gain a better understanding of what exactly it is that we mean by anger and a common misconception of reducing anger.

For the purposes of this study, anger will be defined as a negative affective, approach related emotional state. This definition is consistent with prior definitions of anger offered forth by previous researchers (Potegal & Stemmler, 2010; Lohr, *et al.*, 2007). While fairly straight forward, a particular aspect of this definition that might prove confusing is the term 'approach- related' emotional state. What exactly is meant by this? And how does it differ from another popular state that is termed 'withdrawal- related' state?

An 'approach- related' emotional state is one that encourages behaviors to actively deal with the problem and bring it to a successful resolution (Potegal & Stemmler, 2010). This, in a sense, is in stark contrast to 'withdrawal related' behaviors which are often caused by sadness and depression. These behaviors cause an individual to effectively 'withdraw' from their life. Rather than facing the problem, they, in essence, run away from it (Potegal & Stemmler, 2010). In some form, it can be thought of as a form of an avoidance mechanism.

Although historically, anger has been thought of as a negative emotion that has no inherent positive aspects, recent research suggests this may not entirely be true.

Anger, if viewed from an evolutionary perspective, is a self-defense mechanism that is activated in response to some outside threat (Potegal & Stemmler, 2010). This type of primal tendency can still be seen even in today's more cultured and civilized world. If a burglar gets shot in the midst of a home invasion by the home owner, few tears, if any, are shed for the burglar. Why? It was an act of self-defense. In the end, it can be boiled down to the most basic animalistic part of the human brain that everything and everyone is born with: self-preservation of life.

Although it can be argued that the term *anger* can encompass a wide variety of physical behaviors, such as breaking objects or physically assaulting another individual, researchers have been adamant that these outward physical acts of anger are more aptly described as 'aggression'. In their paper, Lohr, *et al.*, (2007) note that:

Anger should also be distinguished from aggression, though anger may be expressed through aggression. Aggression is overt antagonistic behavior that functions to eliminate the source of threat or harm. Aggression can be motivated by anger arousal, but it need not be [...] when present, anger seems to facilitate aggression (pp. 54).

Even at the theoretical level, most authors sharply distinguish between anger and aggression. It is wholly possible to be aggressive without being angry and conversely, to be angry without being overtly aggressive. The latter is usually the norm in many cultures around the globe. Psychological studies have also shown that it is possible to isolate the constructs of anger and aggression. However, when measuring anger at the trait level (how prone an individual is to episodic anger), trait anger and aggression are highly correlated. Therefore, it can be assumed that the two are separable if anger is being measured as a state rather than as a trait (Potegal & Stemmler, 2010).

As discussed before, aggression is often the consequence of affective anger. A popular psychological theory that was introduced during the mid-1950's was that of catharsis. Modern versions of catharsis theory deal with the 'hydraulic model' of anger.

This model viewed anger as something that could be perpetually built up, until eventually the pressure became so great, the individual 'exploded' in an emotional outburst (Bushman, 2002).

The core idea behind catharsis therefore, "is that it is better to let the anger out here and there in little bits as opposed to keeping it inside as it builds up to the point at which a more dangerous explosion results" (Bushman, 2002, pp. 725). When first introduced, and indeed, even now, catharsis was touted in the media and in conventional wisdom as an effective outlet for aggression. However, when actually tested in psychological experiments, the results have consistently shown the central theory behind catharsis to be false (Bushman, Baumeister & Stack, 1999). Prior studies indicate that rather than alleviating the symptoms of aggression, a cathartic release can serve to reinforce it even more (Bresin & Gordon, 2013; Lohr, *et al.*, 2007). This is similar to B.F. Skinner's Operant Conditioning theory. Good behaviors will be rewarded and, therefore, are more likely to be repeated, whereas negative behavior will be punished and less likely to be repeated. In this case, the cathartic release serves as a positive reinforcement (it feels good) and, therefore, that behavior is more likely to be repeated again.

Therefore, rather than serving as a potential way to reduce anger, a cathartic release can serve to reinforce it even more. What is even more interesting is that the mere belief in catharsis may draw certain individuals to more violent pastimes such as playing violent video games. A study conducted by Bushman & Whitaker (2010) suggests that angry individuals who believe in catharsis are actually more likely to seek out violent forms of entertainment (such as video games). Their study does not prove that violent video games cause violent actions, but merely that angry people might seek them out as a way to relieve anger.

In fact, other research has shown that not only does venting anger fail to reduce hostilities, but engaging in acts of retaliation also fails to reduce anger. In a study conducted by Atkinson and Polivy (1976), participants were kept waiting for an arbitrary amount of time in a waiting room. After the wait was over, the participants were either verbally berated by the experimenter (thus provoking anger) or apologized to. After the manipulation, participants were given the chance to retaliate by negatively evaluating the experimenter. The results showed that engaging in acts of retaliatory behavior failed to reduce anger, for both male and female participants. The results of this study further put a dent in catharsis theory.

It has been shown that anger is one of the most common emotions in response to conflict. However, past research has shown inconsistent results in determining whether or not it is beneficial to express anger, and for that matter, when is the appropriate time to do so. The popular view has been that displays of anger during a conflict may serve to influence the behavior of the other party, which may in turn affect whether or not the conflict escalates or is resolved (Van Kleef & Cote, 2007).

What is clear, however, is that negotiation processes often depend on a variety of different aspects, and just because negotiations do occur, it does not necessarily mean that they are free of bias. Van Kleef & Cote (2007), has shown that displaying anger and the potential benefits and/or consequences depend upon where an individual is on the “totem pole”. Supervisors may get more concessions from the negotiation table from subordinates and conversely, subordinates may get very little out of supervisors.

When linking these methods and outcomes of negotiation to the construct of Organizational Justice discussed previously, it can easily be inferred that merely employing a method of negotiation is not likely to result in high levels of Organizational Justice. At the risk of reiterating an earlier point, when employees feel there is a sense of

injustice within the organization, they are far more likely to engage in acts of retaliatory behavior.

This form of retaliation, retaliating against the transgressors or against a form of injustice, is a consequent to what some researchers have termed “righteous anger”, “an emotional response to prevent or correct injustice (Tripp & Bies, 2007, pp. 413)”. Prior research has already shown that framing a retaliatory act as “retaliation”, seems to justify the act in the mind of the transgressor. After all, common sense dictates that ‘retaliation’ mainly occurs if an individual has been slighted by an outside party. The atomic bombings of Nagasaki and Hiroshima were seen as *retaliation* in response to Pearl Harbor. The War on Terror is portrayed as *retaliation* in response to the September 11<sup>th</sup> attacks. Therefore, to a third party and indeed to oneself, ‘retaliation’ is seen as more justifiable. The act is still the same, but it depends on how you frame it.

Similarly, researchers have found a growing trend in organizations where the classical view of ‘revenge’ is slowly departing from that held by conventional wisdom. This “revenge as justice” as it’s called, is a perception that one has been the victim of undeserved harm and injustice. Already, the motivation for revenge has shifted. No longer is revenge portrayed as an evil or unjustifiable act, but rather as a person merely lashing out at a cruel and unfair system.

In fact, in a series of studies Tripp and Bies (1997) found that revenge always occurs in response to some perceived injustice. Therefore, revenge isn’t random, but rather it’s a directed and deliberate course of action in response to some perceived slight. In their research on revenge in the workplace, Tripp and Bies (1997) found that anger plays a critical link between perceived injustice and revenge. This relationship is so strong that Tripp and Bies (1997) included anger as a mediating factor in their research model.

By now, there might be some sort of confusion as to what exactly constitutes retaliation and anger. Barash & Lipton (2011) tried to clear this up by referring to the “Three Rs”: Retaliation, Revenge and Redirected Aggression (a critical component to this paper). As defined by Barash & Lipton (2011), retaliation is prompt and straightforward pain inflicted upon the perpetrator. There is no down time, planning or preparation like there might be in revenge. Retaliation is in essence Newton’s Third Law of Motion: *To every action, there is an equal and opposite reaction*. In contrast, revenge is disproportional to the perceived offense and often, there is a time lapse. Revenge is not “an eye for an eye” but rather, “a hand for an eye”.

Where things really get interesting is when it comes to Redirected Aggression, a term that ties in nicely with everything discussed thus far in regards to negotiation and low power status individuals. Redirected Aggression is payback in response to some perceived injustice but directed towards another individual. To put it eloquently, “Tom goes after Dick, who responds by going after *Harry*, who had nothing to do with the initial problem at all (Barash & Lipton, 2011, pp. 4)”. While this may seem strange, thinking through the logical reasons of why this might occur may shed some light. Perhaps lower status individuals, who cannot retaliate directly against the perpetrator (again, due to fear of punishment or lack of resources), seeks to vent his anger onto someone that cannot do him harm in return. Especially if the individual feels that venting anger (i.e. catharsis) will help him feel better in the end. Of course, this perception is merely just a fallacy; as catharsis doesn’t relieve angry feelings, but merely reinforces them even more.

We have already seen the link that perceptions of injustice may have in fueling anger, and the link that anger has to aggression and retaliatory behavior (again, measured here in the form of I.S.P violations). The focus now must shift to ways of reducing anger. If anger can be stopped in its developmental stages or perhaps lessened

to a certain degree, then it might be possible to stop or at least reduce the destructive damage caused by that individual. Catharsis has already proven to be completely ineffective, so perhaps employing a sense of Organizational Justice (a proven construct) and anger control may help to relieve affective feelings of anger.

Prior research has begun to postulate at the possible mediating link anger may play between interactional injustice and counterproductive work behaviors (CWBs). CWBs are employee behaviors that are detrimental to the organization. Interactional justice has been particularly singled out because research has shown that interactional justice (or injustice) is much more prevalent in an employee's daily work life. Therefore, employees evaluate the perceptions of justice based primarily on interactional justice rather than distributive or procedural. In his study, Bies (2005) has shown that "among the three types of Organizational Justice, low perceived interactional justice has been identified as the strongest predictor of violent behaviors in the workplace (Le Roy, Bastounis & Minibas-Poussard, 2012, pp. 1343)". In fact, in a majority of studies conducted that has investigated the link between anger and subsequent CWB, procedural and interactional justice have been the two most investigated factors (Barclay, Skarlicki and Pugh, 2005; Aquino, Tripp & Bies, 2006; Dietz, *et al.*, 2003).

The link between interactional justice and CWB is strong (Skarlicki & Folger, 1997), because the source of the injustice is relatively easy to identify and interactional justice facilitates external blame attribution (Bies, 2005). To lend further credence to these theories, Le Roy, Bastounis and Minibas-Poussard (2012) sought to investigate the link between interactional justice, passive/active CWB's and the mediating link anger or fear may play between these two constructs. To quickly clarify the distinction between passive and active CWBs: passive CWBs are any behaviors that try to avoid negative stimuli or aversive situations (e.g., absenteeism, taking repeated breaks); whereas active

CWBs are ones that actively try to harm the individual or organization (i.e., theft, sabotage, violence).

Using a multinational sample of employees in a large insurance organization, Le Roy, Bastounis and Minibas-Poussard (2012) found that interactional injustice is indeed highly correlated with CWB, and anger does play a mediating role between interactional injustice and active CWBs while fear plays a mediating role between interactional injustice and passive CWBs. These findings lend further credence to the notion that anger encourages active behaviors to deal with the source of aversive stimuli while fear encourages avoidance related behaviors.

In a separate study, Barclay, Skarlicki and Pugh (2005) investigated whether procedural justice, interactional justice and outcome favorability can significantly predict 'outward-focused' emotions such as anger. They found that when procedural justice and interactional justice were low, anger is much more likely to surface, regardless of whether the ultimate outcome was favorable or not. This seems to suggest that having low amounts of both types of justices can elicit feelings of anger. What is even more interesting, is that when perceived procedural and interactional justice were high, 'inward focused' emotions such as shame and guilt were elicited, regardless of outcome favorability. Perhaps this is because when justice perceptions are high, employees are more likely to attribute perceptions of blame towards themselves; i.e., *if the procedures are correct and the information was communicated in a respectable and empathetic manner, then perhaps the blame lies on me, rather than on an outside party.*

An additional piece of information which is important to take into account, is even when outcome favorability was high, but perceptions of justice were still low, feelings of anger were still present. From a practical standpoint, giving the employee a favorable outcome (i.e., a fair severance package, raise, etc.), may not preclude, feelings of anger

from surfacing if perceptions of justice are low (Barclay, Skarlicki and Pugh, 2005).

Therefore, it can be deduced that justice is the key component to potentially reducing anger and any subsequent CWBs that occur, not monetary rewards or compensation.

Another interesting point to note is that, unlike the previously mentioned study, the present study combines perceptions of interactional justice in addition to procedural justice. Even though prior research has shown that interactional justice is a facet many employees primarily deal with in their daily work lives, research has also shown that procedural and interactional justice “serve as carriers of attribution information”. That is, when individuals experience unfavorable distributive outcomes, they can draw upon either procedural or interactional justice as a source of information for determining the other party’s responsibility for the outcome (Barclay, Skarlicki, & Pugh, 2005, pp. 638)”. In essence, both types of justices work in tandem with each other. Cropanzano & Ambrose (2001) also lend further support to this notion by stating that procedural and interactional justice can be used in secondary appraisals. In other words they can be used to assess why an unfavorable outcome occurred.

Recent research has also begun to investigate the possible role that an individual’s ability to control anger may play in reducing the likelihood of retaliation.

The research presented thus far shows credible evidence that increased levels of anger result in a higher potential for an employee to engage in retaliatory acts. However, what if anger could be disturbed? Or possibly reduced? In a study conducted on 125 manufacturing employees, Restubog *et al.* (2010) found that when individuals had a high level of self-control (the ability to overcome one’s impulses), then negative emotions were significantly reduced. What is even more surprising is that these emotions were reduced even in the presence of high amounts of trait anger, or the likelihood an individual will

respond aggressively to situational stressors. People who are high in trait anger tend to respond more aggressively than people who are low in that trait (Restubog *et al.*, 2010).

The support that self-control plays a moderating role between anger and aggressive behavior does not stop there. In a study measuring the link between anger and aggressive driving in adolescents, Ellwanger & Pratt (2012) found that increases in negative affect (anger) were significantly correlated with aggressive driving. However, if an individual possessed a high level of self-control, then aggressive driving was significantly decreased, even in the presence of a high amount of anger. Furthermore, in a review of multiple studies investigating the link between anger and aggression, Denson, DeWall and Finkel (2012) reported that individuals who possessed a high degree of self-control (either through training or consuming a sugary beverage) had a greater degree of control over aggressive behaviors compared to individuals who had low self-control or whose self-control had been reduced due to repeated conflict. Runions (2013) also posited that individuals who had a high degree of self-control may be less prone to engaging in cyber bullying.

Another study, this one investigating the impact that anger management seminars had on violent inmates in a penitentiary, revealed that aggression was reduced in inmates who had participated in that training (Holbrook, 1997). It is important to note that the inmates who were chosen had a history of violent behavior. Therefore, it could be suggested that anger management could be a trait that is learned, rather than one ingrained at birth. This is similar to a self-control study conducted by Denson, *et al.*, (2011) where individuals participated in a two week self-control training seminar. At the end of the study, participants who engaged in self-control training demonstrated a reduced tendency to engage in aggressive behaviors.

For the purposes of this study, we will be focusing on a trait called 'Anger Control', or the ability of an individual to control the expression of anger towards other people or environmental objects (Spielberger and Reheiser, 2004). Even though most of the research presented thus far deals with self-control and anger management; conceptually, these constructs are similar to Anger Control, with the exception being that Anger Control focuses solely on the ability for an individual to refrain from engaging in impulses instigated by anger, whereas self-control focuses on overriding impulses and influences in general (Restubog, *et al.*, 2010).

As one can see, the research on information security and subsequent I.S.P violations has come around full circle. What started out as a broad overall discussion about the importance of information security and how it plays a crucial role in our digital society has morphed into a discussion about the specific risks that insiders can pose to an organizations information assets, the role perceptions of injustice play in evoking feelings of anger and rage and the central part these negative emotions play in driving an individual to seek retribution.

Now that we have gained a better understanding of how all these various components work with each other, we can now move forward with developing our hypotheses and testing whether or not they hold validity outside the realm of pure academic research.

## Chapter 6

### Hypotheses Development

We propose that relationship conflict inside the workplace will result in affective feelings of anger because prior research suggests that interpersonal conflict within the organization is a common precursor to negative emotions.

Prior studies have shown that the most common causes of affective feelings of anger in the workplace have been some form of unjust treatment (Ayoko, Callan & Hartel, 2003; Jha & Jha, 2010; Einarsen, 1999). According to Fitness (2000) who measured the antecedents of workplace anger across a sample of 175 employees, while the exact causes of workplace anger varied, the common core element was some form of interactional injustice. Most frequently, the most cited causes of workplace anger from co-workers or subordinates were “unjust treatment”, “morally reprehensible behaviors” and “humiliation” (Fitness, 2000).

In a study conducted on 292 employees working in a variety of organizations, Fox, Spector and Miles (2001) found a significant link between interpersonal workplace conflict and negative feelings. In a prior study, Skarlicki and Folger (1997) found that when employees feel that they have been unjustly treated, feelings of anger may manifest themselves against the organization. Additionally, Keenan and Newton (1984) reported that workplace conflict was significantly correlated with increased levels of anger and aggression.

Prior research also shows that when interpersonal conflict is present in organizations, employees not only experience anger but somatic symptoms as well. While these effects are generally gone by the next day, they propose that should the conflict be continual, it may exacerbate an already volatile situation (Meier, *et al.*, 2013). Another study, conducted by Tepper (2000), showed that abusive supervision in the

workplace also extended to conflict behaviors in an employee's family life. Additionally, abusive supervision was linked to lower job and life satisfaction, lower affective commitment and psychological distress. Therefore, we propose:

H1: *Interpersonal conflict will be positively related to affective feelings of anger.*

The effects that anger plays in motivating individuals to engage in retaliatory behaviors against an organization or towards another person has been well studied and documented in previous research.

Based on prior research, it can be posited that anger can lead to some form of retaliatory behaviors against the organization (Skarlicki & Folger, 1997; Barclay, Skarlicki & Pugh, 2005). Perceived injustice, in combination with other factors such as probability of retaliation from the third party and opportunity to commit the crime, has been shown to predict workplace aggression (Beugre, 2005). Skarlicki and Folger (1997) have said that: “the anger and resentment associated with unfair procedures may energize individuals to engage in retaliation” (pp. 435). Studies have also suggested that depending upon the power difference between the two individuals involved, striking back at the source of injustice maybe more difficult (Miron, *et al.*, 2008). It could be argued, that since a subordinate is unlikely to retaliate directly against a supervisor (the transgressor) then perhaps he would take his anger out on the organization, in the form of an ISP violation, as it has been suggested that a critical component of anger is the victim’s ability to strike back at the source of anger (Betancourt & Blair, 1992). Therefore, it has been posited that:

H2: *Anger will be positively related to noncompliance behavior.*

The role that anger control may play in reducing anger and therefore, its subsequent effect on retaliatory behavior, has also been investigated. It has already been mentioned that individuals high in self-control had lower tendencies of displaying negative

emotions (Denson, DeWall & Finkel, 2012) and violent inmates who had received anger management training were less likely to commit violent acts (Holbrook, 1997). Additional studies conducted on undergraduate university students showed that participants who had undergone two weeks of self-control training were less likely to display anger and aggressive behaviors as well (Denson, *et al.*, 2011).

As mentioned in Chapter 5, conceptually, these traits are similar to Anger Control with the exception that Self Control focuses on inhibiting impulses in all situations, not just when anger is involved. We argue that if self-control can inhibit aggressive acts, then perhaps Anger Control can also prevent aggressive behavior by mitigating anger; a known instigator of aggression. Therefore, given the above evidence, we posit:

*H3: The positive relationship between anger and noncompliance behavior will be negatively moderated by Anger Control.*

Research conducted on Organizational Justice has shown that a high level of Organizational Justice may moderate the linkages between conflict and its subsequent ORB. For example, research showed that a high level of Organizational Justice moderated the amount of employee theft in a factory when management decided to implement a temporary pay cut (Greenberg & Scott, 1996). In another study, Tepper (2000) found that Organizational Justice moderated many of the effects of abusive supervision, such as lower job and life satisfaction. In situations regarding justice violations in teams, in which a fellow team member is treated unfairly, Organizational Justice has been shown to moderate the amount of retaliatory behavior conducted towards the perpetrator (Christian, *et al.*, 2012).

Furthermore, in a research study measuring the link between procedural justice and retaliatory behavior, Blader, Chang and Tyler (2001) found that procedural justice

has a moderating effect on retaliation. These findings were consistent across a multi-national sample consisting of employees from Taiwan and the United States.

Similarly, the relationship between anger and Organizational Justice has also been examined. Prior research indicates that a high level of perceived injustice is correlated with increased levels of anger (Barclay, Skarlicki and Pugh (2005). Skarlicki and Folger (1997) have also shown that when perceived injustice is high, employees feel angry and frustrated. Therefore, given these findings, and those discussed before in the introduction, we can argue that if high levels of injustice is related to increased proportions of anger, than perhaps a high level of justice might be related to lower levels of anger.

*H4: Organizational Justice will be negatively related to anger.*

Furthermore, if Organizational Justice has a moderating effect on retaliatory behavior, then perhaps it will also have a moderating effect on the precursor to retaliation (i.e. anger). It has already been shown that a high amount of injustice has a positive relationship with anger and acts of retaliatory behavior towards the organization; given this relationship, perhaps a high amount of justice will be an effective moderator among the precursors to deviant behavior, specifically conflict and anger.

A study by Spector and Miles (2001) found that high amounts of perceived injustice can be regarded as a job stressor, which leads to negative affective feelings (i.e. anger), which results in ORBs. A separate study, this time conducted by Moorman (1991) found that a high amount of justice is positively related to OCBs; or behaviors which are beneficial towards the organization. Essentially this is the complete opposite of what was found by Spector and Miles (2001); lending support to the notion that high amounts of justice could be negatively related to anger, and therefore, might be an effective moderator between conflict and anger. Therefore, we propose that:

*H5: The positive relationship between interpersonal conflict and anger will be negatively moderated by Organizational Justice*

For a comprehensive look at how all these hypotheses interact with each other, see Figure 6.1.

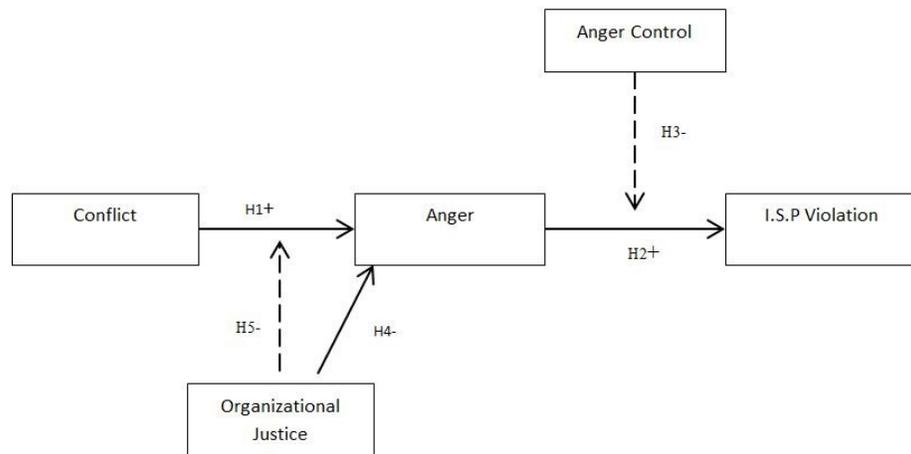


Figure 6.1 Research Model

## Chapter 7

### Methods

#### Measures

The survey measures for this study were taken from previous experiments that investigated similar constructs. The first part of the measure consisted of 14 basic demographic questions, such as age, gender, ethnicity and items related to employment, such as the participants annual salary, the type of industry he/she works for and their position within the company (e.g., non-management or management). Questions related specifically to employment (8 in total) would be skipped entirely for individuals who were unemployed at the time of the study.

The second part of the measure consisted of a brief fictional scenario of a conflict inside the workplace. Previous research suggests that scenarios are useful tools in eliciting honest employee responses (especially when the respondent might feel uncomfortable reporting unethical behavior), as the scenario asks the respondent to put themselves in other person's position; thus distancing himself from the situation (Nagin & Pogarsky, 2001; Harrington, 1996). Scenarios were a useful measurement tool in our study as we asked respondent to indicate whether they approved of a particular unethical course of action. In addition, scenarios, like surveys, are easily distributable and collecting responses is oftentimes rather easy.

For the purposes of our study, the scenario was developed in-house and underwent multiple pilot studies in order to refine the length and nature of the conflict. For the sake of realism, the conflict itself was based on actual events employees have reported inside the workplace. These firsthand accounts were taken from Ayoko, Callan and Hartel's (2003) study entitled "Workplace conflict, bullying, and counterproductive behaviors". Behaviors that were reported most frequently were included in the scenario.

The overall premise of the scenario and ensuing retaliatory behavior was taken directly from a case study that can be found in Kowalski *et al.* (2008) study of insider threats inside the IT and Telecommunication's sector. Although other case studies did have more blatant violations of I.S.Ps (such as insiders installing logic bombs), we felt a less-obvious example of an I.S.P violation would be ideal. Furthermore, the morality associated with this particular I.S.P violation was found to be questionable by focus groups. To quote one focus group member, "while I knew what he did was wrong, at the same time, I couldn't help but feel he was justified under the circumstances". We felt that this would add an interesting dilemma to the respondent.

Three aspects of the scenario were manipulated: (1) the intensity of conflict (high or low) (2) amount of Organizational Justice and (3) whether the instigator of the conflict was either a fellow coworker or a supervisor. This was done because very few studies have actually focused on the importance of the supervisor-subordinate dynamic, even though its importance has been highlighted in both the job stress and leadership literatures (Xin & Pelled, 2003; Tepper, *et al.*, 2006).

Following this, respondents were asked to complete a series of 12 question sets pertaining directly to the survey. All respondents were presented the same questions in exactly the same order. The scenario was the only item that was randomly changed from participant to participant. The questions measured such constructs as perceived procedural and interactional justice, intention to commit an ISP violation and perceived amount of conflict within the workplace. Subsequently, questions pertaining to anger and perceived punishment expectancy were measured. All the items included in this survey were borrowed from other previously conducted studies. Slight modifications were made to the wordings in order for them to correlate better with the scenario. Whenever possible, the scales used in the original study were included. For the sake of consistency,

all items were measured on a 5-point Likert scale. Care was taken to only include items that were published in reputable journals within the Information System's field and from authors who are known SMEs in the subject matter. Refer to Table 7.1 for a complete listing of the constructs each question measures and the original sources the items were drawn from.

The 'Insider Threat Survey' can be found in its entirety in Appendix A.

Table 7.1 Survey Measures

Q	Question	Construct	Source
	Scenario		Ayoko, Callan and Hartel (2003) Kowalski <i>et al.</i> (2008)
PJ_1	Has Mike been able to express his views and feelings during the conflict resolution?	Procedural Justice	Colquitt (2001)
PJ_2	Has Mike been able to influence the type of outcome arrived at by the conflict resolution?		
PJ_3	Has the conflict resolution procedure been free of bias?		
PJ_4	Has the conflict resolution procedures been based on accurate information?		
IJ_1	Has the authority figure treated Mike in a polite manner?	Interactional Justice	Colquitt (2001)
IJ_2	Has the authority figure treated Mike with dignity?		
IJ_3	Has the authority figure treated Mike with respect?		
IJ_4	Has the authority figure refrained from improper remarks or comments?		
B_1	If you were Mike, what is the likelihood that you would have copied the proprietary information?	Intention to commit I.S.P violation	D'Arcy, Hovav & Galletta (2009)
B_1	Mike's copying of the proprietary information was:	Ethical Behavior	Leonard & Cronan (2001)
IC_1	How much friction do you feel there is between Mike and George?	Interpersonal Conflict	Jehn (1995)
IC_2	How much are personality conflicts evident between Mike and George		
IC_3	How much tension is there between Mike and George?		
IC_4	How much emotional conflict is there between Mike and George?		
A_1	Overall, I think Mike would feel angry	State Anger	STAXI
A_2	Overall, I think Mike would feel irritated		
A_3	Overall, I think Mike would feel burned up		
A_4	Overall, I think Mike would feel furious		
A_5	Overall, I think Mike would feel like swearing		
A_6	Overall, I think Mike would feel like yelling at somebody		
AC_1	I control my temper	Anger Control	STAXI
AC_2	I control my angry feelings		
AC_3	I can stop myself from losing my temper		
AC_4	I control my behavior		

## Procedure

The study launched after gaining approval from the IRB. Any modifications made to the survey (however minor) were promptly reported to gain approval. The 'Insider Threat Survey' and the subsequent form where participants input their name email and course number was uploaded through Qualtrics. In order to prevent Ballot Box Stuffing, participants were not allowed to take the survey twice (even if they were taking it as extra credit for different courses).

The study progressed over a timespan of two weeks, each week a different subject pool. The first week consisted of the survey only being open to students enrolled in 'Principles of Marketing', a required course for all business majors. Students enrolled in this class were required to participate in ongoing experiments in order to gain research credit for the course. This program was known within the Marketing department as the "Research Experience Program" (REP). A total of N=125 participants was allocated and 92% of students responded.

The second week of the study consisted of the survey being available to those students who wished to take it for extra credit as part of their course. A total of three different professors participated, resulting in a subject pool spanning seven different courses. Six of the courses were undergraduate or graduate Information System's courses and one was an advanced business statistics course primarily taken by MBA students. Students who had taken the survey before (for MARK 3321 or for another class) were unable to participate; again, this was done to prevent Ballot Box Stuffing. Professors were notified which students participated for extra credit after the close of the survey.

Once all the responses were collected, each survey was individually analyzed to determine if it was usable. Survey's that were clearly unusable (such as the same

response being selected for every question) were deleted from the dataset. Following this, the dataset was downloaded from Qualtrics and data preparation was conducted. During data preparation, certain columns (such as date/time of completion, response time, IP address and other such values) were removed from the data set. Textual values, such as 'Student Major' were coded. For example: '0' represented a non-technical major and '1' represented a technical major. '-99' was used to fill in any fields that contained missing values and was also selected as a missing value indicator in the SmartPLS software system; a free statistical software package that was used to conduct data analysis.

#### Participants

The participants in this study were undergraduate or graduate students enrolled in the College of Business at the University of Texas at Arlington. Individuals of all ages, genders, ethnicity and religious affiliation were invited to partake in the survey. The ideal candidate would be currently employed in an IT role, but this was not necessary to participate. To act as an incentive, those who completed the survey were either given research credit as part of 'Principles of Marketing' or extra credit for their respective course. Participants were told that they could withdraw from the experiment at any time without any adverse effects, with the exception that they would not be eligible to receive extra credit. Participants were informed that their identity would be kept completely confidential and their responses would not be seen by anyone outside of the research group.

A total of 277 responses were gathered, out of which 45 were deemed to be unusable, either because of: (1) missing data, (2) fraudulent data (i.e. the same response being selected for a vast majority of the questions, or (3) the completion time was unrealistic (<2 minutes); resulting in a successful response rate of 84%. The average

time to complete the survey was 32 minutes, however with outliers on both ends of the scale removed (some participants took over 24 hours to complete the survey); the average was cut down to 14 minutes.

A basic demographic analysis showed that 54% of respondents were male and 46% were female. The average age for all participants was 26 and a vast majority (70%) was single and never married. Roughly 61% of respondents were currently employed at the time of the survey and 71% were currently pursuing their Bachelor's degree. Further analysis showed that only 40% were majoring in a technical field (such as Information Systems or Computer Science); while the remaining 60% were largely business related majors (i.e. Accounting, Management, Business Administration, etc.). For more information, refer to Table 7.2.

Table 7.2 Demographics

<b>Basic Demographic Information For All Respondents</b>	
<b>Category</b>	<b>Frequency</b>
Gender	Male: 54%
	Female: 46%
Avg. Age	26
Marital Status	Single: 71%
	Married: 24%
	Separated: 0.4%
	Divorced: 4%
	Widowed: 0%
Education	Assoc.: 1.7%
	Bach.: 71%
	Master's: 25%
	PhD.: 1.7%
Currently Employed	Yes: 62%
	No: 38%
Employment Status	Fulltime: 45%
	Part-time: 52%
	Contractor: 3.4%
Salary	<\$25K: 57%
	\$25-50K: 24%
	\$51-75K: 13%
	\$76-100K: 4%

Table 7.2 *Continued*

	\$>100K: 2%
Managerial Role	Non-Management: 76%
	Lower: 3%
	Middle: 8%
	Upper: 13%
Percentages are rough estimates. They may not add up to 100%	

A more selective demographic analysis was also done based on the psychological profile of insiders previously mentioned in Chapter 3. Of those respondents who were majoring in a technical field, 74% were either single (without ever having been married) or divorced. This is not to say that all technical majors are inclined towards a life of limited social interaction, but rather to support an analysis previously mentioned.

We believe this sample is appropriate for our measures because a vast majority of individuals were employed at the time of the study. Furthermore, since we are using a scenario method, individuals did not have to be employed in order to understand the situation being explained. For those questions that did not deal directly with the scenario, such as personal experiences of Interpersonal Conflict and Anger Control, the respondent was asked to answer these questions based on experiences in school or their own personal life. Conflict and Anger Control are items that are not relegated only to the workplace, they can be experienced (or practiced) at school or in one's personal life as well.

Furthermore, prior research such as Johnston and Warkentin (2010) study on fear appeals and information security behaviors (mentioned in Chapter 2) were

conducted on student samples. Additionally, as mentioned before, a majority of the students were currently employed and it can be argued that students are similar to entry-level employees; subject to the same motivations and desires that dictate human behavior.

## Chapter 8

### Results

For the purposes of this experiment, we used a form of Structural Equation Modeling (SEM) termed partial least square's (PLS) for measurement validation and testing the structural model. PLS employs a component-based approach for estimation, while placing minimal restrictions on sample size and residual distributions. By being able to avoid inadmissible solutions and factor indeterminacy, PLS allows us to test for complex relationships; therefore making it an ideal choice in the presence of multiple variables, relationships and moderating and mediating effects.

#### Descriptive Statistics

Before delving into the results of our experiment, it would be prudent to discuss the convergent and discriminant validity of our measure. The main reasoning behind is if we're not confident in the quality of our measure than we cannot be confident in the results of our experiment.

Perhaps it would be wise to give a bit of background information on what exactly these two terms mean and what it is that they measure. Convergent and Discriminant validity are two sub constructs of Construct validity. Since they interlock with one another, it would be foolish to measure only one.

Convergent validity measures the degree to which items belonging to one construct correlate with one another. For example, if you have five items purporting to measure 'self-esteem', than those five items should have high correlation coefficients. Similarly, discriminant validity measures the degree to which items belonging to different constructs are dissimilar to one another. The reasoning behind this is that the previously mentioned five items measuring 'self-esteem' shouldn't correlate with another construct,

such as 'personality'. Items that have good convergent and discriminant validity are also said to have high construct validity.

Four tests were used to ascertain convergent and discriminant validity. First, the square root of the average variance extracted (AVE) of all constructs is much larger than all other cross-correlations (see Table 8.1) (Pavlou, Liang, Xue, 2007). Second, a principal components factor analysis was performed, where all items loaded on their respective constructs, which were much higher than all cross loadings (Table 8.2) (Pavlou, Liang, Xue, 2007). Third, all AVEs are well above .50, or in the case of Organizational Justice, hovering right below the .50 mark. This suggests that the principal constructs capture much higher construct-related variance than error variance (see Table 8.1) (Pavlou, Liang, Xue, 2007). Fourth, all factor loadings were greater than or equal to .70 (see Table 8.2) (D'Arcy, Hovav & Galletta, 2009). Jointly, these four tests suggest adequate convergent and discriminant validity.

Reliability, or a measure of internal consistency, was assessed by using composite reliability that was included in the PLS output. As shown in Table 8.1, the composite reliabilities of all constructs are well above the recommended .70 threshold (D'Arcy, Hovav, and Galletta, 2009). This suggests that this instrument will produce stable and consistent results.

Table 8.1 Convergent and Discriminant Validity

	Mean(SD)	AVE	CR	CA	1	2	3	4	5	7
Anger	3.840(0.745)	.6228	.9080	.8802	<b>.789176</b>	-	-	-	-	-
AC	4.158(0.642)	.6673	.8881	.8379	0.0492	<b>.816884</b>	-	-	-	-
Behavior	1.612(0.852)	.8635	.9268	.8420	-0.0361	-0.1613	<b>.929247</b>	-	-	-
Conflict	4.280(0.682)	.5954	.8545	.7733	0.4552	0.2242	-0.2033	<b>.771622</b>	-	-
IJ	2.775(1.459)	.7821	.9341	.9026	-0.156	0.1533	-0.0789	0.0182	<b>.884364</b>	-
PJ	2.805(1.315)	.6251	.8695	.8008	-0.0899	0.0809	-0.0467	-0.1101	0.3861	<b>.790632</b>

**Note:** AC = Anger Control, IJ = Interactional Justice, PJ = Procedural Justice. Items in **bold** are SQRT AVE.

Table 8.2 Outer Model Loadings and Cross Loadings

	PJ	IJ	Behavior	Conflict	Anger	Anger Control
PJ_1	<b>.7669</b>	0.2355	0.0045	-0.0767	-0.0712	0.1345
PJ_2	<b>.7640</b>	0.2305	0.0177	-0.0711	-0.1065	0.0334
PJ_3	<b>.8247</b>	0.3997	-0.069	-0.1244	-0.0838	0.0841
PJ_4	<b>.8052</b>	0.3305	-0.0856	-0.0701	-0.0272	0.0078
IJ_1	0.3454	<b>.9228</b>	-0.0391	0.0121	-0.1271	0.1388
IJ_2	0.3510	<b>.9434</b>	-0.0267	-0.0393	-0.1727	0.1090
IJ_3	0.3733	<b>.9226</b>	-0.0742	0.0032	-0.1919	0.1409
IJ_4	0.2913	<b>.7059</b>	-0.1614	0.1112	-0.0391	0.1631
B_1	-0.0817	-0.1143	<b>.9264</b>	-0.1562	-0.0197	-0.1368
B_2	-0.0066	-0.0339	<b>.9321</b>	-0.2205	-0.0469	-0.1624
IC_1	-0.0372	0.0953	-0.2177	<b>.7809</b>	0.3567	0.1398
IC_2	-0.0656	-0.0357	-0.1111	<b>.7216</b>	0.3382	0.1987
IC_3	-0.1524	-0.0089	-0.1689	<b>.8275</b>	0.4021	0.1432
IC_4	-0.0743	0.0042	-0.1216	<b>.7525</b>	0.2953	0.2267
A_1	-0.0401	-0.1818	-0.0544	0.3788	<b>.8513</b>	0.0439
A_2	-0.0483	-0.0773	-0.0982	0.4291	<b>.7471</b>	0.1405
A_3	-0.069	-0.1206	0.0242	0.3665	<b>.8059</b>	0.1037
A_4	-0.1308	-0.166	-0.0336	0.3689	<b>.8391</b>	-0.0328

Table 8.2 *Continued*

A_5	-0.0266	-0.0398	-.0066	0.2977	<b>.7439</b>	-0.0072
A_6	-0.119	-0.135	0.0422	0.2673	<b>.7396</b>	-0.0659
AC_1	0.0537	0.1284	-.1821	0.2503	0.0731	<b>.9166</b>
AC_2	0.0588	0.1137	-.1329	0.1868	0.0341	<b>.8641</b>
AC_3	0.0597	0.0995	-.0963	0.1285	0.0432	<b>.6956</b>
AC_4	0.1349	0.1985	-.0676	0.1055	-0.0338	<b>.7736</b>

### The Structural Model

SmartPLS was used to test the structural model and determine the path coefficients. Bootstrapping, or repeated sampling with replacement from the same sample, was also used as a secondary test. Control variables were also included to prevent any extraneous effects. Age, Gender, Punishment Expectancy and Punishment Severity were all shown to be significant control variables.

First, as hypothesized by H1, a positive relationship was found between interpersonal conflict and affective feelings of anger ( $\beta=0.383$ ,  $p<.001$ ). Second, as was hypothesized by H2, anger was shown to be instrumental in instigating acts of retaliatory behavior against the organization ( $\beta= 0.128$ ,  $p<.01$ ). However, this relationship was lessened somewhat in the presence of high anger control, or the ability for an individual to contain feelings of anger. Anger control was shown to be an effective moderator between anger and retaliatory behavior, thus supporting H3 ( $\beta= -0.137$ ,  $p<.05$ ).

Third, Organizational Justice was found to have a negative relationship with affective feelings of anger, thereby supporting H4 ( $\beta= -0.155$ ,  $p<.01$ ). Finally, the relationship between interpersonal conflict and anger was negatively moderated by Organizational Justice, providing support for H5 ( $\beta= -0.245$ ,  $p<.001$ ). This supports the notion that having high levels of Organizational Justice present within an organization can lessen the impact conflict has in developing anger.

The results for this study can be seen in Figure 8.1.

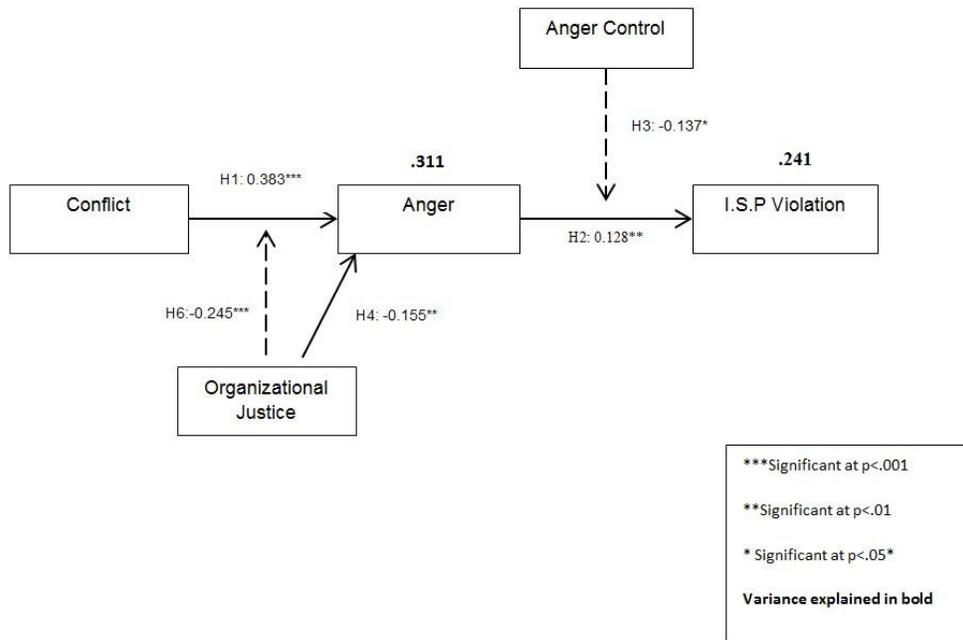


Figure 8.1 Results Model

## Chapter 9

### Discussion

#### Key Findings and Contributions

This study investigated the link between interpersonal conflict and insiders violating I.S.Ps. The results have shown that conflict inside the workplace leads to an increase in affective feelings of anger, which in turn, leads to a higher probability of insiders committing attacks against an organization's information security. The presence of Organizational Justice, was shown to have a negative relationship with anger and was also shown to negatively moderate the link between interpersonal conflict and affective feelings of anger. Furthermore, 'anger control', or the degree to which an individual is able to keep angry feelings from influencing his behavior, was also shown to be an effective moderator between anger and retaliatory behavior. This study adds to the extant literature conducted on Insider Threats and also emphasizes the role anger plays in this paradigm. For an overall synopsis of the results, refer to Table 9.1.

Table 9.1 Hypothesis Results

Hypothesis Results		
H#	Hypothesis	Result
H1	<i>Interpersonal conflict will be positively related to affective feelings of anger.</i>	Supported
H2	<i>Anger will be positively related to noncompliance behavior</i>	Supported
H3	<i>The positive relationship between anger and retaliatory behavior will be negatively moderated by Anger Control.</i>	Supported
H4	<i>Organizational Justice will be negatively related to anger</i>	Supported
H5	<i>The positive relationship between interpersonal conflict and anger will be negatively moderated by Organizational Justice</i>	Supported

#### Theoretical Contributions

Even though it has been shown that the issue of the insider is the one of the greatest threats facing an organization; the extant literature on the link between interpersonal conflict and retaliatory behavior against an organization's information networks has been lacking. This study helps to provide further literature on the issue of the insider, their motivations and potential ways to combat future insider threats before they become an issue. As mentioned earlier in this paper, the focus now is on preventing insider attacks rather than detecting them "posthumously" one might say.

The results of this study shed further light on the link between interpersonal conflict and retaliatory behaviors. The relationship between these two constructs is one that hasn't been studied in great detail, although the research that does exist conforms to the results that were found in this study.

In addition to providing additional literature and support, this study also investigated the possible intermediary link anger might play between conflict and

retaliatory behavior. In addition, the moderating role of Anger Control was also examined in the link between anger and retaliatory behavior. Having high amounts of Anger Control was found to significantly reduce the chances of retaliatory behavior against an organization. These two relationships have hardly been researched, especially in the context of information security. Although literature does exist on the role anger plays in facilitating aggression, there has been a dearth of studies investigating the link between conflict-anger-retaliatory behavior. This study not only confirms the results found in previous experiments but also bridges the gap between the psychological and information system's fields by introducing the constructs of anger and Anger Control as well.

Furthermore, the results of this study add more confirmation to the beneficial aspects of having high amounts of Organizational Justice. It was shown that in addition to having a negative linear relationship with anger, high amounts of justice acted as an effective moderator between conflict and anger as well. Therefore, two moderators were found to be effective in this study: Organizational Justice and Anger Control.

Finally, our study takes an integrated approach to the entire conflict-anger-retaliation dyad and affirms previous findings on each of these constructs. Not only that, but this thesis also integrates several constructs into a comprehensive research framework; thereby extending the existing corpus of knowledge and introducing new knowledge into the field as well. This particular dynamic (concerning how conflict leads to anger and therefore to subsequent ISP violations) has never been examined before in the IS literature.

#### Practical Implications

Organizations may wish to use this study to ensure that procedures are in place to resolve employee disputes inside the workplace, thus ensuring a high level of

Procedural Justice. However, organizations should also note that merely having high levels of Procedural Justice may not be enough to counteract the angry feelings brought on by conflict, and it is imperative that high amounts of Interactional Justice also be present. Overall, the golden rule that our mothers taught us still holds to be true: “treats others the way you want to be treated”.

In addition to reducing anger itself, Organizational Justice was a significant moderator between conflict and affective feelings of anger. When justice is salient in organizations, then feelings of anger are reduced, even in the presence of high conflict. As was pointed out before, organizations should invest in developing procedures to resolve employee conflict; but it is vital that these procedures be carried out in fair and unbiased manner. If procedures are present, but are seen to be unfair and corrupt, then anger will not be reduced, and may even be intensified.

Companies may also wish to be more selective in their hiring process by hiring candidates whose views and personality mesh with that of the organization. Granted, this would be difficult to do without the use of personality measures and even those are not always 100% accurate. The main idea is to hire employees who would get along with already existing employees, thus reducing the potential for interactional conflict. It is important to remember that multiple types of conflict exist and certain types of conflict may in fact be beneficial towards an organization (i.e. Task conflict), so eliminating conflict altogether within an organization is both unrealistic and potentially unhealthy. However, as prior research shows, and the results of this study indicate, interactional conflict should be avoided; as this type of conflict is always detrimental.

In addition to ensuring high levels of Organizational Justice are present, companies may also wish to revise existing security policies. The point of this is to make sure that no single employee has the colloquial “keys to the kingdom”. Of course, this

relates to high ranking employees with high levels of access to organizational data, such as System Administrators.

Access to sensitive data should also be strictly controlled and monitored.

Unusually high attempts to access classified data may represent more malicious interests. Common sense also dictates that an employee's access to data should also be revoked upon his termination. Terminated employees who retain unfettered access to their company account may use this ability for nefarious purposes.

Related to a point brought on earlier, companies may also choose to employ people who have been shown to exhibit a high degree of "anger control". As can be seen from the results of this study, Anger Control serves as an effective moderator between anger and retaliatory behavior. Ensuring that employees possess the trait of Anger Control may act as one additional check against insider threats, even in the presence of low Organizational Justice.

Alternatively, organizations may wish to hold training seminars that teach employees how to effectively control their feelings of anger. It is important to remember that Anger Control was a significant moderator between anger and retaliatory behavior. Therefore, it is paramount that employers realize that controlling anger is a far better alternative rather than letting anger manifest itself in detrimental ways.

Taken together, these results seem to suggest two critical aspects: Interpersonal conflict should be reduced as much as possible within the workplace and a high degree of Organizational Justice should also be present. Organizational Justice not only has a negative relationship with anger, but also acts as a moderator between conflict and anger as well; a dual benefit if you will. Therefore, organizations should strive to instill these values in employees as much as possible.

### Limitations and Future Directions

A key limitation of this study was both the sample and sample size. Student samples tend to be unreliable, and are usually not the preferred sample of choice. However, the use of student samples is quite common and prior studies have used student subjects as well (Leonard and Cronan, 2001; Johnston and Warkentin, 2010; Paradice, 1990). Overall, due to the nature of this study, the use of student subjects, particularly those with industry experience, does not detract from or invalidate the findings in a major way.

Future studies may wish to conduct this survey on current IT employees. Since the primary purpose of this study was to examine whether IT employees in particular may be more prone to becoming a cyber-security risk, future studies may wish to rerun this study on IT employees while using non-IT employees as a control group, and then compare the two differences. Additionally, the sample size, although adequate for the purposes of this study, may be increased in future iterations of this experiment. A higher sample size gives us a better approximation of the population characteristics.

Future studies may also wish to refine the scenarios and ensure that the respondent is more invested in the hypothetical story. The primary purpose behind scenarios is to make the participant feel that they are the character, and subsequently, to gauge responses based on what the participant believes the character would do in that situation. Therefore, future experimenters might wish to ensure the respondent is fully drawn into the scenario understands the conflict and realizes the multiple variables that are in play.

Additionally, future studies may wish to examine whether a conflict with a supervisor would result in a greater chance of retaliatory behavior against the organization. Although testing for this relationship was carried out in this study, post hoc

analysis revealed no significant relationships. Again, perhaps this is due to the size and depth of the scenario itself. If the respondent was more invested in the scenario, then perhaps a greater amount of anger might have been felt.

Additional studies may also wish to examine the importance of interactional justice in this paradigm. In their summary of research examining the effects of interactional injustice, Le Roy, Bastounis and Minibas-Poussard (2012) have shown that a high level of interactional injustice is associated with aggression against coworkers, supervisors and even acts of retaliatory behavior against the organization (in the form of sabotage). This is due to the fact that employees experience interactional justice far greater in their daily work environment than the other two forms of justice (distributive and procedural). In fact, the largest cause of workplace violence has been a large amount of interactional injustice (Bies 2005).

Furthermore, as Skarlicki and Folger (1997) showed in their study, having a high amount of interactional justice is vital if there is low perceived procedural justice. This is in line with prior research summarized by Skarlicki and Folger (1997) that posits interactional and procedural justice can sometimes act as substitutes for each other; since both justices give an individual more voice in the proceedings. Their study also hinted at the possibility that perhaps conflict type determines which facet of Organizational Justice would be more effective in reducing the conflict. It could be argued that if there is a high amount of interpersonal conflict than perhaps interactional justice would be more effective in mitigating anger than procedural justice would be. Future studies may want to look into this relationship further and see whether interactional justice is more effective at reducing interpersonal conflict induced anger than procedural justice is.

Additionally, future studies may also examine whether the conflict type could indicate which facet of OJ would be more effective in reducing that conflict. For example, if the conflict involves an unfair outcome, then perhaps Distributive Justice would be more effective in solving it.

Furthermore, future studies may also wish to examine the role personality might play in insider behavior. Perhaps certain personality types are more prone to engage in acts of retaliatory behavior against the organization. Additionally, further antecedents to retaliatory behavior may also wish to be examined, not just conflict itself. Culture may also wish to be examined in any future studies. Perhaps individuals from different cultures (such individualistic or collectivist) respond to conflict in different ways. Different cultures emphasize different values, and this may in turn effect how an individual responds to workplace conflict.

### Conclusion

Taken together, the results of this study indicate that relationship conflict may prove to be detrimental to an organization's cyber security. However, organizations can help mitigate this threat by ensuring high amounts of Organizational Justice are present and perhaps holding training sessions for anger management and anger control. This study shows that organizations cannot rely solely on technological measures to defeat insider threats, and fundamental changes to an organizations culture are critical in order to prevent rogue employees from committing malicious acts. The times are changing and organizations must dispose of old, antiquated methods and embrace new ones. In the end, perhaps Abraham Lincoln said it best: "The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so we must think anew, and act anew".

Appendix A  
Insider Threat Survey

Q1 Please indicate your Gender

- Male
- Female

Q2 Please type in your age

Q30 What is your marital status?

- Single, never married
- Married
- Separated
- Divorced
- Widowed

Q36 What degree are you currently pursuing?

- Associate's
- Bachelor's
- Master's
- PhD

Q37 What is your current major?

Q3 Are you currently employed?

- Yes
- No

Q4 How many years have you been at this company?

- Less than one year
- 1-5 years
- 6-10 years
- 11-15 years
- 15+ years

Q24 What is your position at this company?

Q25 Are you a full time or part time employee?

- Full-time
- Part-time
- Contractor

Q31 Are you a management or non-management employee?

- Upper Management
- Middle Management
- Lower Management
- Non-management

Q28 Before taxes, what is your annual income?

- Less than \$25,000
- \$25,000-\$50,000
- \$51,000-\$75,000
- \$76,000-\$100,000
- \$100,000+

Q26 What is the size of your department?

- 1-10 employees
- 11-20 employees
- 21-30 employees
- 31-40 employees
- 40+ employees

Q27 What is the size of your company?

- 1-250 employees
- 250-500 employees
- 500-750 employees
- 750-1,000 employees
- 1,000+ employees

Q29 What industry does your company belong too?

- Telecommunications
- Manufacturing
- Banking/Finance
- IT Consulting
- Retail
- Healthcare
- Government (City, State or Federal)
- Defense Firm (i.e. Lockheed Martin, Raytheon, etc.)
- Education
- Media
- Other

Q21 You will now be presented with a brief hypothetical scenario featuring a fictional employee working at a fictional organization. Please carefully read through the scenario and answer the questions that follow based on your understanding.

Q5 Mike Jones is an employee working at a large defense company. Mike has been working at the organization for a year and his personality frequently clashes with that of his coworker, George. George frequently ignores Mike, both socially and whenever Mike asks him for help related to his work. Because management is unaware of the conflict between Mike and George, no conflict resolution strategies have been offered. In hopes of finding a better job, Mike, over a two week time span, begins to transfer classified, proprietary information to his home computer. Mike intended to use the information as reference material in hopes of finding another job.

Q6 Mike Jones is an employee working at a large defense company. Mike has been working at the organization for a year and is a candidate for a higher paying position that has just opened

up. Mike's coworker, George, is also competing for that job. Due to this, George frequently withholds crucial information Mike needs in order to complete projects. Mike's organization employs a third party mediator to resolve employee conflict; but the mediator assigned arbitrarily took George's side and discredited Mike's side of the argument. In hopes of finding a better job, Mike, over a two week time span, begins to transfer classified, proprietary information to his home computer. Mike intended to use the information as reference material in hopes of finding another job.

Q7 Mike Jones is an employee working at a large defense company. Mike has been working at the organization for a year and is already a higher performer than his coworker, George. Due to this, George frequently spreads malicious rumors about Mike, verbally belittles him and on one occasion, physically threatened him. Mike's organization employs a third party mediator to resolve employee conflict; the mediator assigned was fair and politely listened to both sides of the argument. In hopes of finding a better job, Mike, over a two week time span, begins to transfer classified, proprietary information to his home computer. Mike intended to use the information as reference material in hopes of finding another job.

Q8 Mike Jones is an employee working at a large defense company. Mike frequently clashes with his supervisor, George, about how to go about executing a project. Due to this, George sets unrealistic time constraints about project deadlines. Because management is unaware of the conflict between Mike and George, no conflict resolution strategies have been offered. In hopes of finding a better job, Mike, over a two week time span, begins to transfer classified, proprietary information to his home computer. Mike intended to use the information as reference material in hopes of finding another job.

Q9 Mike Jones is an employee working at a large defense company. Mike's personality frequently clashes with that of his supervisor, George. George frequently belittles Mike and heavily criticizes his work. Mike's organization employs a third party mediator to resolve employee conflict; but the mediator assigned arbitrarily took George's side and discredited Mike's side of the argument. In hopes of finding a better job, Mike, over a two week time span, begins to transfer classified, proprietary information to his home computer. Mike intended to use the information as reference material in hopes of finding another job.

Q10 Mike Jones is an employee working at a large defense company. Mike has been working at the organization for a year and has acquired more knowledge than that of his supervisor, George. On occasion, Mike politely corrects George when he is wrong. Due to this, George frequently intimidates Mike and never allows him to take sick leave. Mike's organization employs a third party mediator to resolve employee conflict; the mediator assigned was fair and politely listened to both sides of the argument. In hopes of finding a better job, Mike, over a two week time span, begins to transfer classified, proprietary information to his home computer. Mike intended to use the information as reference material in hopes of finding another job.

Q11 Please answer each of the following questions on a scale of 1 through 5, with one being "To a small extent" and five being "To a large extent". If you feel that the question doesn't apply to the scenario, please select "Does Not Apply". The following items refer to the procedures used at Mike's company in order to resolve conflict in the workplace. To what extent:

1. Has Mike been able to express his views and feelings during the conflict resolution?
2. Has Mike been able to influence the type of outcome arrived at by the conflict resolution?
3. Has the conflict resolution procedure been free of bias?

4. Has the conflict resolution procedure been based on accurate information?

Q12 Please answer the following questions on a scale of 1 through 5, with one being "to a small extent" and five being "to a large extent". If you feel that the question doesn't apply to the scenario, please select "Does Not Apply". The following items refer to the authority figure in charge of settling disputes inside Mike's workplace. To what extent:

1. Has the authority figure treated Mike in a polite manner?
2. Has the authority figure treated Mike with dignity?
3. Has the authority figure treated Mike with respect?
4. Has the authority figure refrained from improper remarks or comments?

Q13 On a scale of one through five, with one being "Extremely Unlikely" and five being "Extremely Likely", please answer the following question.

1. If you were Mike, what is the likelihood that you would have copied the proprietary information?

Q14 On a scale of one through five, with one being "Totally Unacceptable" and five being "Perfectly Acceptable", please answer the following question.

1. Mike's copying of the proprietary information was:

Q16 On a scale of 1-5, with one being "Very Little" and five being "Very Much", please rate how much conflict there is in Mike's workplace.

1. How much friction do you feel there is between Mike and George?
2. How much are personality conflicts evident between Mike and George?
3. How much tension is there between Mike and George?
4. How much emotional conflict is there between Mike and George?

Q18 On a scale of 1-5, with one being "Strongly Disagree" and five being "Strongly Agree", please answer the following questions: Overall, I think Mike would feel...

1. Angry
2. Irritated
3. Burned Up
4. Furious
5. Like swearing
6. Like yelling at somebody

Q32 For the following questions, please think back on your own personal experiences and imagine what would happen if you worked at an organization similar to Mike's (i.e. a defense contractor). For clarification, a defense contractor is a company that builds weapons (fighter jets, missiles, tanks, etc.) for the government. Please answer the following questions on a scale of one through five, with 1 being "Extremely Unlikely" and 5 being "Extremely Likely".

Remember to answer the questions based on what you think would happen if you worked at an organization similar to Mike's.

1. What are the chances that you would receive sanctions if you violated the company Information Security Policy?
2. What are the chances that you would be formally sanctioned if management learned that you had violated the company Information Security Policy?
3. What are the chances that you would be formally reprimanded if management learned you had violated the company Information Security Policy?

Q35 Please answer the following questions on a scale of one through five, with one being "Strongly Disagree" and five being "Strongly Agree".

1. The organization would discipline employees who break information security rules
2. The organization would terminate employees who repeatedly break security rules
3. If I were caught violating the organization's Information Security Policy, I would be severely punished

Q34 Please answer the following questions on a scale of one through five, with one being "Strongly Disagree" and five being "Strongly Agree".

1. If I do not follow the Information Security Policy, my supervisor would indicate his/her disapproval
2. If I violate the Information Security Policy, I would be disciplined
3. If I do not follow the Information Security Policy, my supervisor would give me a reprimand
4. If I do not follow the Information Security Policy, my supervisor would show his/her displeasure

Q17 On a scale of 1-5, with one being "Never" and five being "Always", please answer the following questions. If you are currently not working, please answer the questions based on your experiences at school or volunteer work:

1. How often do you get into arguments with others at work or school?
2. How often do other people yell at you at work or school?
3. How often are people rude to you at work or school?
4. How often do other people do nasty things to you at work or school?

Q19 On a scale of 1-5, with one being "Strongly Disagree" and five being "Strongly Agree", please answer the following questions:

1. I get angry when slowed down
2. I get furious when criticized in front of others
3. I get infuriated with poor evaluations
4. I am quick tempered

Q20 On a scale of 1-5, with one being "Strongly Disagree" and five being "Strongly Agree", please answer the following questions:

1. I control my temper
2. I control my angry feelings
3. I can stop myself from losing my temper
4. I control my behavior

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### Biographical Information

Ammar Nurbhai has a Bachelor's of Science degree in Psychology and a Master's of Science degree in Information Systems from the University of Texas at Arlington. In addition to his thesis, he's worked on multiple research projects as a research assistant while pursuing his undergraduate degree. His research interests include Insider Threats, Information Security and Organizational Justice. Ammar hopes to pursue a career in Information Security and eventually earn his PhD in Information Systems.