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THESIS

**YOU CAN'T ALWAYS GET WHAT YOU WANT:
EMPLOYEE AND ORGANIZATIONAL RESPONSES
TO PERCEIVED WORKPLACE INJUSTICES AND THEIR
RELATIONSHIP TO INSIDER ATTACKS**

by

Tracey Reed

March 2019

Co-Advisors:

Shelley P. Gallup
Kathleen L. Kiernan (contractor)

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WORKPLACE INJUSTICES AND THEIR RELATIONSHIP
TO INSIDER ATTACKS**

Tracey Reed
Captain II, Fairfax County Fire and Rescue Department
BS, University of Mary Washington, 2002

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March 2019**

Approved by: Shelley P. Gallup
Co-Advisor

Kathleen L. Kiernan
Co-Advisor

Erik J. Dahl
Associate Chair for Instruction
Department of National Security Affairs

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ABSTRACT

Insider threats are a *wicked* problem. This thesis investigates three questions: how do employees respond to perceived workplace injustice, what is the relationship between employee responses to perceived workplace injustices and insider attacks, and how can organizations prevent disgruntled employees from committing attacks? These questions were answered using a thorough literature review and case studies. Employees respond in one, or a combination, of four ways: exit, loyalty, voice, and counterproductive work behaviors, as illustrated by the researcher's grievance response model. The researcher was unable to identify specific employee responses that led to attacks due to a lack of data and multiple, contradictory, and missing narratives. Organizations may be able to prevent employees from committing attacks by applying the grievance response model, ensuring grievance procedures are consistent and transparent, and offering alternative dispute resolution programs.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADR	Alternative Dispute Resolution
AL	Ambitious Leader
CERT	Computer Emergency Response Team
CWB	Counterproductive Work Behaviors
CWB-I	Counterproductive Work Behaviors–Individuals
CWB-O	Counterproductive Work Behaviors–Organization
EI	Entitled Independent
ELVC	Exit, Loyalty, Voice, and Counterproductive Work Behaviors Theory
ELVN	Exit, Loyalty, Voice, and Neglect Theory
EEO	Equal Employment Opportunity
FCFRD	Fairfax County Fire and Rescue Department
HR	Human Resources
IG	Inspector General
IP	Intellectual Property
IT	Information Technology
LMX	Leader-Member Exchange
MERIT	Management and Education of the Risk of Insider Threat
OCB	Organizational Citizenship Behaviors
ODR	Organizational Dispute Resolution
OMA	Organization-Motivated Aggression
OMV	Organization-Motivated Violence
USMC	United States Marine Corps

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EXECUTIVE SUMMARY

Insider threats are a *wicked* problem because of the definition of an insider and the varied threats such insiders pose. Insiders are people with increased access, knowledge, and trust due to their relationship with an organization. They can be current or former employees, contractors, volunteers, or another affiliate of the organization. There are three types of insider threats: violent, non-violent, and unintentional. Violent threats consist of workplace violence and insider terrorism (a specific type of workplace violence). Non-violent threats include, but are not limited to, sabotage, espionage, intellectual property (IP) theft, and fraud. Unintentional threats are insiders who, without malicious intent, fail to follow security practices due to carelessness or ignorance.

Violent and non-violent insider threats often begin with a precipitating workplace event that the employee perceives as unjust. Employee perceptions are influenced by personal, situational, and organizational factors. This thesis answers three questions:

- How do employees respond to perceived workplace injustices?
- What is the relationship between employee responses to perceived workplace injustices and insider attacks?
- How can organizations prevent disgruntled employees from committing attacks?

How do employees respond to perceived workplace injustices? Based on a thorough literature review, the author created/derived a grievance response model. The model indicates that employees respond in one (or a combination) of four ways. The employee may choose to voluntarily leave the situation (exit), do nothing and remain loyal, voice their complaints using organizational process, or engage in counterproductive work behaviors.

What is the relationship between employee responses to perceived workplace injustices and insider attacks? To answer this question, the researcher analyzed violent and non-violent case studies. The violent cases include original research on 87 type III

workplace violence (employee on employee) attacks and three insider terrorism attacks. This original research is compared to a study by Seungmug Lee and Robert McCrie, which had similar results. The non-violent case analysis is derived from four research papers with case studies on insider attacks. The case studies involved sabotage, IP theft, and fraud in the United States. For both the violent and non-violent case studies, the researcher attempted to collect the following data points: employment status at the time of the attack; time span between employment and the attack; whether the insider survived the attack; the reason for the grievance; the target of the attack; and whether there was a history of psychiatric issues, intellectual disabilities, and criminal convictions. Due to a lack of data and multiple, contradictory, and missing narratives, the researcher could not identify specific responses.

How can organizations prevent disgruntled employees from committing attacks? Organizations can use the descriptive, not predictive, grievance response model. The model may be used as a guide for organizations to identify what options their employees may be more likely to use. The feasibility of the exit, loyalty, voice, and counterproductive work behaviors (ELVC) options will differ by organization and employee. Organizations should be aware of this and encourage employees to use grievance response options and conflict management styles that result in positive outcomes for both the insider and the organization, such as voice as opposed to counterproductive work behaviors (CWB). Organizations should consider the following questions:

- Is exit a viable option for employees experiencing a perceived injustice?
 - Can employees easily exit and maintain a similar status, pay, retirement, and benefits package?
- Is loyalty rewarded?
- Are systems in place for employees to voice grievances?
 - How many are there?

- How well known are they to supervisors and employees? How accessible are they?
- Is there an option to involve a neutral third party?
- Are there perceived repercussions for voicing grievances?
- Are CWBs tolerated?

Organizations should ensure grievance procedures are consistent and transparent to all employees. An alternative to grievance systems is the Alternative Dispute Resolution (ADR) program. ADR provides neutral third parties for dispute management, collaborative and respectful techniques to address conflicts, and a safe and confidential environment.

There are three main recommendations derived from this research. Organizations should be aware of the exit, loyalty, voice, and CWB theory as well as positive and negative influences on specific responses to perceived workplace injustices. Organizations should apply ELVC theory to identify how employees are more likely to respond. Organizations should take actions to guide employees toward positive responses and hold them accountable for negative responses; however, organizations should not hold onto poorly performing employees, and employees should not stay in environments they perceive to be unjust if loyalty and voice do not work. Supervisors should talk to employees about how conflict affects them, their perceived options, and the repercussions or potential outcome of each option.

Organizations should immediately revoke physical and cyber access for all employees when they separate voluntarily or involuntarily. Organizations should not ignore employees who perceive they are victims of workplace injustice. These employees should be a starting point for insider threat monitoring. Supervisors and co-workers should recognize and report CWBs. Employees engaging in CWBs should be held accountable. Organizations can prevent disgruntled employees from committing attacks by understanding: why employees become disgruntled (organizational justice and variations of equity theory), how they respond (ELVC theory and conflict management styles), the types of threats they pose, and influential individual and organizational factors.

Organizations should educate and train employees and supervisors and change or create policies, procedures, and cultures that incorporate these recommendations. ADR systems should be credible, allow for employee input, be well-publicized, and involve neutral third parties. People have varying conflict management styles; therefore, having various grievance methods available increases the probability employees will use and perceive the voice response as fair. Organizations must recognize their influence on employee responses to perceived workplace injustices and ability to prevent insider attacks. These recommendations may prevent not only future attacks but also improve employee relationships within their organizations.

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I. INTRODUCTION

Insider threats are a *wicked* problem for organizations due to several factors: not all information is available before or after an attack; there are no established standards for handling threats or immediate solutions; consequences are high, and the threat never ends. The root and proximal causes of insider threats are unique, can be symptoms of other issues, and can be explained in various ways.¹ For example, a disgruntled employee (insider) misbehaves in response to a perceived workplace injustice. Disciplining the employee for the behavior may cause him to become more disgruntled and trigger him to commit an attack. Not disciplining the employee may give him a sense of being above reprimand, thus encouraging inappropriate and potentially escalating behaviors leading him on a critical path toward an attack.² This complex dilemma should not dissuade researchers and organizations from seeking opportunities for intervention instead of perfecting solutions.

The insider threat process begins with a combination of individual factors and a precipitating event (or accumulation of events). Employees have expectations related to the event. If the organization meets the employee's expectations, the employee is satisfied. If not, the employee becomes disgruntled due to a perceived workplace injustice. Perceived workplace injustices are a common cause of employee disgruntlement as well as a motivation for insider attacks.³ Most disgruntled insiders display counterproductive work behaviors (CWB) before attacks; however, co-workers may not have recognized the

¹ Robert F. Mills et al., "A Scenario-Based Approach to Mitigating the Insider Threat," *Information Systems Security Association* 9, no. 4 (May 2011): 12; Horst W. J. Rittel and Melvin M. Webber, "Dilemmas in a General Theory of Planning," *Policy Sciences* 4, no. 2 (June 1973): 155-69, <https://doi.org/10.1007/BF01405730>.

² Eric Shaw and Laura Sellers, "Application of the Critical-Path Method to Evaluate Insider Risks," *Studies in Intelligence* 59, no. 2 (2015): 2, <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol-59-no-2/pdfs/Shaw-Critical%20Path-June-2015.pdf>.

³ Eric Shaw, Lynn Fischer, and Andree Rose, *Insider Risk Evaluation and Audit* (Washington, DC: Department of Defense, Defense Personnel Security Research Center, August 2009), 35, <https://www.hsdl.org/?abstract&did=27453>; Stephen G. White, "Workplace Targeted Violence," in *International Handbook of Threat Assessment*, ed. J. Reid Meloy and Jens Hoffman (New York: Oxford University Press, 2014), 84.

behaviors as warning signs. Not all disgruntled insiders who display CWBs will commit attacks, that is, pose a threat.

Insider threat research tends to concentrate on technical and behavioral CWBs (precursors). The Management and Education of the Risk of Insider Threat (MERIT) model illustrates this process (Figure 1). This thesis explores the opportunity for earlier intervention in the time between disgruntlement and the display of CWBs, as noted in the circle.

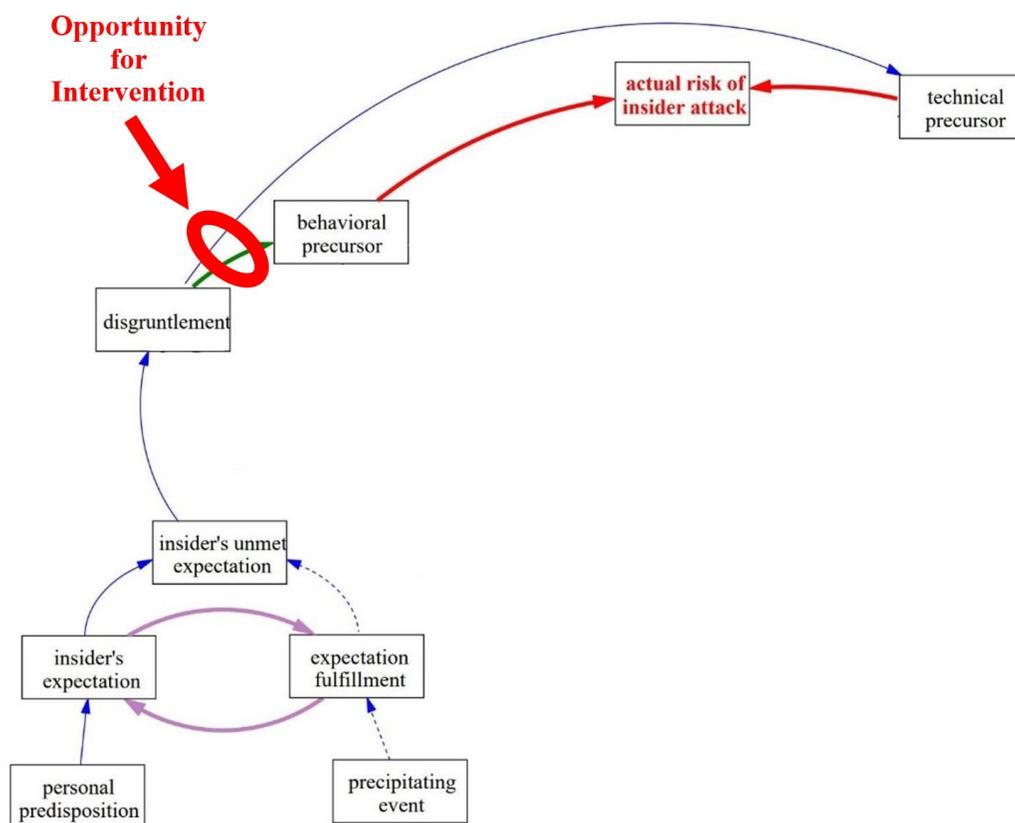


Figure 1. MERIT First Steps⁴

⁴ Adapted from Dawn M. Cappelli et al., Management and Education of the Risk of Insider Threat (MERIT): Mitigating the Risk of Sabotage to Employers' Information, Systems, or Networks, Report No. CMU/SEI-2006-TN-041 (Pittsburgh, PA: Carnegie Mellon University, March 2007), 45, www.dtic.mil/get-tr-doc/pdf?AD=ADA468801.

This research studies insider threats from the perspective of the employee and the organization. In doing so, it answers three questions:

1. How do employees respond to perceived workplace injustices?
2. What is the relationship between employee responses to perceived workplace injustices and insider attacks?
3. How can organizations prevent disgruntled employees from committing attacks?

Answering these questions has benefits beyond the insider threat field. The findings broadly apply to the role of organizations in mitigating perceived workplace injustices and increasing satisfaction with the organization.

Insider threats are a multi-disciplinary problem; therefore, research from a variety of fields is analyzed in the literature review. The literature review includes the definition of insider threat and a discussion of the three threat types. Next, theories on responses to dissatisfaction, organizational justice, equity, social exchange (peer-to-peer relationships), agency, and leader-member exchange (supervisor and employee relationships) are discussed. Then, CWBs (counterproductive work behaviors) and contributing individual and organizational factors are analyzed. Grievances and conflict management styles are explored in the final two sections. A comprehensive psychological and sociological understanding of insider responses to perceived workplace injustices, analyzing these responses as motivations for insider attacks, and the role of the organization in handling insider perceived workplace injustices are provided in this diverse literature review.

A. INSIDER THREAT TYPES

The term *insider* has a generally agreed-upon definition with minor variations. This thesis defines an insider as a person with increased access, knowledge, and trust because of their relationship with an organization. The person can be a current or former employee,

contractor, volunteer, or another affiliate of the organization.⁵ Some researchers do not consider former employees to be insiders, particularly those who leave voluntarily. Former employees often retain knowledge, access, and trust while not drawing attention to themselves as threats. A broad definition of an insider is needed to reduce organizational vulnerabilities. Organizations cannot adequately defend against threats they do not acknowledge.

There are three types of insider threats: violent, non-violent, and unintentional. Violent threats consist of workplace violence and insider terrorism (a specific type of workplace violence). Non-violent threats include, but are not limited to, sabotage, espionage, intellectual property (IP) theft, and fraud.⁶ Unintentional threats are insiders with no malicious intent who fail to follow security practices due to carelessness or ignorance.⁷ Their actions “cause harm or substantially increase the probability of future serious harm to the confidentiality, integrity, or availability of the organization’s information or information systems.”⁸ Unawareness or laziness toward security practices creates unintentional threats. Unintentional threat mitigation consists of training and technical solutions. This thesis studies violent and non-violent threats because they are intentional acts committed by insiders in response to perceived workplace injustices.

Insider threat literature does not dispute the types of threats; however, it rarely mentions violent threats. Researchers tend to focus on non-violent threats, failing to use a

⁵ CERT Insider Threat Group, *Common Sense Guide to Mitigating Insider Threats*,” 5th ed. (Hanscom AFB, MA: Software Engineering Institute, Carnegie Mellon University, December 2016), https://resources.sei.cmu.edu/asset_files/TechnicalReport/2016_005_001_484758.pdf; Denise Bulling et al., *Behavioral Science Guidelines for Assessing Insider Threats* (Lincoln, NE: University of Nebraska, July 2008), <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1036&context=publicpolicypublications>; National Cybersecurity and Communications Integration Center, *Combating the Insider Threat* (Washington, DC: U.S. Department of Homeland Security, May 2, 2014), https://www.us-cert.gov/sites/default/files/publications/Combating%20the%20Insider%20Threat_0.pdf.

⁶ CERT Insider Threat Group, 3; Denise Bulling et al., “*Behavioral Science Guidelines for Assessing Insider Threats*,” 3; National Cybersecurity and Communications Integration Center, *Combating the Insider Threat*, 1; Frank L. Greitzer et al., “Identifying At-Risk Employees: Modeling Psychosocial Precursors of Potential Insider Threats,” (paper presented at the 2012 45th Hawaii International Conference on System Sciences, Maui, HI, January 2012), 2392, <https://doi.org/10.1109/HICSS.2012.309>.

⁷ Insider Threat Integrated Process Team, *DoD Insider Threat Mitigation* (Falls Church, VA: United States Department of Defense, 2000), www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA391380, 6.

⁸ CERT Insider Threat Group, *Common Sense Guide to Mitigating Insider Threats*, 3.

holistic approach to the potential detriment of organizations and future research.⁹ For example, in the *Common Sense Guide to Mitigating Insider Threats* series, the Computer Emergency Response Team (CERT) Insider Threat Group only addresses non-violent and unintentional threats. In the first four editions, it does not address violent insider threats at all. In the fifth edition of the series, CERT attributes its lack of workplace violence recommendations to a lack of experience and research. CERT plans to include workplace violence in its next edition; however, there is no mention of including insider terrorism.¹⁰ Comprehensive insider threat mitigation recommendations should address all threat types and their subsets.

B. THE EVOLUTION OF EXIT, LOYALTY, VOICE, AND NEGLECT THEORIES

Exit, loyalty, and voice theory was proposed by Albert Hirschman in 1970 to describe employee responses to low job satisfaction, and it begins to identify potential employee responses to perceived workplace injustices. These responses can alert management to organizational failures. Exit is voluntarily leaving a position or organization. Voice is “any attempt at all to change rather than to escape from an objectionable state of affairs.”¹¹ Employees use voice by telling someone within the organization about their dissatisfaction. Loyalty is choosing to “suffer in silence, confident that things will soon get better.”¹² Exit, voice, and loyalty are all appropriate responses to employee disgruntlement; however, Hirschman failed to account for the potential deviant nature of dissatisfied employees.

Hagedoorn et al. divided voice into two categories: considerate and aggressive. Considerate voice takes into account the needs of the employee and the organization.

⁹ Mills et al., “A Scenario-Based Approach to Mitigating the Insider Threat,” 12.

¹⁰ CERT Insider Threat Group, *Common Sense Guide to Mitigating Insider Threats*, 4.

¹¹ Albert O. Hirschman, *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States* (Cambridge, MA: Harvard University Press, 1970), 30.

¹² Hirschman, 38.

Aggressive voice considers only the needs of the employee.¹³ Employees who liked their job and supervisors used considerate voice and loyalty. Employees who disliked their job or supervisors used aggressive voice, exit, and neglect. Employees who thought of supervisors as approachable and responsive felt a higher sense of justice and the possibility of improvement.¹⁴ The aggressive voice begins to acknowledge the deviant nature of dissatisfied employees but only accounts for their words and not their actions.

Dan Farrell used studies of dissatisfaction among customers and people in romantic relationships to expand on Hirschman's theory by creating exit, loyalty, voice, and neglect (ELVN) theory. Farrell defined neglect as "lax and disregardful behavior among workers."¹⁵ Examples of neglect include lateness, absenteeism, and increased error rates.¹⁶ Neglect recognizes passive deviant actions; it still does not account for insider threats who actively seek to harm people and organizations.

Farrell conducted two studies on the relationship between ELVN, job satisfaction, organizational investment (commitment), and the availability of better alternatives (better job offers or retirement). Employees who were highly satisfied and invested in their jobs chose voice and loyalty. Employees with low job satisfaction and low investment exited or neglected their positions. Employees chose exit or voice when they had better alternatives.¹⁷ Influential factors, such as commitment and the availability of better alternatives, help researchers understand why employees may choose one response over another. Organizations can use this knowledge to guide employees to respond in ways that are most beneficial to both parties.

¹³ Mariët Hagedoorn et al., "Employees' Reactions to Problematic Events: A Circumplex Structure of Five Categories of Responses, and the Role of Job Satisfaction," *Journal of Organizational Behavior* 20, no. 3 (May 1999): 319, [https://doi.org/10.1002/\(SICI\)1099-1379\(199905\)20:3<309::AID-JOB895>3.0.CO;2-P](https://doi.org/10.1002/(SICI)1099-1379(199905)20:3<309::AID-JOB895>3.0.CO;2-P).

¹⁴ Hagedoorn et al, 320.

¹⁵ Dan Farrell, "Exit, Voice, Loyalty, and Neglect as Responses to Job Dissatisfaction: A Multidimensional Scaling Study," *Academy of Management Journal* 26, no. 4 (December 1, 1983): 598, <https://doi.org/10.2307/255909>.

¹⁶ Farrell, 598.

¹⁷ Caryl E. Rusbult et al., "Impact of Exchange Variables on Exit, Voice, Loyalty, and Neglect: An Integrative Model of Responses to Declining Job Satisfaction," *Academy of Management Journal* 31, no. 3 (September 1988): 615-616, <https://doi.org/10.2307/256461>.

Michael Withey and William Cooper attempted to predict ELVN responses using six factors. Like Farrell, they looked at prior job satisfaction, organizational investment, and the availability of better alternatives. Additionally, they examined the cost (repercussions) of exit and voice, belief improvement was possible, and the locus of control (Figure 2).¹⁸ Low job satisfaction and low investment have a push-and-pull effect on exit; low job satisfaction and low investment push employees away, while better alternatives pull them away. They found that the perceived effectiveness of voice depends on whether the employee feels the supervisor or organization will take corrective or retaliatory action and whether they think someone else will speak up.¹⁹ Employees who believed they had control chose loyalty and voice; those who did not chose exit and neglect. Farrell, Withey, and Cooper all found prior job satisfaction and investment led to a high likelihood of voice and better alternatives led to exit. Most of their predictions proved accurate but had varying degrees of reliability.

¹⁸ Michael J. Withey and William H. Cooper, "Predicting Exit, Voice, Loyalty, and Neglect," *Administrative Science Quarterly* 34, no. 4 (December 1989): 533-536, <https://doi.org/10.2307/2393565>.

¹⁹ Withey and Cooper, 532-536.

People who use exit:



- Had *low* prior job satisfaction and organizational commitment
- *Did not believe* improvement was possible
- Perceived *minimal* repercussions of leaving
- Perceived *significant* repercussions of using voice
- Better alternatives *were available*

People who use loyalty:



- Had *low* prior job satisfaction and organizational commitment
- *Did not believe* improvement was possible
- Perceived *significant* repercussions of using voice

People who use voice:



- Had *high* prior job satisfaction and organizational commitment
- *Believed* improvement was possible
- Perceived *significant* repercussions of leaving
- Perceived *minimal* repercussions of using voice

People who use neglect:



- Had *low* prior job satisfaction and organizational commitment
- *Did not believe* improvement was possible
- Perceived *significant* repercussions of using voice
- Better alternatives *were available*

Figure 2. Exit, Loyalty, Voice, and Neglect Results from Graduate Student Study²⁰

²⁰ Adapted from Withey and Cooper, 525, 530-532.

Two explanations account for the unreliable results. First, employees can use multiple responses at the same time and change responses over time. Second, the definition of loyalty was not the same for researchers and participants. The researchers saw loyalty as active support of the organization, while some participants saw it as passive. The researchers considered loyalty a default action; if an employee does not use the other three responses, then they remain loyal by default. The statistical unreliability of the results does not mean the research lacks applicability. Although these six factors cannot accurately predict response, they influence responses to varying degrees depending on the employee and their situation.

Although ELVN theory does not account for employees who actively attack co-workers and organizations, it does provide a basis for identifying employees' responses to perceived injustices. The exclusion of active attacks may be an oversight of the researchers regarding the questions they asked or a response bias. Hirschman, Hagedorn, Farrell, Withey, and Cooper did not conduct case studies of dissatisfied employees; they conducted surveys on various groups of people. Participants may not think or admit they would commit insider attacks; however, they may react differently when they are in the situation. Although Withey and Cooper's study did not support their predictions statistically, organizations should consider prior job satisfaction, organizational investment, the availability of better alternatives, the cost (repercussions) of exit, the cost of voice, belief improvement was possible, and the locus of control as potential influences on employee response.

C. ORGANIZATIONAL JUSTICE THEORIES

After identifying how employees respond to perceived workplace injustices and factors that influence those responses, this research reviews how employees perceive fairness or organizational justice. Withey and Cooper noted an employee's perception of organizational justice influences whether they believe improvement is possible using voice. Employees can form perceptions about justice within their organization without any

personal experience but, instead, based solely on the experiences of co-workers.²¹ They may become convinced that voice will not work without trying themselves and resort to other options. Organizational justice perceptions have direct and indirect influences on how employees choose to respond to perceived injustices.

One of the central debates surrounding organizational justice theories are the number of justice domains; proposed models use one to four factors. The two agreed-upon factors are distributive and procedural justice. Distributive justice theory studies an employee's thoughts, emotions, and behaviors for particular outcomes. Procedural justice theory focuses on the perceived fairness of the process that influences an employee's thoughts, emotions, and behaviors toward the organization. The third factor, interactional justice, focuses on the interpersonal treatment of people during justice (grievance) process. The four-factor model divides interactional justice into two types: interpersonal justice (the treatment people receive) and informational justice (the explanations people receive about the process and how outcomes were determined).²² Some researchers consider interactional justice the "social side of procedural justice" and not a separate factor.²³ A meta-analysis conducted by Jason Colquitt et al. found strong correlations between interpersonal and informational justice, but they were not strong enough to combine the two theories.²⁴ This thesis uses the most widely accepted three-factor model: distributive, procedural, and interactional.

Distributive, procedural, and interactional justice are interdependent to varying degrees. Joel Brockner uses psychological strain to explain how interactional justice relates to distributive justice in his book, *A Contemporary Look at Organization Justice*, he. A

²¹ Withey and Cooper, 534-535.

²² Jason A. Colquitt et al., "Justice at the Millennium: A Meta-Analytic Review of 25 Years of Organizational Justice Research.," *Journal of Applied Psychology* 86, no. 3 (June 2001): 425-427, <https://doi.org/10.1037/0021-9010.86.3.425>; Yochi Cohen-Charash and Paul E. Spector, "The Role of Justice in Organizations: A Meta-Analysis," *Organizational Behavior and Human Decision Processes* 86, no. 2 (November 2001): 278-279, <https://doi.org/10.1006/obhd.2001.2958>;

²³ Maureen L. Ambrose, Mark A. Seabright, and Marshall Schminke, "Sabotage in the Workplace: The Role of Organizational Injustice," *Organizational Behavior and Human Decision Processes* 89, no. 1 (September 2002): 950, [https://doi.org/10.1016/S0749-5978\(02\)00037-7](https://doi.org/10.1016/S0749-5978(02)00037-7).

²⁴ Colquitt et al., "Justice at the Millennium," 435.

psychological strain occurs when a person perceives a threat is high (adverse outcome, distributive justice) and the resources to manage the threat (control) are low.²⁵ The information and emotional support an employee receives from supervisors and the organization increases their perception of control over a perceived threat.²⁶ Their psychological strain is lessened, and they feel they have control, which influences their response toward loyalty or voice as described by Withey and Cooper.²⁷ Brockner also believes there is an interactive relationship between outcome favorability (distributive justice) and process fairness (procedural justice).²⁸ He states that once organizations achieve average outcome favorability, they should focus on process fairness to increase the employee's support for the decision, the people making the decision, and the organization.²⁹ Organizations should be cognizant of conditions that cause employees high psychological strain and seize on opportunities to increase fairness perceptions.

Researchers have difficulty determining which aspect of organizational justice has the most significant impact on fairness perceptions. In 1976, Gerald Leventhal proposed six procedural criteria justice systems have to be considered fair: consistency, freedom from bias, accuracy, the ability for decisions to be corrected, representation by various groups, and conformity to ethical standards.³⁰ Colquitt et al. found that Leventhal's criteria had a strong relationship to perceptions of procedural fairness. After they controlled outcomes, the most influential contributors to perceived fairness were interactional justice and Leventhal's criteria.³¹ Employees who achieve the outcomes they desire (distributive justice) may still be disgruntled if they feel the process was unfair or people mistreated

²⁵ Joel Brockner, *A Contemporary Look at Organizational Justice* (New York: Routledge, 2010).

²⁶ Brockner, 31.

²⁷ Withey and Cooper, "Predicting Exit, Voice, Loyalty, and Neglect," 533.

²⁸ Brockner, *A Contemporary Look at Organizational Justice*, 10.

²⁹ Brockner, 11.

³⁰ Gerald S. Leventhal, *What Should Be Done with Equity Theory? New Approaches to the Study of Fairness in Social Relationships* (Alexandria, VA: National Science Foundation, September 1976), 24, <https://files.eric.ed.gov/fulltext/ED142463.pdf>.

³¹ Colquitt et al., "Justice at the Millennium," 435.

them. They (and other employees) may feel a fair outcome is not guaranteed in the future due to unfair processes.

Organizational justice provides a framework for understanding how employees perceive fairness. Employees are not concerned solely with the outcome of a grievance but also with the fairness of the process and how people treated them. Allowing an employee to maintain a feeling of control and offering support reduces psychological strain associated with grievances.

This chapter began with an introduction explaining the complexity of insider threats. A comprehensive approach to defining who is an insider and the types of threats they pose is outlined in this thesis. Neglecting threats make organizations and employees vulnerable to attack and employees become threats due to perceived workplace injustices. As a result, they respond using exit, loyalty, voice, and neglect. Organizations must recognize that distributive, procedural, and interactional justice all contribute to perceived fairness.

II. PERCEIVED WORKPLACE INJUSTICES AND INSIDER ATTACKS

A. COUNTERPRODUCTIVE WORK BEHAVIORS

CWBs are a means for employees to restore equity. When an employee perceives injustice, they negatively adjust their behavior to match the inequity they feel from the organization or supervisor.³² CWBs include, but are not limited to, employee theft, fraud, workplace sabotage, workplace aggression, interpersonal conflict, antisocial behavior, withdrawal, cyber deviance, revenge, retaliation, harassment, and bullying.³³ Paul Spector et al. combine 45 behaviors from the Counterproductive Work Behavior Checklist into five categories: sabotage, withdrawal, production deviance, abuse, and theft.³⁴ Melissa Gruys and Paul Sackett use 11 behaviors: theft and related behavior, misuse of information, destruction of property, poor quality work, misuse of time and resources, unsafe behavior, poor attendance, alcohol use, drug use, inappropriate verbal actions, and inappropriate physical actions.³⁵ CWBs can be acts of omission (neglect) or commission (attacks).

Research indicates strong connections between perceived organizational injustice and CWBs. Oge Monanu, Ifeanyi Okoli, and Charles Gozietheir found a “significant and

³² Cohen-Charash and Spector, “The Role of Justice in Organizations,” 287-288; Suzy Fox, Paul E. Spector, and Don Miles, “Counterproductive Work Behavior (CWB) in Response to Job Stressors and Organizational Justice: Some Mediator and Moderator Tests for Autonomy and Emotions,” *Journal of Vocational Behavior* 59, no. 3 (December 2001): 302, <https://doi.org/10.1006/jvbe.2001.1803>.

³³ Fox, Spector, and Miles, 292; Adrian Furnham and Evelyn M. Siegel. “Reactions to Organizational Injustice: Counter Work Behaviors and the Insider Threat.” In *Justice and Conflicts*, eds. Elisabeth Kals and Jürgen Maes, 201-204 (Berlin, Heidelberg: Springer), 2011, https://doi.org/10.1007/978-3-642-19035-3_12; Lily Chernyak-Hai and Aharon Tziner, “Relationships Between Counterproductive Work Behavior, Perceived Justice and Climate, Occupational Status, and Leader-Member Exchange,” *Journal of Work and Organizational Psychology* 30, no. 1 (April 2014): 1, <https://doi.org/10.5093/tr2014a1>.

³⁴ Paul E. Spector et al., “The Dimensionality of Counterproductivity: Are All Counterproductive Behaviors Equal?” *Journal of Vocational Behavior* 68, no. 3 (June 2006): 446-60.

³⁵ Melissa L. Gruys and Paul R. Sackett, “Investigating the Dimensionality of Counterproductive Work Behavior,” *International Journal of Selection and Assessment* 11, no. 1 (2003): 30, <https://doi.org/10.1111/1468-2389.00224>.

positive relationship” between organizational injustice and CWBs.³⁶ Yochi Cohen-Charash and Paul Spector found that CWBs are closely related to low procedural justice and more loosely related to distributive and interactional injustice.³⁷ Rebecca Bennett and Sandra Robinson agree that interpersonal and organizational deviance are related to low procedural and interactional justice. They found neither type of deviance to be related to distributive justice.³⁸ Lily Chernyak-Hai and Aharon Tziner found high levels of perceived distributive justice, a favorable organizational climate, and strong leader-member exchange (LMX) lead to fewer CWBs because a strong LMX acts as a buffer to perceived low distributive justice.³⁹ Although there is some disagreement in the literature, a majority of researchers believe CWBs are a result of all three perceived injustices to varying extents.

Karl Aquino et al. studied the relationship between blame and revenge. Revenge is “an action in response to some perceived harm or wrongdoing by another party that is intended to inflict damage, injury, discomfort, or punishment on the party judged responsible.”⁴⁰ According to their study, the willingness to seek revenge depends on both the relative and absolute positions of power of the employees. Employees use revenge against co-workers with less power. People in positions of lesser power depend on those with more power and, therefore, are less likely to seek revenge for perceived workplace injustices. People in higher-ranking positions were less likely to seek revenge because of the “normative constraints associated with positions of authority and power.”⁴¹ Revenge is a motivation for employees to restore justice in an organization. Employees in positions

³⁶ Ifeanyi E. Okoli, Oge G. Monanu, and Gozie Adibe, “Examining the Link between Organizational Justice and Counterproductive Work Behaviour,” *Journal of Business* 1, no. 2 (September 22, 2015): 9, <http://advancejournals.org/Journal-of-Business-and-Management-Studies/article/examining-the-link-between-organizational-justice-and-counterproductive-work-behaviour/>.

³⁷ Cohen-Charash and Spector, “The Role of Justice in Organizations,” 308-309.

³⁸ Rebecca J. Bennett and Sandra L. Robinson, “Development of a Measure of Workplace Deviance,” *Journal of Applied Psychology* 85, no. 3 (2000): 356, <https://doi.org/10.1037//0021-9010.85.3.349>.

³⁹ Chernyak-Hai and Tziner, “Relationships between Counterproductive Work Behavior,” 6.

⁴⁰ Karl Aquino, Thomas M. Tripp, and Robert J. Bies, “How Employees Respond to Personal Offense: The Effects of Blame Attribution, Victim Status, and Offender Status on Revenge and Reconciliation in the Workplace,” *Journal of Applied Psychology* 86, no. 1 (2001): 53, <https://doi.org/10.1037//0021-9010.86.1.52>.

⁴¹ Aquino, Tripp, and Bies, 57-58.

of lower power may feel mistreated to the point where they no longer care about their career and seek revenge against, or attack, those in higher positions.

In a similar study, Daniel Skarlicki and Robert Folger found retaliation against an organization or person within an organization is closely related to distributive, procedural, and interactional justice. If procedural and interactional justice are perceived as low, the relationship between the outcome and retaliation is strong. A grievance process perceived as fair outweighs the effects of an unfavorable outcome and negative interactions. They also found that the relationship between distributive and procedural justice is not important as long as there is a perceived high level of interactional justice. Procedural and interactional justice equally influenced perceived fairness and retaliation.⁴² The results were slightly contradictory. When treated well, employees are willing to overlook outcomes and processes. When the process was fair, they were less concerned about outcomes and interactions. In both cases, the outcome was the *least* influential factor in preventing retaliation. As discussed in the section on organizational justice, this is why insiders are still a threat even when they get what they want.

B. VIOLENT AND NON-VIOLENT TYPES OF ATTACKS

This thesis analyzes case studies involving workplace violence and insider terrorism as forms of violent attacks and sabotage, IP theft, and fraud as forms of non-violent attacks. This section defines these attack types, how they relate to organizational justice, and observations about the insiders who committed the attacks. Many researchers, organizations, security professionals, and the media refer to the demographic profiles of people who commit workplace violence. Demographic profiling is dangerous because it can target specific people and ignore others who may pose a threat. Organizational demographics skew attacker demographics. An insider threat that works in an organization consisting of mainly older white men is most likely to be an older white male. This profile

⁴² Daniel P. Skarlicki and Robert Folger, "Retaliation in the Workplace: The Roles of Distributive, Procedural, and Interactional Justice," *Journal of Applied Psychology* 82, no. 3 (June 1997): 438, <https://search-proquest-com.libproxy.nps.edu/docview/614322762/fulltextPDF/C2562927A6D2497CPQ/1?accountid=12702>; Harry Levinson, "Reciprocation: The Relationship between Man and Organization," *Administrative Science Quarterly* 9, no. 4 (March 1965): 370-390, <https://doi.org/10.2307/2391032>.

is not useful to an organization that employs mostly young female minorities. The thesis studies characteristics that make an employee a threat; characteristics such as motivations, behaviors, and a lack of other response options rather than demographics such as age, gender, and race.

1. Workplace Violence

Workplace violence is the most common violent insider threat. Workplace violence encompasses a broad range of intentional behaviors that affect the organization and may result in physical injury or death.⁴³ The Occupational Safety and Health Administration divides workplace violence into four types based on the perpetrator's relationship with the organization or employee (Figure 3). In all types, the victim is an employee. Type I is violence perpetrated during the commission of a crime such as a robbery. Type II is violence committed by a customer or client. Type III is violence committed by an employee. Type IV is violence perpetrated by someone who has a personal relationship with an employee but who is unrelated to the workplace, such as a domestic partner, family member, or acquaintance.⁴⁴ This thesis only addresses type III workplace violence.

⁴³ American Society for Industrial Security, ed., *Workplace Violence Prevention and Response Guidelines* (Alexandria, VA: ASIS International, 2005), <http://www.ndsc.org/SiteDocuments/Active%20Shooter/WPVguidelinesASIS.pdf>.

⁴⁴ Critical Incident Response Group, *Workplace Violence: Issues in Response*, ed. Eugene A. Rugala and Arnold R. Isaacs (Quantico, VA: Department of Justice, 2003), 13, <https://www.fbi.gov/file-repository/stats-services-publications-workplace-violence-workplace-violence/view>; National Institute for Occupational Safety and Health, *Workplace Violence Prevention Strategies and Research Needs* (paper presented at the conference Partnering in Workplace Violence Prevention: Translating Research to Practice, Baltimore, MD, Department of Health and Human Services, November 17-19, 2004), 4, <https://www.cdc.gov/niosh/docs/2006-144/pdfs/2006-144.pdf>.

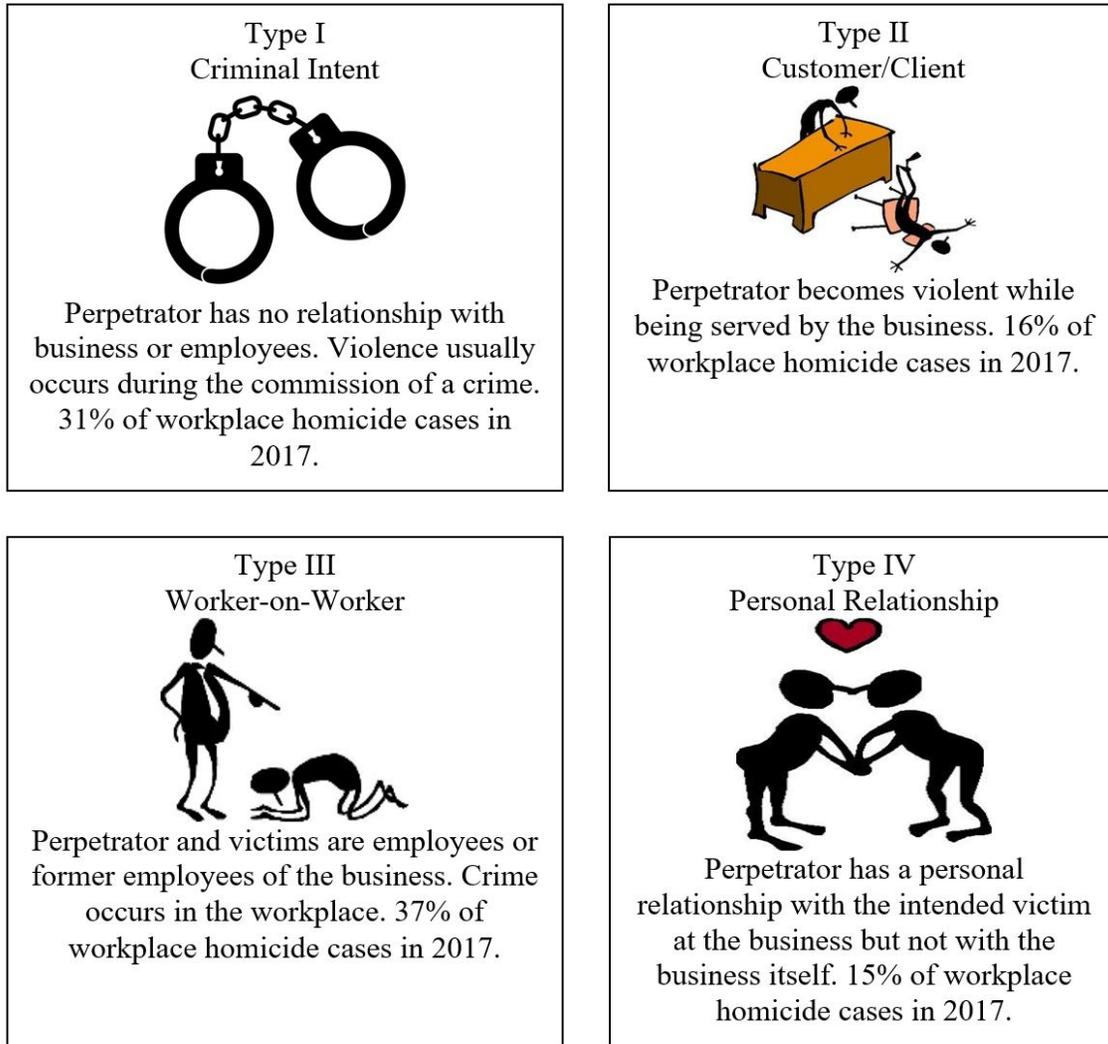


Figure 3. Occupational Safety and Health Administration Workplace Violence Typology⁴⁵

Type III workplace violence is a severe form of workplace aggression. Workplace aggression includes violent acts and behaviors such as spreading negative rumors, purposefully withholding needed information, or intentionally failing to return phone

⁴⁵ Adapted from National Institute for Occupational Safety and Health, 4; “Workplace Homicides by Selected Characteristics,” United States Department of Labor, Bureau of Labor Statistics (accessed January 13, 2019), <https://www.bls.gov/iif/oshwc/foi/workplace-homicide.xlsx>.

calls.⁴⁶ Aggression is “any behavior where the aggressor delivers a noxious stimulus to another person—with the intent of harming the other person—and expects that this noxious stimulus will harm the targeted victim.” Violence is “an act carried out with the intention, or perceived intention, of causing physical pain or injury to another person.”⁴⁷ The difference between aggression and violence is the infliction of physical harm.

Liane Greenberg and Julian Barling found low procedural justice and employee monitoring caused aggression between employees and supervisors but not between coworkers. Alcohol use and a history of aggression influence aggression between coworkers. Aggression toward subordinates was not predictable.⁴⁸ Employees perceive monitoring as a violation of trust, a negative LMX, and low-perceived organizational support. They blame supervisors for organizational processes and employee monitoring (lack of trust). These findings substantiate the procedural and interactive role of supervisors.

Seungmug Lee and Robert McCrie conducted a study of mass workplace homicides committed by insiders. Co-workers described 65.9% of the offenders as either aggressive or extremely quiet, 36.4% had job performance issues, 43.2% made threats before the attack, 15.9% had a violent criminal record, 20.5% had a history of psychiatric treatment, and 6.8% had a history of drug use.⁴⁹ These are common data points researchers collect because they are common assumptions about attackers. Lee and McCrie posit,

disgruntled employees may commit violent acts not because of any inherent personality disorder, but rather because of something related to their occupational circumstances. If researchers thoroughly examined offenders job performance, it could help lead to a better understanding of workplace

⁴⁶ I. M. Jawahar, “A Model of Organizational Justice and Workplace Aggression,” *Journal of Management* 28, no. 6 (December 2002): 811, <https://doi.org/10.1177%2F014920630202800606>.

⁴⁷ Liane Greenberg and Julian Barling, “Predicting Employee Aggression against Coworkers, Subordinates and Supervisors: The Roles of Person Behaviors and Perceived Workplace Factors,” *Journal of Organizational Behavior* 20, no. 6 (November 1999): 898, [https://doi-org.libproxy.nps.edu/10.1002/\(SICI\)1099-1379\(199911\)20:6<897::AID-JOB975>3.0.CO;2-Z](https://doi-org.libproxy.nps.edu/10.1002/(SICI)1099-1379(199911)20:6<897::AID-JOB975>3.0.CO;2-Z).

⁴⁸ Greenberg and Barling, 910.

⁴⁹ L. Seungmug Lee and Robert McCrie, *Mass Homicides by Employees in the American Workplace* (Alexandria, VA: ASIS International, 2012), https://www.asisonline.org/globalassets/foundation/documents/crisp-reports/crisp_mass-homicides-by-employees-american-workplace.pdf, 14-15.

massacres. Unfortunately, researchers have seldom examined job-related factors—only employment status and job types of mass murderers.⁵⁰

The goal of this thesis is to do as Lee and McCrie suggest, to focus on job-related factors such as grievance response options and organizational grievance systems.

2. Terrorism

Insider terrorism is not a commonly studied problem. There is no consensus on the definition of terrorism; therefore, this research uses the definition provided by National Consortium for the Study of Terrorism and Responses to Terrorism. It defines terrorism as “the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation.”⁵¹ Since 2000, the Global Terrorism Database contains only three instances of employees in the United States committing acts of terrorism in their workplaces that resulted in fatalities: the 2009 shooting in Fort Hood, Texas; the 2013 shooting spree of Christopher Dorner in California; and the 2015 shooting in San Bernardino, California.⁵² In all three incidents, the insiders experienced perceived workplace injustices.⁵³ Insider terrorism is a form of workplace violence. There was no research found on the relationship between distributive, procedural, and interactional justice and terrorism committed in the workplace by insiders.

3. Sabotage

Maureen Ambrose, Mark Seabright, and Marshall Schminke examined the relationship between perceived injustice and workplace sabotage. Sabotage is “behavior intended to damage, disrupt, or subvert the organization’s operations for the personal purposes of the saboteur by creating unfavorable publicity, embarrassment, delays in production, damage to property, the destruction of working relationships, or the harming

⁵⁰ Lee and McCrie, 14.

⁵¹ “Data Collection Methodology,” Global Terrorism Database, July 2, 2018, <https://www.start.umd.edu/gtd/using-gtd/>.

⁵² Global Terrorism Database.

⁵³ Global Terrorism Database.

of employees or customers.”⁵⁴ They determined that injustice is a common motivation for workplace sabotage. Low interactional justice is related to sabotage motivated by retaliation, whereas low distributive justice is related to sabotage motivated by equity restoration. Employees target the organization when they view the organization as the source of injustice. When an individual was the source of the perceived injustice, insiders equally targeted both organizations and individuals.⁵⁵ The goal of sabotage is to restore equity and express negative emotions.

CERT researchers created and compared models of insider espionage and information technology (IT) system sabotage (Figure 4). They found six common factors among saboteurs and spies.⁵⁶ First, both groups had personal predispositions including severe mental health disorders, personality problems, social skills and decision-making biases, and a history of rule conflicts.⁵⁷ Second, saboteurs and spies often experienced stressful work and personal events before their attacks. Work-related sanctions and conflicts were often present.⁵⁸ Third, most saboteurs and spies displayed concerning behaviors such as security and personnel violations before and during the attacks.⁵⁹ Fourth, in both types of attacks, some technical precursors could have been identified as potential or ongoing malicious attacks.⁶⁰ Fifth, often organizations ignored or did not detect rule violations.⁶¹ Last, a lack of access controls, both electronic and physical, allowed saboteurs

⁵⁴ Ambrose, Seabright, and Schminke, “Sabotage in the Workplace,” 948; Michael D. Crino, “Employee Sabotage: A Random or Preventable Phenomenon?,” *Journal of Managerial Issues* 6, no. 3 (1994): 312.

⁵⁵ Ambrose, Seabright, and Schminke, 960-961.

⁵⁶ Stephen R Band et al., *Comparing Insider IT Sabotage and Espionage: A Model-Based Analysis* (Pittsburgh, PA: Carnegie Mellon University, December 2006), <ftp://ftp.sei.cmu.edu/pub/documents/06.reports/pdf/06tr026.pdf>, 8-9.

⁵⁷ Band et al., 15.

⁵⁸ Band et al., 18, 21.

⁵⁹ Band et al., 22, 25.

⁶⁰ Band et al., 27.

⁶¹ Band et al., 30.

and spies to carry out attacks.⁶² These are common factors present in other types of attacks as well.

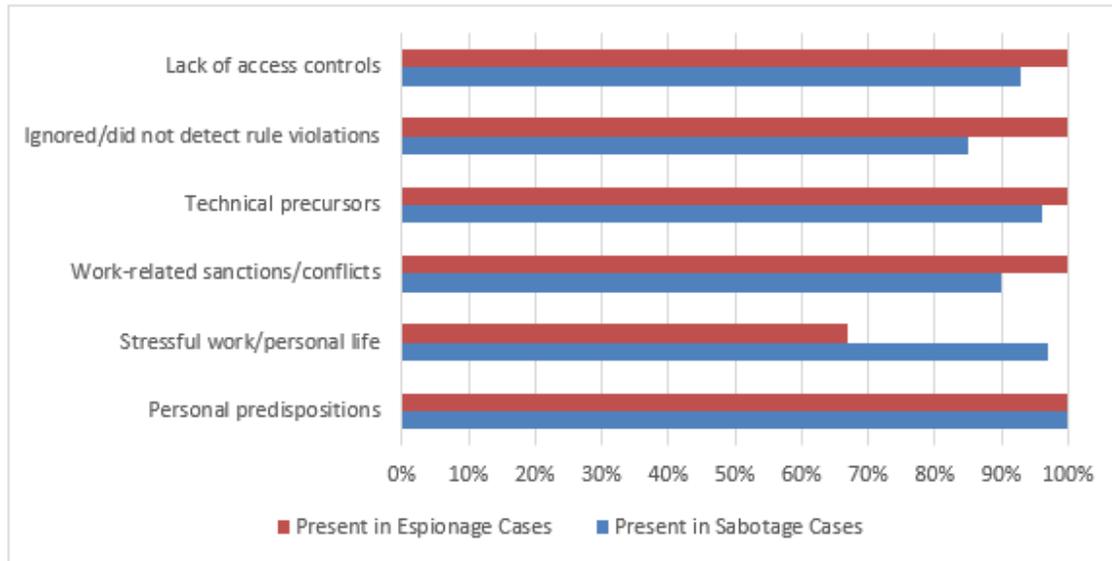


Figure 4. Observations from CERT Research on Espionage and Sabotage⁶³

4. IP Theft

CERT also examined 48 cases of IP theft. They identified two personality types present in all the cases: the entitled independent (EI) and the ambitious leader (AL).⁶⁴ EIs were involved in 27 cases and ALs in 21 cases.⁶⁵ An EI is “an insider acting primarily alone to steal information to take to a new job or their own side business.”⁶⁶ EIs join an organization wanting to do a good job but with personal predispositions to entitlement. Throughout their employment, their contributions become more tangible. Their sense of entitlement is increased by organizational praise and telling them how important they are

⁶² Band et al., 33.

⁶³ Adapted from Band et al., 18-33.

⁶⁴ Andrew P. Moore et al., *A Preliminary Model of Insider Theft of Intellectual Property* (Pittsburgh, PA: Carnegie Mellon University, June 2011), <https://doi.org/10.21236/ADA589594>, 4.

⁶⁵ Moore et al., 9, 15.

⁶⁶ Moore et al., 6.

or how their contributions have improved the organization. These actions create a “self-reinforcing feedback loop” that continues until the insider becomes dissatisfied, commonly caused by the denial of a request for raises, benefits, promotions, relocations, or the threat of layoffs within the organization.⁶⁷ Dissatisfaction weakens the insider’s desire to contribute and their loyalty to the organization, ultimately causing them to voluntarily exit and take IP with them.

An AL is “a leader who recruits insiders to steal information for some larger purpose” including developing a competitive product, using it to benefit their new employer, or selling it to a competitor.⁶⁸ The model for the AL is the same as the EI except dissatisfaction was only present in 10% of the cases. The primary motivation for theft was an AL’s influence and promises of rewards.⁶⁹ Insiders in both scenarios showed signs of job dissatisfaction (EI 33% and AL 10%), stole IP within their area of responsibility (EI 74% and AL 86%), and did so even with IP agreements in place (EI 41% and AL 48%).⁷⁰ Current employees accounted for 75% of insider IP thefts while 65% were current employees who had already accepted another job offer or who were already working for a competitor.⁷¹ EIs and ALs are examples of insiders motivated by equity injustices. This study illustrates why personnel no longer working for an organization should be considered as threats.

5. Fraud

Brian Martinson et al. studied a total of 3,247 scientists at early- and mid-points in their careers to determine whether there was a relationship between perceived unfair treatment and behavior that “compromises the integrity of science” such as fraud.⁷² They

⁶⁷ Moore et al., 6-8.

⁶⁸ Moore et al., 10.

⁶⁹ Moore et al., 10.

⁷⁰ Moore et al., 17.

⁷¹ Moore et al., 19.

⁷² Brian C. Martinson et al., “Scientists’ Perceptions of Organizational Justice and Self-Reported Misbehaviors,” *Journal of Empirical Research on Human Research Ethics* 1 no. 1 (March 2006): 52, <https://doi/10.1525/jer.2006.1.1.51>.

found that perceptions of procedural injustice significantly contributed to self-reported misbehaviors. A positive correlation exists between distributive injustice and misconduct for scientists early in their careers but not so for those who were more established. The findings supported the researchers' hypothesis "that stronger associations between perceived organizational injustice and reported misbehavior are to be found among scientists who are more likely to face threats to their identity."⁷³ The study also looked at the intrinsic drive. Scientists with high intrinsic drives were more sensitive to procedural injustice when they felt their career success was in jeopardy.⁷⁴ Fraud, like the other types of attacks discussed, involves equity restoration, equity sensitivity, and perceptions of organizational injustice.

This section defines the types of insider attacks that are analyzed in this thesis: workplace violence, terrorism, sabotage, IP theft, and fraud. Each type of attack is an attempt to restore equity and make right a perceived injustice by an individual or the organization. Perceived equity or social exchange imbalances, violations of LMX, and low-perceived organization support cause perceived injustices.

C. TARGETS

Targets of violent and non-violent insider threats may be specific individuals within the organization (CWB-I), the organization itself (CWB-O), both, or selected at random. M. Sandy Hershcovis et al. have identified relationships between CWB-Is and interpersonal conflict, distributive justice, anger, negative affect, and gender as well as relationships between CWB-Os and anger, negative affect, gender, job dissatisfaction, procedural justice, and situational constraints.⁷⁵ A study by Dwayne Devonish and Dion Greenidge found low distributive, procedural, and interactional justice had a significant

⁷³ Martinson, et al., 62.

⁷⁴ Martinson, et al., 62.

⁷⁵ M. Sandy Hershcovis et al., "Predicting Workplace Aggression: A Meta-Analysis," *Journal of Applied Psychology* 92, no. 1 (2007): 234, <https://doi.org/10.1037/0021-9010.92.1.228>.

negative impact on CWB-Is and CWB-Os.⁷⁶ According to a study by Suzy Fox, Paul Spector, and Don Miles, distributive and procedural injustice are organizational stressors that cause CWB-Os while interpersonal conflict (interactional injustice) cause CWB-Is.⁷⁷ These findings are consistent with the psychology and sociology of workplace relationships; individual targets arise from interactional injustice, and organizational targets arise from procedural injustice. Distributive injustice can result from CWB-I and CWB-O. Supervisors can be seen as agents of the organization and be targets because of procedural injustice as well.

D. INDIVIDUAL AND ORGANIZATIONAL FACTORS

Researchers study individual factors that influence insider threats while often ignoring the influence of the organization. The organization's role is essential. This section reviews the literature on individual and organizational factors to provide a comprehensive understanding of these influences.

1. Individual Factors

Numerous factors influence insider threats on an individual level. These include individual personality traits, the relationship between the employee and the employer, and external stressors.⁷⁸ Colquitt et al. say trust propensity (derived from fairness heuristic theory) and morality (derived from fairness theory) are moderating variables for reactions to procedural and interactional justice. Risk aversion (derived from uncertainty management theory) is a moderating variable for procedural, interactional justice, and distributive justice effects.⁷⁹ Richard Huseman, John Hatfield, and Edward Miles's equity

⁷⁶ Dwayne Devonish and Dion Greenidge, "The Effect of Organizational Justice on Contextual Performance, Counterproductive Work Behaviors, and Task Performance: Investigating the Moderating Role of Ability-Based Emotional Intelligence," *International Journal of Selection and Assessment* 18, no. 1 (March 2010): 80, <https://doi.org/10.1111/j.1468-2389.2010.00490.x>.

⁷⁷ Fox, Spector, and Miles, "Counterproductive Work Behavior (CWB) in Response to Job Stressors and Organizational Justice," 303.

⁷⁸ Furnham and Siegel, "Reactions to Organizational Injustice," 209-213.

⁷⁹ Jason A. Colquitt et al., "Justice and Personality: Using Integrative Theories to Derive Moderators of Justice Effects," *Organizational Behavior and Human Decision Processes* 100, no. 1 (May 1, 2006): 110-27, <https://doi.org/10.1016/j.obhdp.2005.09.001>.

sensitivity construct describe a continuum of sensitivity marked by three types of personalities: benevolents, equity sensitives, and entitleds. Benevolents prefer their output/income ratio to be less than others, equity sensitives prefer equal output/income ratios, and entitleds prefer the output/income ratio to be more than others.⁸⁰ Justice sensitivity at the individual level affects an individual's perception of injustice and response. Other individual characteristics such as negative affect, the locus of control, impulse control, information-processing differences, tolerance for ambiguity, attitudinal variables (attitude toward revenge), and organizational frustration may also play a role.⁸¹ These are just some of the individual characteristics that influence perceptions of justice.

Researchers have studied personality types, or traits, and their relationship to CWBs. LaMarcus Bolton, Liesl Becker, and Larissa Barber conducted a study to determine whether the Big Five personality traits (extroversion, agreeableness, conscientiousness, neuroticism, and openness to experience) could predict Spector et al.'s five CWB dimensions (abuse, production deviance, sabotage, theft, and withdrawal).⁸² Bolton, Becker, and Barber's research supported previous research indicating lower agreeableness and conscientiousness were predictors of all five CWBs. Low agreeableness led to CWB-Is and low conscientiousness led to CWB-Os, specifically sabotage and withdrawal. Lower extroversion was a predictor of theft while a higher openness to experience was a predictor of production deviance.⁸³ Jesús Salgado conducted a meta-analysis to determine whether the Big Five personality traits were predictors of absenteeism, accidents, deviant behaviors, or turnover. The results indicated that conscientiousness and agreeableness were general predictors of turnover and deviant behavior. Emotional stability, openness, and

⁸⁰ Richard C. Huseman, John D. Hatfield, and Edward W. Miles, "A New Perspective on Equity: The Equity Sensitivity Construct," *Academy of Management Review* 12, no. 2 (April 1987): 223.

⁸¹ Anne O'Leary-Kelly, Ricky W. Griffin, and David J. Glew, "Organization-Motivated Aggression: A Research Framework," *Academy of Management Review* 21, no. 1 (January 1996), 247.

⁸² LaMarcus R. Bolton, Liesl K. Becker, and Larissa K. Barber, "Big Five Trait Predictors of Differential Counterproductive Work Behavior Dimensions," *Personality and Individual Differences* 49, no. 5 (October 2010): 539, <https://doi.org/10.1016/j.paid.2010.03.047>.

⁸³ Bolton, Becker, and Barber, "Big Five Trait Predictors of Differential Counterproductive Work Behavior Dimensions," 540.

extraversion were predictors of turnover (Figure 5).⁸⁴ Personality traits may be influential factors, but not reliable predictors, of people likely to display CWBs.

⁸⁴ Jesús F. Salgado, "The Big Five Personality Dimensions and Counterproductive Behaviors," *International Journal of Selection and Assessment* 10, no. 1&2 (March 2002): 118, 120, <https://doi.org/10.1111/1468-2389.00198>.

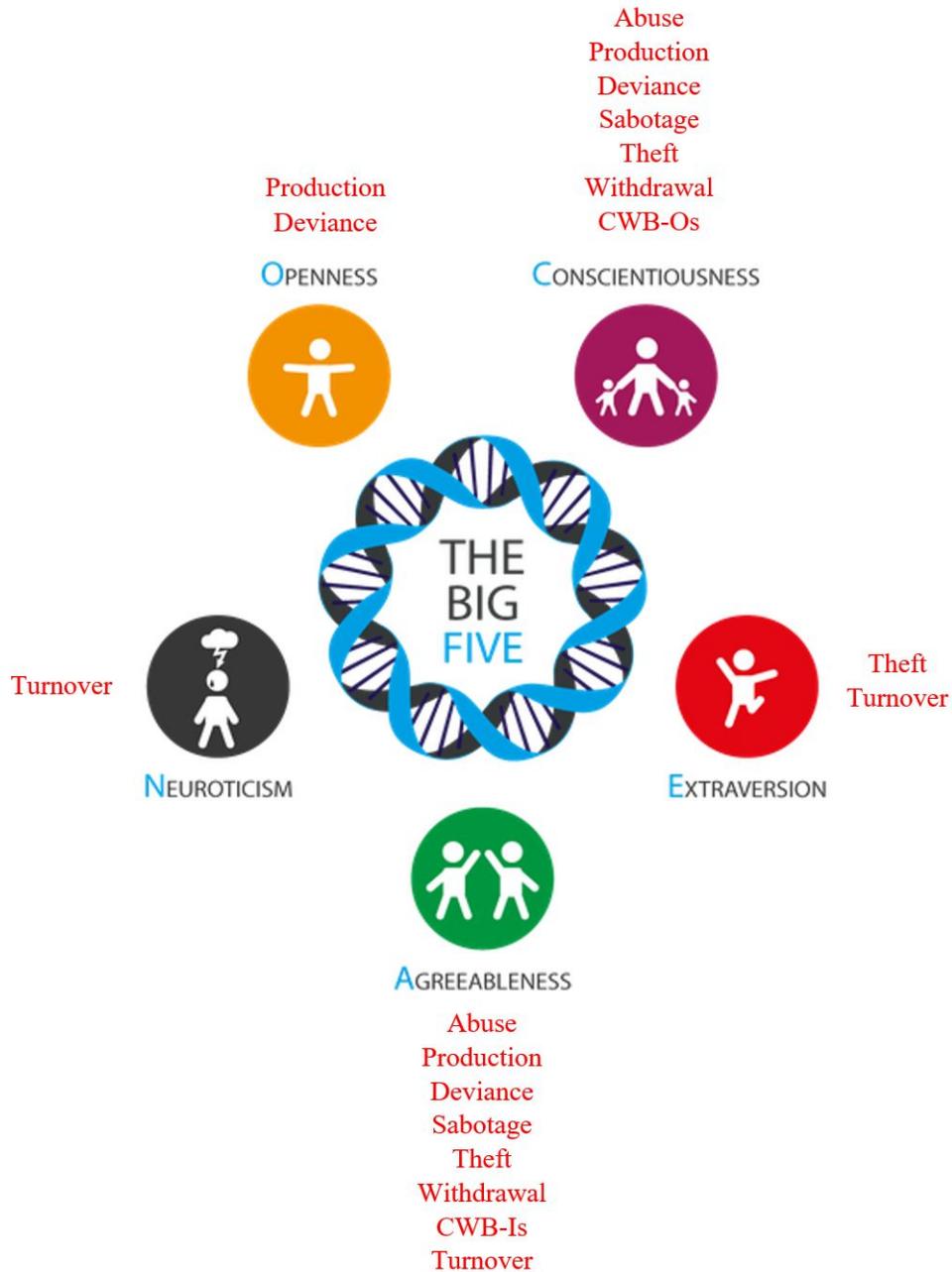


Figure 5. The Big Five Personality Traits and Related Predictions⁸⁵

⁸⁵ Adapted from Bolton, Becker, and Barber, “Big Five Trait Predictors of Differential Counterproductive Work Behavior Dimensions,” 539, 540; Jesús F. Salgado, “The Big Five Personality Dimensions and Counterproductive Behaviors,” 118-120; “What Are the Big Five Personality Traits?,” Enkimd, June 15, 2017, <https://www.enkimd.com/big-five-personality-traits.html>.

Anne O’Leary-Kelly, Ricky Griffin, and David Glew agree that individual characteristics and organizational environments interact in a way that potentially triggers organization-motivated aggression (OMA) and organization-motivated violence (OMV). OMA are actions that motivate insiders or outsiders to attempt to cause harm and OMV is the outcome of those actions. Individuals obtain aggressive traits through social learning in the forms of aversive treatment, incentive inducements, modeling, and the physical environment. These learned traits cause individuals to have a higher propensity for violence in response to perceived injustice. Social learning of aggression may occur before entering the organization or after an individual is already employed due to the organizational culture.⁸⁶ Individual and organizational factors are interdependent. The organization’s culture can be a negative influence on employees.

2. Organizational Factors

Organizational factors, including reactions to employee grievances, are a contributing risk factor and may trigger an insider attack. Insider threat literature recommends that organizations have consistent and fair policies, enforcement, and termination procedures; however, the literature seldom offers specific recommendations

⁸⁶ O’Leary-Kelly, Griffin, and Glew, “Organization-Motivated Aggression: A Research Framework,” 238; Fox, Spector, and Miles, “Counterproductive Work Behavior (CWB) in Response to Job Stressors and Organizational Justice,” 232-247.

on handling employee grievances.⁸⁷ Individual and organizational factors do not occur in vacuums; their effects are cumulative and reinforce perceptions of injustice.

Positive organizational factors include a culture that provides fair treatment, incentives for appropriate behavior, commitment, positive behavior modeling, and a stable physical environment.⁸⁸ Organizations should address individual aggressive behaviors when they occur and proactively ensure a favorable climate for all employees. They should have clear values and standards, fair and consistent policies, and grievance procedures and train all supervisors and employees on them.⁸⁹ Organizations should work to build trust, commitment, satisfaction among employees, and encourage organizational citizenship behaviors (OCB).⁹⁰ OCBs are “any form of behavior that goes beyond formal expectations to support colleagues or the whole organization.”⁹¹ These are all ways to create neutral social equity exchanges, positive LMX, and high-perceived organizational support.

Poor leadership and interpersonal skills do not build OCBs; instead, they can lead to CWBs. Poor management practices fail to recognize and hold employees accountable for issues and behaviors that may lead to a lack of commitment or disengagement.

⁸⁷ Matthew Bunn and Scott D. Sagan, *A Worst Practices Guide to Insider Threats-Lessons from Past Mistakes* (Cambridge, MA: American Academy of Arts and Science, 2014), <http://www.amacad.org/multimedia/pdfs/publications/researchpapersmonographs/insiderThreats.pdf>; Shaw and Sellers, “Application of the Critical-Path Method to Evaluate Insider Risks,” 5; Frank L. Greitzer et al., “Developing an Ontology for Individual and Organizational Sociotechnical Indicators of Insider Threat Risk,” in *Proceedings of the Eleventh 11th International Conference on Semantic Technology for Intelligence, Defense, and Security*, ed. Kathryn B. Laskey et al., Semantics in the Internet of Things (Fairfax, VA: C⁴I Center 2016), 21, http://ceur-ws.org/Vol-1788/STIDS_2016_T03_Greitzer_etal.pdf; James Alan Fox and Jack Levin, “Firing Back: The Growing Threat of Workplace Homicide,” in *The Annals of the American Academy of Political and Social Science* 536 (November 1994): 25-26, <http://www.jstor.org.libproxy.nps.edu/stable/pdf/1048005.pdf>; Greitzer et al., “Identifying At-Risk Employees,” 2393; Shaw, Fischer, and Rose, “Insider Risk Evaluation and Audit,” 14; Critical Incident Response Group, *Workplace Violence: Issues in Response*, 13; Robert Schmidtke, “Workplace Violence: Identification and Prevention,” *The Journal of Law Enforcement* 1, no. 1 (2011),): 8, <http://jghcs.info/index.php/1/article/view/28/30>; Eric D. Shaw and Lynn F. Fischer, *Ten Tales of Betrayal: The Threat to Corporate Infrastructures by Information Technology Insiders Analysis and Observations* (Monterey, CA: Defense Personnel Security Research Center, 2005), 13-18, <http://www.dhra.mil/Portals/52/Documents/perserec/tr05-13.pdf>.

⁸⁸ O’Leary-Kelly, Griffin, and Glew, 235-236.

⁸⁹ Furnham and Siegel, “Reactions to Organizational Injustice,” 211-213.

⁹⁰ Furnham and Siegel, 207.

⁹¹ Furnham and Siegel, 204.

Supervisors should identify, attempt to correct, and report CWBs to maintain a positive organizational culture, encourage OCBs, and avoid potential insider attacks.⁹² According to Adrian Furnham and Evelyn Siegel, threats from insiders “[are] nearly always at [their] highest in times of change. Emotions run high, trust and justice issues come to the fore particularly when it comes to ‘internal communications’ that are more PR than the truth.”⁹³ Poor leadership and communication lead to interactional justice issues between employees and supervisors.

Insider threats arise from a combination of individual and organizational factors. Researchers tend to focus on the prediction and detection of insiders at the individual level. Instead, the focus should be on both individual and organizational factors. Individual factors include personality traits, relationships, and external stressors; organizations should ensure a positive working environment, be consistent and fair, encourage OCBs, and address CWBs.

E. GRIEVANCES

This thesis uses the sociological definition of perceived injustice—placing the blame on someone else. Types of perceived injustice include but are not limited to lack of respect, advancement, recognition, use of individual skills, or pay; exclusion; unfair policies and procedures; unclear values or standards; sexual harassment; and exploitation.⁹⁴ In their article on the subject, legal scholars William Felstiner, Richard Abel, and Austin Sarat describe the formation of grievances in three phases. The first is naming—the transformation of unperceived injurious experiences into perceived injurious experiences. The second is blaming—the assignment of fault. The third is claiming—the communication of the grievance and request for a remedy. When the insider rejects all or part of the claim, a dispute occurs. According to the scholars, an employee must perceive the event as injurious (unjust), blame the organization, and ask the organization to fix the

⁹² Furnham and Siegel, 207-208.

⁹³ Furnham and Siegel, 208. There was no citation for this claim.

⁹⁴ Furnham and Siegel.

problem.⁹⁵ This researcher does not agree with the claiming requirement; an employee can have a grievance without voicing it.

Grievances are a type of conflict. Conflict is “the process that begins when one party perceives that the other has negatively affected, or is about to affect negatively, something that he or she cares about.”⁹⁶ Conflicts, like grievances, start with a triggering event. According to Kenneth Thomas, there are three forms of conflict: judgments, goals, and normative standards. Judgment conflicts arise from different perceptions or conclusions about factual or empirical issues. Goal conflicts occur when parties pursue different outcomes, the pursuit of which threatens or obstructs the other party. Normative conflicts involve one party’s expectation or evaluation of how another party should behave. Types of behavior may be related to status, hierarchy, equity, justice, ethics, and other social norms. Events may trigger one or multiple types of conflict.⁹⁷ All of these conflicts occur in the workplace.

F. CONFLICT MANAGEMENT

Employees and managers handle conflict based on their conflict management styles. There are five conflict management styles; however, researchers use different terms to describe them. The terms followed by a perceived win or loss from the employee and organizational perspective are shown in Figure 6. The five styles are avoiding (lose-lose), accommodating (obliging, lose-win), competing (dominating, win-lose), compromising (neutral), and collaborating (integrating, win-win).⁹⁸ Two factors are used to classify the

⁹⁵ William L. F. Felstiner, Richard L. Abel, and Austin Sarat, “The Emergence and Transformation of Disputes: Naming, Blaming, Claiming,” *Law & Society Review* 15, no. 3/4 (1980): 633-635, <https://doi.org/10.2307/3053505>.

⁹⁶ Kenneth W. Thomas, “Conflict and Negotiation Processes in Organizations,” in *Handbook of Industrial and Organizational Psychology*, vol. 3, ed. Marvin D. Dunnette and Leaetta M. Hough (Palo Alto, CA: Consulting Psychologists Press, 1992), 653.

⁹⁷ Thomas, 658-659.

⁹⁸ Debra Nelson and James Quick, *Organizational Behavior*, 8th ed. (Mason, OH: South-Western Cengage Learning, 2013), 491; Kenneth W. Thomas, “Conflict and Conflict Management” in *Handbook of Industrial and Organizational Psychology*, ed. Marvin D. Dunnette (Chicago: Rand McNally, 1976), 898; Karl Aquino, “Structural and Individual Determinants of Workplace Victimization: The Effects of Hierarchical Status and Conflict Management Style,” *Journal of Management* 26, no. 2 (April 2000): 174, <https://doi.org/10.1177/014920630002600201>.

factors: assertiveness and cooperation. Assertiveness is the level of concern for meeting the employee's own goals, and cooperation is the level of concern for the other party's or organization's goals.

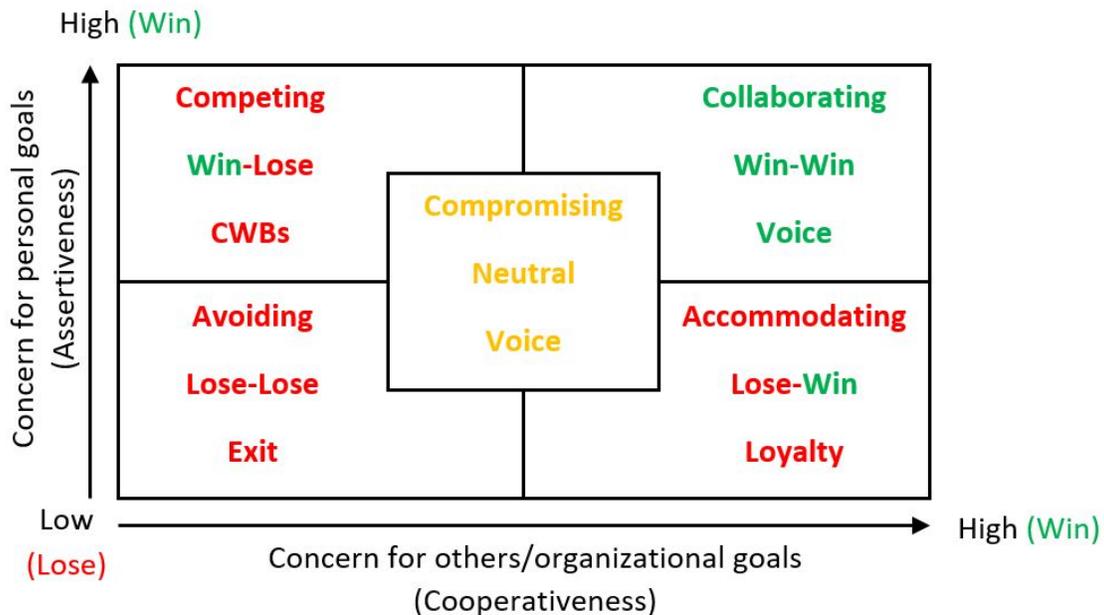


Figure 6. Conflict Management Styles

Per Nelson and Quick:

- Avoiding is when the employee intentionally takes no action to address the conflict or ignores the situation and pretends it does not exist. The avoidance style demonstrates low employee assertiveness and low cooperation. The exit mechanism might be an example of avoidance if the employee did not attempt to resolve the conflict before leaving.
- Accommodating is when the employee disregards their own goals to fulfill the organization's goals and eliminate conflict. Accommodating demonstrates low employee assertiveness and high cooperation. Loyalty is a form of accommodating.

- Competing is when an employee is willing to satisfy their desires at the expense of someone else or the organization. The employee is very assertive and uncooperative. Neglect is a form of competing.
- Compromising is when the employee and other party or organization, usually of relatively equal status or power, each give something. It is not an ideal conflict style, as the relationship between the parties may not improve because of the sacrifice each had to make. Compromising shows mid-level assertiveness and cooperation.
- Collaborating is considered a win-win style because each party is satisfied with the outcome. It requires trust and the sharing of information and ideas from both parties and may lead to improved performance and relationships. Collaborating displays high assertiveness and cooperation. The voice mechanism is an example of both compromising and collaboration.⁹⁹

Individuals usually have a preferred style that can change based on the people involved and the situation.

1. Individual Conflict Management

Conflict is not bad; however, severe escalation disrupts the function of an organization. Dean Pruitt recommends “when it is necessary to take actions that annoy people (e.g., criticism, discipline, and discharge of popular employees), one should strive for legitimacy and the basic elements of fairness.”¹⁰⁰ Essential elements of fairness include “careful fact gathering, consistent criteria, unbiased decision making, and avenues for appeal. The people impacted should have a chance to defend themselves, and the decisions should be fully explained in a way that shows respect for and sensitivity to the target of the

⁹⁹ Nelson and Quick, *Organizational Behavior*, 491-494.

¹⁰⁰ Dean G. Pruitt, “Conflict Escalation in Organizations” in *The Psychology of Conflict and Conflict Management in Organizations*, ed. Carsten K. W. De Dreu and Michele J. Gelfand (New York: Psychology Press, 2008), 257.

action.”¹⁰¹ Fairness can be challenging to obtain in high pressure or time-sensitive situations.

Barry Goldman et al. have noted how supervisors handle conflict in different ways. They use one of six taxonomies when dealing with conflict: advising (facilitation), mediation, adversarial (adjudication, arbitration), autocratic (inquisitorial), providing impetus (motivational) control, and avoidance (ignoring).

¹⁰¹ Pruitt.

Table 1. Six Taxonomies Supervisors Use for Dealing with Conflict.¹⁰²

Taxonomy	Control of Process	Control of Outcome
<p>Advising Supervisor influences process control only to achieve a practical conclusion.</p>	 Employee/Supervisor only when needed	 Employee/Supervisor only when needed
<p>Mediation Supervisor controls the process but not the resolution.</p>	 Supervisor	 Employee
<p>Adversarial Parties to manage the process by listening to each present their case, but the supervisor controls the final decision by issuing an opinion.</p>	 Employee	 Supervisor
<p>Autocratic Supervisor controls both the process and the decision.</p>	 Supervisor	 Supervisor
<p>Motivational Supervisor retains a low level of process and outcome control but provides incentives for the parties to reach an agreement.</p>	 Supervisor	 Supervisor
<p>Avoidance Supervisor does nothing.</p>	 Employee	 Employee

- Advising is when the supervisor influences process control only to achieve a practical conclusion. Some research indicates parties may be willing to relinquish process control under certain conditions such as serious conflicts, the need for a fast resolution, when parties need to maintain status or

¹⁰² Adapted from Goldman et al.

reputation, or when there is a high level of cooperation. Parties may also relinquish decision control if they feel the resolution will be successful.

- Mediation is when the supervisor controls the process but not the resolution.
- Adversarial is when the parties manage the process by listening to each present their case but the supervisor controls the final decision by issuing an opinion.
- Autocratic is when the supervisor controls both the process and the decision.
- Motivation is when the supervisor retains a low level of process and outcome control but provides incentives for the parties to reach an agreement.
- Avoidance is when the supervisor does nothing.¹⁰³

These taxonomies can lead to varying perceptions of procedural, distributive, and interactive justice due to the shift of process control and outcome control between employees and supervisors.

Perceived workplace injustices are a form of conflict. Targets (or victims) of workplace aggression frequently used collaboration to resolve the conflict. Collaboration is usually an effective strategy for long-term conflict but not for targets of workplace aggression. When collaboration did not work, targets of workplace violence tried a range of conflict management styles and most often settled on avoidance and exit.¹⁰⁴ Avoidance, collaboration, and accommodation were ineffective management styles for victims of workplace aggression, particularly those of low hierarchical status.¹⁰⁵ Integration (an assertive management style) and accommodation (a passive management style) both

¹⁰³ Barry M. Goldman et al., "The Role of Third Parties/Mediation in Managing Conflict in Organizations" in *The Psychology of Conflict and Conflict Management in Organizations*, ed. Carsten K. W. De Dreu and Michele J. Gelfand (New York: Psychology Press, 2008), 294-296.

¹⁰⁴ Jana L. Raver and Julian Barling, "Workplace Aggression and Conflict: Constructs, Commonalities, and Challenges for Future Inquiry," in *The Psychology of Conflict and Conflict Management in Organizations*, ed. Carsten K. W. De Dreu and Michele J. Gelfand (New York: Psychology Press, 2008), 229.

¹⁰⁵ Aquino, "Structural and Individual Determinants of Workplace Victimization," 183-185.

appear to increase a low-status employee's chance of being victimized. Potential victimization, in turn, may make them feel competing (CWBs) is the only viable outcome as a compromise does not work when the parties have unequal status.¹⁰⁶ This literature explains why workplace violence victims choose CWBs. With this knowledge, organizations may have the opportunity to intervene before an attack.

2. Organizational Dispute Resolution

Organizational dispute resolution (ODR) systems are “any process identified in organizational policy as a sanctioned means to resolve disputes *within* the organization.”¹⁰⁷ In this research, ODR is synonymous with ADR. Grievance procedures are typically used to describe appeals processes agreed upon by management and unions. The presence or absence of a union is not a factor in this research. In 1995, the U.S. General Accounting Office estimated that “almost all employers with 100 or more employees use one or more ADR approaches.”¹⁰⁸ ADR approaches include negotiation, fact-finding, peer review, mediation (both internal and external), and arbitration.¹⁰⁹ ADR processes can vary as to whether there are formal procedures, the type of complaints eligible for the operation, who can make final decisions, whether parties can have representation, and criteria used to settle disputes. ADR processes may include employees speaking directly with each other, employees presenting their cases to supervisors (open-door policy) with the ability to appeal the decision to higher management, the use of neutral third parties (trained mediators or ombudspersons), and multi-step appeals processes.¹¹⁰

Organizations may choose to adopt ODR systems to reduce turnover or litigation due to conflict, particularly among high-wage and tenure employees. Organizations adopt

¹⁰⁶ Aquino, 190.

¹⁰⁷ Julie B. Olson-Buchanan and Wendy R. Boswell, “Organizational Dispute Resolution Systems,” in *The Psychology of Conflict and Conflict Management in Organizations*, ed. Carsten K. W. De Dreu and Michele J. Gelfand (New York: Psychology Press, 2008), 321.

¹⁰⁸ Bob Sampson and Larry Horinko, *Employment Discrimination: Most Private-Sector Employers Use Alternative Dispute Resolution*, GAO/HEHS-95-150 (Washington, DC: Government Accountability Officer, 1995), 3.

¹⁰⁹ Sampson and Horinko, 7.

¹¹⁰ Olson-Buchanan and Boswell, “Organizational Dispute Resolution Systems,” 324-325.

ODR systems to capitalize on the positive outcomes that accompany practices that encourage the use of voice, productive conflict management, and fair treatment. ODR systems are a common characteristic of high-performance work systems, which “encompass a set of complementary work and HR-related practices aimed at promoting high levels of employee commitment and involvement in the workplace, with the ultimate goal to increase work quality, productivity, and customer responsiveness.”¹¹¹ Increased commitment and involvement are factors in how employees choose to respond to perceived workplace injustice.

A lack of suitable exit options may be a reason for increased use of voice in the form of ODR systems. Other factors may include the organizational culture and norms for voicing grievances. Employees seldom use ODR systems in organizations where voicing grievances are perceived as being viewed in a negative way or as damaging relationships. They also avoid ODR systems in organizations where conflict avoidance is the norm.¹¹² The presence of ODR systems and culture are organizational factors that affect how employees respond to perceived workplace injustice.

Certain features of ODR systems cause higher perceptions of procedural justice: credibility, employee input, familiarity, and the inclusion of neutral third parties. The most critical factor is credibility. Perceived credibility of the procedures affects perceived fairness, which increases the likelihood of ODR system use. Procedures that allow for employees’ input, even if the decision is not what they wanted, are perceived as more fair. Organizations must have systems to ensure employees do not feel like their complaints fall on deaf ears as this exacerbates perceived injustice. Neutral third parties and non-managerial decision-makers increase perceptions of fairness. Balancing consistency and flexibility with employees is an essential factor although the two are opposite characteristics.

The level of organizational communication about ODR systems plays a role in employee usage. If employees are unaware of the system or how to access its components,

¹¹¹ Olson-Buchanan and Boswell, 332.

¹¹² Olson-Buchanan and Boswell, 333-334.

they will not use it or perceive it as fair and available to everyone. Employees may choose to use an ODR system based on the type of conflict, the relationship between the parties involved, their characteristics, and their loyalty to the organization.¹¹³ In order for ODR systems to be effective, employees must perceive them as fair, well-known, and accessible to all.

ODR system outcomes range from unfavorable to neutral to favorable. Most of the analyses focused only on the multi-step option. Organizations that adopt ODR systems are likely to see a positive effect, yet employees who use these systems experience neutral or adverse effects. However, organizations that offer more than one form of ODR may experience an increase in desired individual outcomes, perceptions of fairness, and the effectiveness of the organization. These outcomes may be due to individual differences in conflict management styles and comfort levels with particular ODR system factors. By offering multiple ODR processes to choose from, employees have the freedom to choose the method they perceive as fair for their specific grievance.¹¹⁴ Perceived procedural fairness is an essential step in mitigating grievances.

G. SUMMARY

A comprehensive literature review provides the background for this research. Counterproductive work behaviors can be passive or active. Targets can be individuals, organizations, or both. Employees may target supervisors as individuals and extensions of the organization. Individual and organizational factors influence employee responses to perceived workplace injustices. Different factors motivate specific types of insider attacks; organizations with higher threat levels for these attacks should take note of the differences. Employees experience a grievance (conflict) when they blame the organization (or someone within the organization). Individuals manage conflict differently; therefore, organizations should have multiple, credible, well-known ADR process that allows for employee input and neutral third parties.

¹¹³ Olson-Buchanan and Boswell, 334-337.

¹¹⁴ Olson-Buchanan and Boswell, 337-340.

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III. RESEARCH DESIGN AND GRIEVANCE RESPONSE MODEL

Each of the three research questions is answered using a different research design.

A. HOW DO EMPLOYEES RESPOND TO PERCEIVED WORKPLACE INJUSTICES?

Organizational justice literature frequently references four theories: equity, social exchange, agency, and LMX theory. These theories explain how perceptions of injustice, or inequity, occur based on interactions between employees and organizations. In order to answer this question, a conceptual descriptive model of employee responses to perceived workplace injustices was designed based on ELVN.

1. Equity Theory

Equity theory states that people compare the ratio of their outputs to the inputs of others. The ratio may be higher, lower, or equal. Inequity occurs when the ratio is not equal and causes dissatisfaction.¹¹⁵ The parties will attempt to eliminate the inequity by actually or cognitively altering their inputs and outcomes or those of others, leaving the field, or changing the object of comparison. The higher the inequity, the more distress a person experiences and the harder they will work to restore equity.¹¹⁶ Equity theory may apply to individual employees or an employee and a larger group.

Equity theory is not widely accepted as initially proposed. Huseman, Hatfield, and Miles propose a variation of equity theory called the “equity sensitivity construct.” They propose “individuals react in consistent but individually different ways to both perceived equity *and* inequity because they have different preferences for (i.e., are differentially sensitive to) equity.”¹¹⁷ Leventhal agrees equity theory is not comprehensive enough because it focuses only on the final distribution of rewards and not on allocation

¹¹⁵ J. Stacy Adams, “Inequity in Social Exchange,” *Advances in Experimental Social Psychology* 2 (1965): 280-281.

¹¹⁶ Adams, 283-295.

¹¹⁷ Huseman, Hatfield, and Miles, “A New Perspective on Equity,” 223.

procedures.¹¹⁸ Allocators do not distribute rewards based solely on contribution; they are distributed on need and equality as well.¹¹⁹ Michael Carrell and John Dittrich also express issues with equity theory and propose the fairness model whereby a person compares their inputs and outcomes and the allocation system to an internally derived standard.¹²⁰ Employee perceptions of fairness may not only be based on more than inputs and outputs but also individual sensitivity and allocation of rewards.

2. Social Exchange Theory

Suzanne Masterson et al. applied social exchange theory to organizations as a means of describing relationships among employees, supervisors, and organizations. Social exchange theory goes beyond quantifiable economic exchanges where one party pays another party for goods or services. According to social exchange theory, one party makes an unspecified contribution to another and expects something in return at a later time. The receiver feels obligated to reciprocate. These relationships exist between employees and immediate supervisors as well as employees and the organization.¹²¹ Social exchange theory explains how employees experience perceived injustice when they make contributions but perceive unequal, untimely, or no reciprocation from supervisors or organizations.

3. Agency Theory

Agency and social exchange theory are the basis of the supervisor-employee relationship. Agency theory describes the economic relationship between supervisors (managers) and employees. Supervisors delegate decisions and tasks to employees in return for compensation. This transaction has two risks. The employee's risk depends on how they receive compensation and are affected by circumstances beyond their control. The

¹¹⁸ Leventhal, What Should Be Done with Equity Theory?, 2.

¹¹⁹ Leventhal, 13.

¹²⁰ Michael R. Carrell and John E. Dittrich, "Equity Theory: The Recent Literature, Methodological Considerations, and New Directions," *Academy of Management Review* 3, no. 2 (April 1978): 206.

¹²¹ Suzanne S. Masterson et al., "Integrating Justice and Social Exchange: The Differing Effects of Fair Procedures and Treatment on Work Relationships," *Academy of Management Journal* 43, no. 4 (August 2000): 739-740, <https://doi.org/10.2307/1556364>.

supervisor's risk stems from the employee's incompetence or opportunism. Therefore, the supervisor institutes mechanisms to monitor the employee or base their compensation on their performance.¹²² Managerial trustworthy behavior is "volitional actions and interactions performed by managers that are necessary though not sufficient to engender employees' trust in them."¹²³ Managerial trustworthiness, as perceived by employees, can be divided into five categories: behavioral consistency, behavioral integrity, sharing and delegation of control, communication, and demonstration of concern.¹²⁴ Supervisors and employees have economic and social equities to balance, which influence perceptions of procedural and interactive justice.

4. Leader-Member Exchange Theory

LMX theory describes positive and negative relationships between employees and supervisors. Positive LMXs are seen as informal and built on trust and support. According to Whitener et al., trust is defined by three factors: an expectation the other party will act benevolently, the risk of vulnerability because the other party cannot be forced to act benevolently, and a level of dependency where one party's actions influence the other party's outcome.¹²⁵ Negative LMXs view employee-supervisor relationships as a required interaction, distant, and less supportive.¹²⁶ Perceived organizational support is similar to LMX except the relationship is between the employee and the organization.¹²⁷ While social equity theory broadly describes transactions that occur in relationships, LMX theory applies specifically to the employee and supervisor workplace relationship.

¹²² Ellen M. Whitener et al., "Managers as Initiators of Trust: An Exchange Relationship Framework for Understanding Managerial Trustworthy Behavior," *Academy of Management Review* 23, no. 3 (July 1998): 514-515.

¹²³ Whitener et al., 516.

¹²⁴ Whitener et al.

¹²⁵ Whitener et al., 513.

¹²⁶ Russell Cropanzano, Cynthia A. Prehar, and Peter Y. Chen, "Using Social Exchange Theory to Distinguish Procedural from Interactional Justice," *Group & Organization Management* 27, no. 3 (September 2002): 327-334, <https://doi.org/10.1177/1059601102027003002>; Masterson et al., "Integrating Justice and Social Exchange," 740.

¹²⁷ Masterson et al.

Russell Cropanzano, Cynthia Prehar, and Peter Chen, as well as Masterson et al., conducted studies supporting social exchange theory and LMX as a means to differentiate procedural from interactional justice in the workplace. Social transactions between employees and the organization are related to procedural justice, and transactions between employees and supervisors are related to interactional justice.¹²⁸ This distinction may offer insight into why employees target individuals, particularly supervisors, versus organizations. According to social exchange theory, employees and supervisors' exchanges can be perceived as personal, whereas exchanges with the organization are economic. Employees may perceive a supervisor's actions to be a personal insult rather than a byproduct of the supervisor's role in the organization. Equity, social exchange, agency, and LMX theories provide a psychological and sociological basis for understanding the relationships between employees, supervisors, and organizations.

B. GRIEVANCE RESPONSE MODEL

The goal of this research was to create a conceptual grievance response model to describe how employees respond to perceived workplace injustices. The model provides the opportunity for earlier intervention to prevent insider attacks identified earlier in the MERIT model. The model applies to all types of insider attacks and represents responses insiders use to address perceived workplace injustices (Figure 7). ELVN theory was modified to develop exit, loyalty, voice, and CWBs (ELVC) theory. Neglect was exchanged for CWBs because neglect is a type of CWB, but its definition is too narrow to represent all CWBs adequately.

¹²⁸ Cropanzano, Prehar, and Chen, "Using Social Exchange Theory to Distinguish Procedural from Interactional Justice," 329.

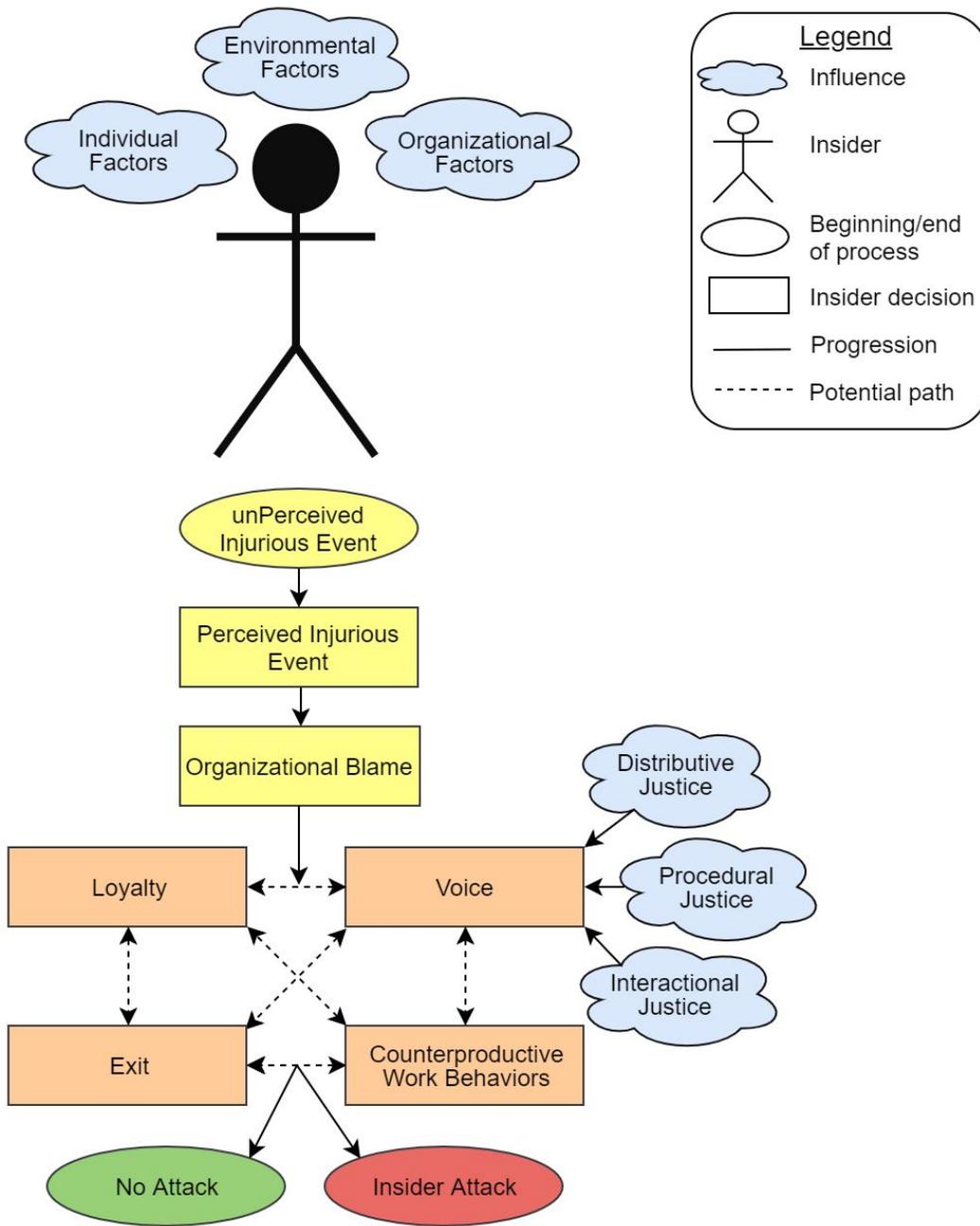


Figure 7. Grievance Response Model

The grievance response model begins with an event. People perceive events differently for many reasons. One insider might view a work location transfer as a positive event, whereas another might see it as an adverse event. The insider who perceives the

transfer as a positive event does not continue through this model because they do not perceive the event as injurious. Numerous individual, situational, and organizational factors influenced whether insiders perceived the event, consciously or subconsciously, as an injurious event. These factors may, but not always, lead to blaming the organization or an individual representing the organization for the perceived injustice. The employee then decides which of the four mechanisms they will use to address the grievance: loyalty, exit, voice, or CWBs. The mechanism chosen may be based on the severity of the perceived injustice, the relationship of the parties involved, the perceived availability and success each mechanism may have, and the employee's preferred conflict management style. If the employee does not assign blame, they do not proceed through this model.

Loyalty describes the situation in which the employee perceives an injustice and blames the organization but decides to remain loyal to it. The employee may do this because they does not perceive the injury to be significant enough to warrant further action; they have a high level of organizational commitment, or they believe no other mechanism will change the outcome. Loyalty can be seen as a form of accommodation because the employee demonstrates low assertiveness and high (accommodation) cooperation. By remaining loyal, the employee sacrifices his or her own goals to prevent conflict with the organization. The employee loses because they does not actively address the perceived injustice and the organization wins because it retains the employee. Loyalty does not have to last forever. An employee may initially decide to remain loyal but later decide they cannot ignore or suppress the feelings of injustice and pursue other mechanisms.

Exit happens when the employee voluntarily leaves the environment they blamed for the perceived injustice. Exiting may mean changing work locations, departments, resigning, or retiring. The critical factor is the *voluntary* exit of the employee, not termination. Exit can be seen as a form of avoidance if the employee does not address the grievance before leaving. The exit option is lose-lose because the employee loses their tenure and the organization loses an employee and incurs the financial cost of replacement. Depending on the situation, exit may be in the best interest of both the employee and the organization if loyalty and voice (in the form of compromise or collaboration) are not possible.

Employees who exit may still commit attacks. For this research, both current and former employees are considered insiders due to their potentially increased trust, knowledge, and access even after they leave. Therefore, an employee may still display loyalty to an organization after leaving by maintaining a high level of respect for the organization. An employee may also use the voice mechanism through external dispute resolution systems or litigation. After voluntarily exiting the organization, employees may choose to display CWBs such as harassment or unauthorized access to facilities or technology systems. Therefore, a standard recommendation from violent and non-violent insider threat prevention literature is for employers to immediately terminate access to systems and facilities when employees leave voluntarily or involuntarily regardless of how amicable the separation appears.¹²⁹

Employees use the voice mechanism by participating in the organization's justice system. When the employee notifies the organization of the perceived injustice, indicates the organization's involvement in the problem, and requests its participation in the solution, these actions exemplify voice. The notification may be formal or informal depending on the organization's policies and procedures for grievance intake. Distributive, procedural, and interactional justice influence the use of voice. Voice can be compromising or collaborative depending on whether—and to what extent—each side concedes their goals to achieve resolution. In both situations, the employee shows some assertiveness toward achieving their own goals as well as concern for the organization's goals (cooperativeness). Voice is a neutral or winning outcome for both the employee and the organization. Compromising is not a bad outcome if the relationships remain positive between the parties. There is a chance one or both parties will stay disgruntled because their goals remain partially unmet. Employees may perceive this disgruntlement as a further injustice.

CWBs are an employee's active or passive behavior that hurt the organization. They range from minor to severe offenses. Attacks are types of CWBs, although for this research, attacks are illustrated as separate events because not all CWBs are attacks. Attacks may be

¹²⁹ Band et al., *Comparing Insider IT Sabotage and Espionage*, viii, 41; Lee and McCrie, *Mass Homicides by Employees in the American Workplace*, 14.

acts of omission or commission. Acts of omission involve a failure to perform mandatory duties, which include behaviors such as failing to report to work on time, complete assigned work, report violations, withdrawal, and neglect. Acts of commission involve active behaviors such as aggression, substance abuse while on duty, bullying, and production deviance. CWBs result from the competing conflict management style because the employee is assertive in achieving their own goals of retaliation while having a low concern (cooperativeness) for the organization's goals. The employee wins by acting out their feelings of perceived injustice, but the organization loses because it is the target of the hurtful actions.

This model does not explicitly categorize conflict management styles or grievance mechanisms as good or bad except for CWBs. Goals and situations differ for employees and organizations. Disgruntled employees and organizations may benefit from the employee exiting rather than remaining and engaging in CWBs. Disgruntled employees may be content with remaining loyal to an organization despite experiencing a perceived injustice. Employees may use multiple mechanisms simultaneously or concurrently depending on the perceived success and repercussions. For example, an employee may choose to use their voice while also displaying CWBs. Another employee may remain loyal initially but later decide to use their voice, then exit the organization and subsequently engage in CWBs such as harassment. Thus, the arrows between the mechanisms are bidirectional.

The time spent on each mechanism may range from minutes to years. Most if not all employees display behaviors, motivations, and risk factors before committing both violent and non-violent insider attacks; however, co-workers may not recognize the warning signs.¹³⁰ Therefore, the model does not show a direct pathway between organizational blame and insider attack. Attack behaviors are a type of CWBs. Thus, CWBs are considered an intermediary, even if brief, step. The organizational response to an employee's chosen grievance mechanism may itself become a perceived injustice if the employee is not satisfied.

¹³⁰ Lee and McCrie, 8; Band et al., viii, 46.

C. WHAT IS THE RELATIONSHIP BETWEEN EMPLOYEE RESPONSES TO PERCEIVED WORKPLACE INJUSTICES AND INSIDER ATTACKS?

The model created to answer the first question is tested using case studies of insider attacks. For violent attacks, the researcher collected original data collected on type III (employee on employee) workplace violence and insider terrorist incidents involving at least one fatality in the United States from 2000 to 2017 (Appendix A). The researcher found the cases on publicly available databases such as Lexis-Nexis and Internet search engines such as Google for primary and secondary source information. There is no database of workplace violence attacks; the United States Department of Labor only keeps total numbers of injuries and homicides.¹³¹ The Global Terrorism Database, publicly available and maintained by the National Consortium for the Study of Terrorism and the Response to Terrorism, was used to identify insider terrorist attacks. The researcher used the following search terms: “employee,” “coworker,” “workplace violence,” “homicide,” “insider,” and “insider attack.”

Case studies were limited to attacks where the motivation appeared to involve an insider’s grievance with one or more individuals representing an organization or the organization itself. Most of the studies in the literature review used surveys to determine how people would hypothetically respond to situations involving perceived injustice. Studying insider attacks eliminates response bias and measures actual behaviors. Workplace violence attacks that appeared to be criminal acts (type I), acts perpetrated by customers (type II), or motivated by domestic disputes (type IV) were not considered. The data points for each insider attack appear in Table 2. The goal is to look for trends among the general insider attack data and compare them to trends (if identified) in violent and non-violent attacks as well as their subtypes.

¹³¹ “Census of Fatal Occupational Injuries (CFOI),” United States Department of Labor, Bureau of Labor Statistics, last modified February 20, 2018, <https://stats.bls.gov/iif/oshcfoi1.htm>.

Table 2. Data Points of Violent Insider Attacks in the United States from 2000–2017

Data Point	Coding
Sub-type	Workplace Violence, Terrorism
Employment status	Current, Resigned, Retired, Fired
If not current, the period between employment and the attack	Days to years
If insider survived the attack	Yes, No (suicide or killed by police)
Reason for grievance	Mistreatment, Performance, Debt
Grievance response mechanism	Exit, Loyalty, Voice, CWBs
Target of the attack	Individual, Organization, Both
Psychiatric or intellectual disability	Yes, No
Criminal history	Yes, No

The violent attack sub-type specifically identifies insider terrorist attacks cases among other workplace violence attacks. The insider’s employment status is recorded to determine whether the insider committed the attack while employed or after they leave the organization. Insiders not employed at the time of the attack were noted as voluntarily (resigned or retired) or involuntarily (fired) separated from the organization. Whether the insider lived through the attack or not was recorded as a potential explanation for lack of data.

The reason for the grievance came from publicly available information from the insider, witnesses, co-workers, and law enforcement. When the sources provided multiple reasons, the researcher only counted the primary one. “Mistreatment” included workplace disputes and allegations of discrimination and harassment. The disputes may be ongoing or occur immediately before the attack. “Performance” included reports of poor performance, counseling by supervisors, poor performance evaluations, and discipline including transfers, demotions, termination. Financial grievances include personal debts that caused the insider stress, garnishment of wages by the employer, and greed. The grievance mechanism was determined by analyzing the insider’s behavior before the attack

to the extent it is known. CWBs were any undesirable work behaviors observed before the attack not including the attack itself. The target was coded as “individual” if the insider appeared to hunt for specific people, “organization” if they did not, and “both” if the victims appeared to be intentional and random.

The presence of psychiatric or intellectual disabilities was coded as “yes” if the condition was diagnosed or reasonably suspected. This data may not be highly accurate as insiders may have been undiagnosed or the people interviewed were not aware of the diagnosis. The researcher did not record specific criminal offenses; the intent was to capture a history of rule-breaking in general. No criminal histories were verified directly with law enforcement. The reliability of this data is also questionable; the people interviewed may not have known about the insider’s criminal history, or the insider engaged in criminal behavior but was not caught, prosecuted, or found guilty.

The data collected is compared to similar data from a case study done by Lee and McCrie, *Mass Homicides by Employees in the American Workplace*.¹³² The researchers studied mass workplace homicides (at least three fatalities) committed by insiders in the United States from 1986 to 2011.¹³³ Lee and McCrie did not identify the events they studied; therefore, some events may appear in this research as well. The comparison identifies similarities and differences in the data coding and findings.

For non-violent attacks, publicly available data was not available at the level of detail needed. Therefore, this section analyzed data from four research papers that conducted case studies on insider attacks. The case studies involved sabotage, IP theft, and fraud in the United States. The data from the violent and non-violent data and their subsets are compared to identify similarities and differences.

¹³² Lee and McCrie, *Mass Homicides by Employees in the American Workplace*, 14.

¹³³ Lee and McCrie, 5.

D. HOW CAN ORGANIZATIONS PREVENT DISGRUNTLED EMPLOYEES FROM COMMITTING ATTACKS?

Using information from the literature review, this section demonstrates how organizations may determine how their employees might react by utilizing employee responses to perceived workplace injustice. With this information, they can evaluate and change organizational policies to encourage positive employee responses in order to prevent insider attacks. This section uses a case study of the Fairfax County local government and Fairfax County Fire and Rescue Department (FCFRD) in Fairfax County, Virginia, to illustrate this process. The FCFRD, like most public safety agencies, is similar to the military in culture and rank structure and different from other county agencies. The FCFRD grievance systems are compared to the United States Marine Corps (USMC) to provide analysis between non-military agencies (Fairfax County Government), paramilitary agencies (FCFRD), and a military branch (USMC).

The case study analyzes how three factors that influence employee responses (cost of exit, cost of voice, and incentives to remain loyal) to perceived workplace injustices (from the model used to describe how do employees respond to perceived workplace injustices) apply to FCFRD employees. It assesses whether the Fairfax County government's grievance systems, as applied within the FCFRD, use best practices for ODR systems identified in the literature review. Last, it provides specific recommendations for improvement.

IV. ANALYSIS OF THE RELATIONSHIP BETWEEN EMPLOYEE RESPONSES AND INSIDER ATTACKS

The researcher encountered two main obstacles to identifying specific employee responses: a lack of data and multiple, contradictory, and missing narratives. Publicly available data was difficult to find. Few insider attack cases received widespread and ongoing media coverage, which limited the amount and depth of data available. In most violent cases when there was no suspect to prosecute because the insider died, in-depth investigations were either not conducted or publicly released. According to a 2004 survey by *CSO Magazine*, the top three reasons organizations do not legally pursue insider attacks are fear of negative publicity, lack of evidence, and the damage sustained was not significant enough to involve law enforcement.¹³⁴ Organizations that conducted internal investigations did not release the findings possibly due to privacy concerns or fear of damage to their image, civil or criminal liability, or that detailing system weaknesses may lead to future attacks.

There are multiple, contradictory, and missing narratives. The people interviewed by reporters provided multiple and sometimes contradictory narratives and had varying perceptions of what led to the attacks. The researcher considered their perspectives and motivations for providing information. The insiders and immediate co-workers died in over half of the violent cases; therefore, the people with first-hand knowledge of the circumstances leading to the attack could not provide their perspective (Figure 8). These obstacles are not unique to this thesis as Lee and McCrie noted insider death during violent attacks as a hindrance in their research as well.¹³⁵ The lack of direct communication from insiders who committed violent attacks created speculation as to the perceived injurious event, grievance, and motivations for the attacks.

¹³⁴ CERT, *CSO Magazine*, and United States Secret Service, *2004 E-Crime Watch Survey* (Framington, MA: *CSO Magazine*), 2004, 18, https://resources.sei.cmu.edu/asset_files/WhitePaper/2004_019_001_53391.pdf.

¹³⁵ Lee and McCrie, *Mass Homicides by Employees in the American Workplace*, 17.

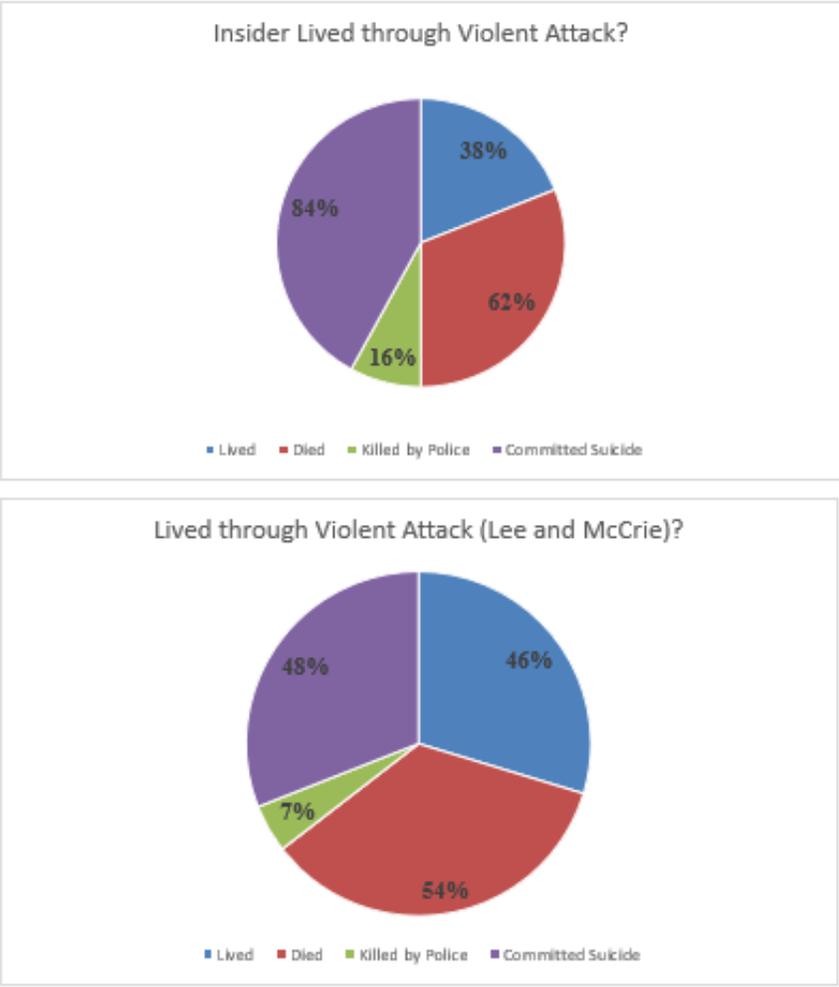


Figure 8. Comparison between Violent Insider Data and Lee and McCrie’s Study on Mass Workplace Homicide Committed by Employees¹³⁶

A few insiders left manifestos explaining their actions, one of which was Christopher Dorner, formerly of the Los Angeles Police Department. Dorner left a detailed 11-page manifesto of his grievances and attempted to use the voice option before the attack and subsequent suicide.¹³⁷ Insider communication was less of a limitation for non-violent attacks since most of the insiders were still alive. Non-violent insiders told their stories during investigations and legal proceedings.

¹³⁶ Compiled from data in Appendix A; Adapted from Lee and McCrie, 16.

¹³⁷ Christopher Dorner, “Manifesto,” KPBS, accessed October 13, 2018, <https://www.kpbs.org/documents/2013/feb/07/christopher-dorners-manifesto/>.

A. VIOLENT ATTACK DATA AND ANALYSIS

The researcher identified a total of 90 violent insider attack cases: 87 workplace violence and three terrorism. The terrorism cases are included in the workplace violence data because they are a form of workplace violence (Appendix B). The terrorism data was also analyzed separately (Appendix C). Then the researcher compared the workplace violence and terrorism data to Lee and McCrie's mass workplace homicide study (Appendix D).

Data from all three studies provide insight into violent attackers; however, the data do not indicate any relationship or correlation between employee responses and insider attacks. Specific information on which responses attackers used was not available, except exit. Insiders who exited the organization were easy to identify. Although exit is voluntary, the researcher documented insiders who were forced to leave. The researcher assumed that employers terminated the insiders for committing CWBs. Insiders may have used additional response mechanisms that were unreported.

The period between the grievance and the attack may indicate loyalty; however, it is unknown if CWBs occurred during that time. Insiders may have been holding grudges but not taking action. They may have exhibited CWBs co-workers did not see or report. In the absence of communication from insiders, it was undetermined if they voiced their grievance to their organization, what procedures they used, or their perceptions of distributive, procedural, and interactional justice.

The organization did not actively employ almost half of the insiders at the time of the act (Figure 9). Some attacks occurred almost immediately after separation, others years later (Figure 10). The studies prove that current and former employees are threats to the organization and remain so years after exiting. The data support the removal of insider access to the organization upon exit immediately, regardless of why they leave.

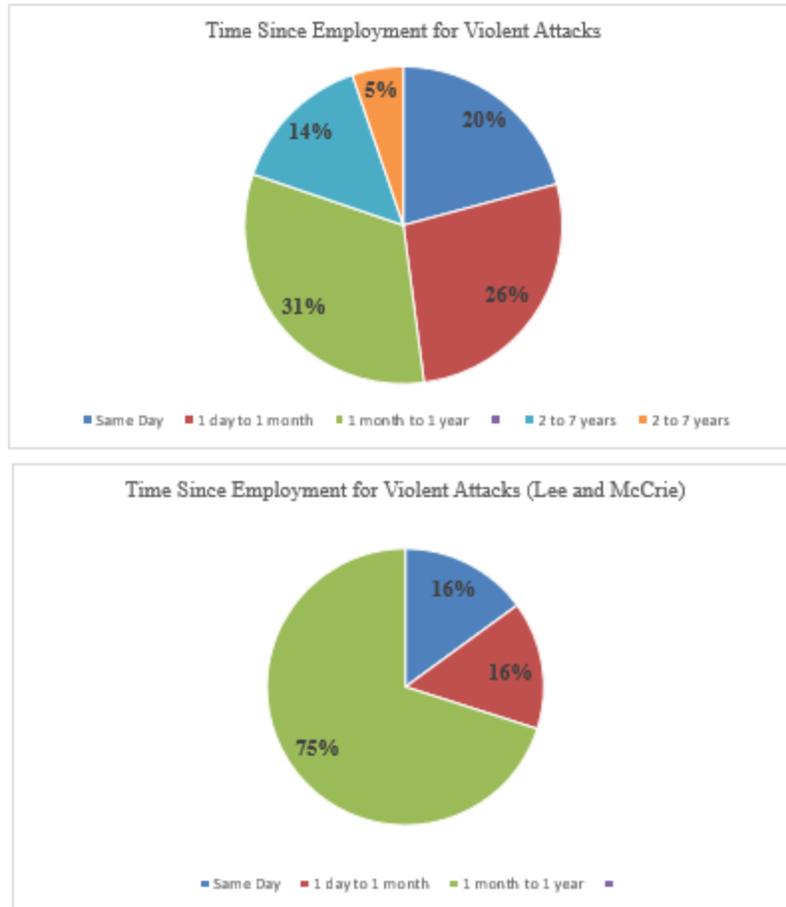


Figure 9. Comparison between Violent Insider Data and Lee and McCrie's Study on Mass Workplace Homicide Committed by Employees.¹³⁸

¹³⁸ Compiled from data in Appendix A; Adapted from Lee and McCrie, Mass Homicides by Employees in the American Workplace, 17.



Figure 10. Comparison between Violent Insider Data and Lee and McCrie's Study on Mass Workplace Homicide Committed by Employees.¹³⁹

The most common perceived workplace injustices are related to mistreatment, performance, or financial difficulties such as garnished wages (Figure 11). In violent insider attack cases, economic grievances were due to wage garnishment. The most common grievance was mistreatment, demonstrating the powerful influence of perceived interactional injustice. Lee and McCrie noted revenge or anger as motivation in 89% of the cases.¹⁴⁰ Revenge correlates with social equity theory; employees use revenge to restore equity. Insiders may experience multiple grievances and motivations. The lack of specific data and the inability to speak to the insiders make determining proximate and root causes difficult.

¹³⁹ Compiled from data in Appendix A; Adapted from Lee and McCrie, 17.

¹⁴⁰ Lee and McCrie, 17.

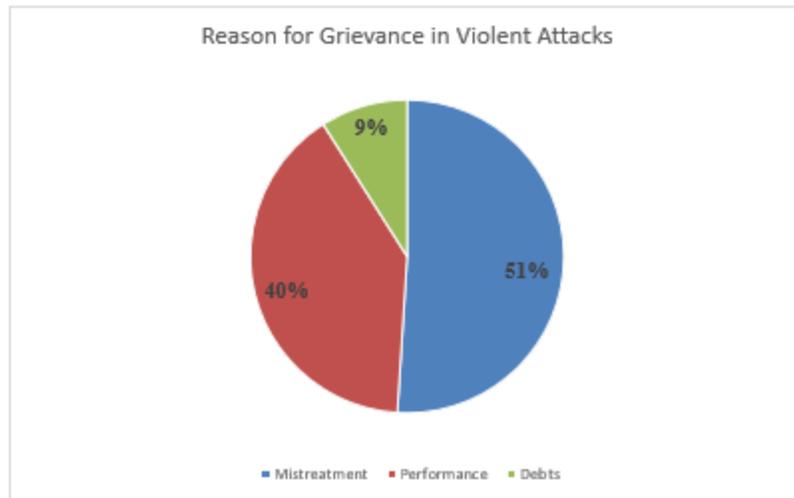


Figure 11. Reasons for Grievances from Violent Insider Data¹⁴¹

In both studies, over half of the targets were individuals (Figure 12). Lee and McCrie noted that two-thirds of the individual attacks were against supervisors. Supervisors represent procedural and interactional justice as described in agency and social exchange theory. They are judged as extensions of the organization and may be blamed (targeted) for policies and decisions beyond their control. Employees may also hold them responsible for distributive justice. Supervisors may represent an individual and organizational target.

¹⁴¹ Compiled from data in Appendix A.

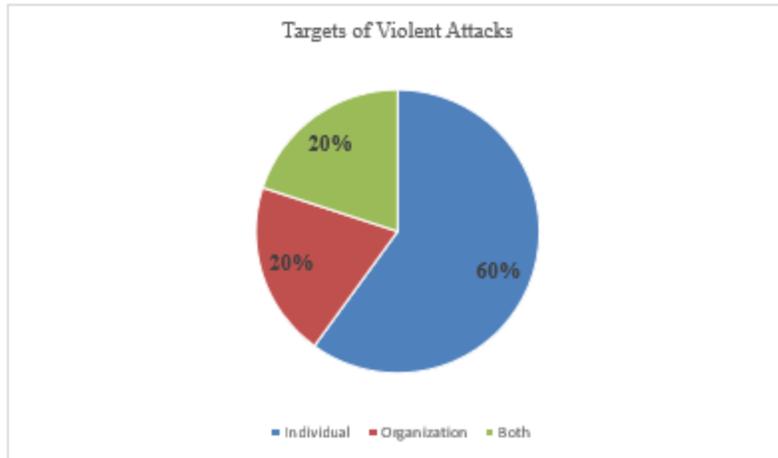


Figure 12. Targets of Violent Insider Attacks from Violent Insider Data¹⁴²

According to both studies, fewer than one-third of insiders had psychiatric issues, intellectual disabilities, or criminal histories (Figures 13 and 14). Organizations cannot eliminate insider threats by not hiring people with mental illness or criminal histories; focusing on data points such as these distract organizations from recognizing CWBs that may lead to attacks.

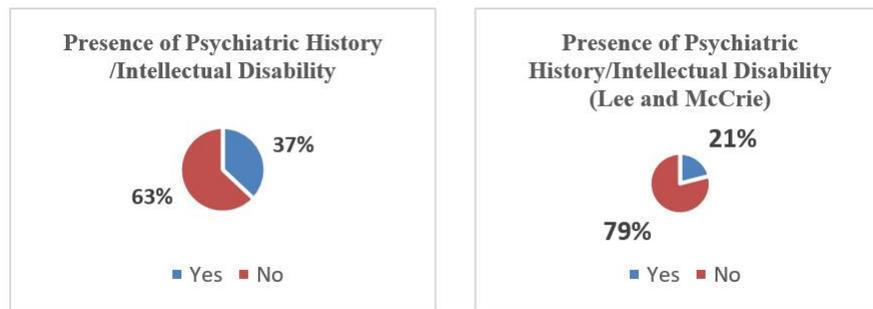


Figure 13. Comparison between Violent Insider Data and Lee and McCrie's Study on Mass Workplace Homicide Committed by Employees.¹⁴³

¹⁴² Compiled from data in Appendix A.

¹⁴³ Compiled from data in Appendix A; Adapted from Lee and McCrie, 17.



Figure 14. Comparison between Violent Insider Data and Lee and McCrie's Study on Mass Workplace Homicide Committed by Employees.¹⁴⁴

B. NON-VIOLENT ATTACK DATA AND ANALYSIS

Non-violent cases were more difficult to identify using publicly available sources potentially due to a lack of media attention. Therefore, the researcher analyzed four research studies conducted by CERT that contained many of the same data points. The studies focused on critical infrastructure computer system sabotage and illegal cyber activity in the banking, finance, government, information technology, and telecommunications sectors (Appendix E).¹⁴⁵ The cases occurred during the late 1990s to early 2000s and involved fraud, theft IP and confidential information, and sabotage. Non-violent insider attacks were carried out by a combination of current and former employees. In two studies, the organization did not employ almost half of the insiders when they committed the attacks, and they had terminated one-third to one-half of the unemployed insiders (Figures 15 and 16). These results are similar to the violent cases, emphasizing the need to define former employees as potential insider threats. Approximately one-third had

¹⁴⁴ Compiled from data in Appendix A; Adapted from Lee and McCrie, 13.

¹⁴⁵ Michelle Keeney et al., *Insider Threat Study: Computer System Sabotage in Critical Infrastructure Sectors* (Pittsburgh, PA: Carnegie Mellon University, May 2005), https://resources.sei.cmu.edu/asset_files/SpecialReport/2005_003_001_51946.pdf; Marisa Reddy Randazzo et al., *Insider Threat Study: Illicit Cyber Activity in the Banking and Finance Sector* (Pittsburgh, PA: Carnegie Mellon University, June 2005), https://resources.sei.cmu.edu/asset_files/TechnicalReport/2005_005_001_14420.pdf; Eileen Kowalski, Dawn Cappelli and Andrew Moore, *Insider Threat Study: Illicit Cyber Activity in the Information Technology and Telecommunications Sector* (Pittsburgh, PA: Carnegie Mellon University, January 2008) (<http://www.dtic.mil/dtic/tr/fulltext/u2/a638653.pdf>); Eileen Kowalski et al., *Insider Threat Study: Illicit Cyber Activity in the Government Sector* (Pittsburgh, PA: Carnegie Mellon University, January 2008), <http://www.dtic.mil/dtic/tr/fulltext/u2/a638652.pdf>.

a criminal history (Figure 17). Researchers did not indicate if the insiders had a psychiatric history.

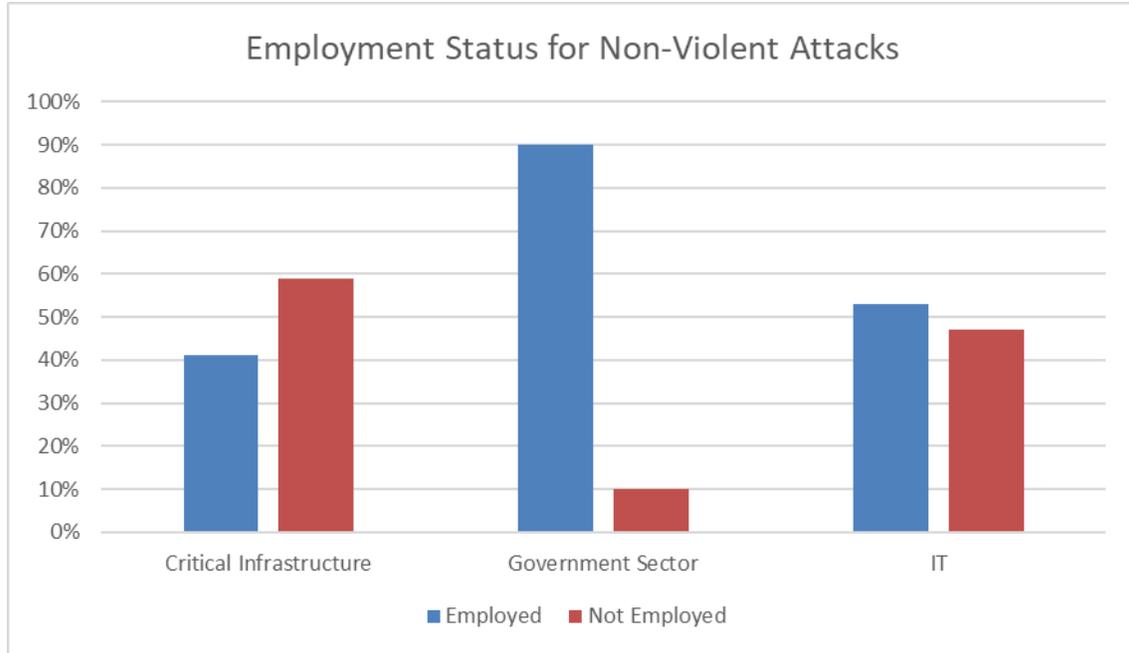


Figure 15. Comparison of Non-violent Insider Attack Data from Four CERT Studies.¹⁴⁶

¹⁴⁶ Adapted from Keeney et al.; Randazzo et al.; Kowalski, Cappelli, and Moore; Kowalski et al.

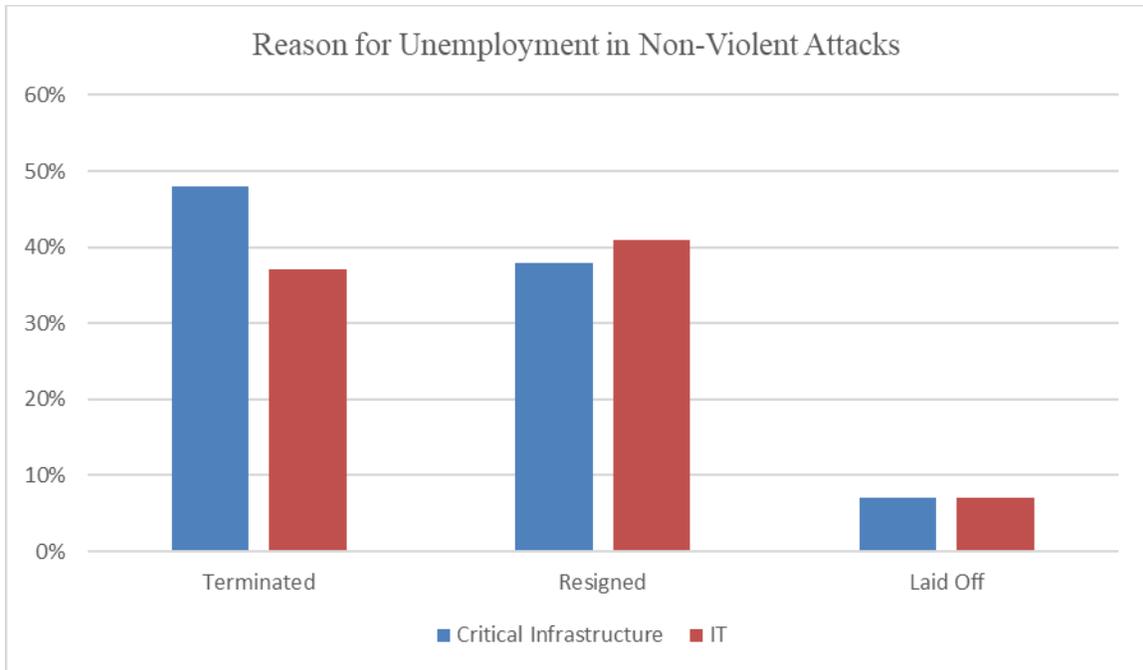


Figure 16. Comparison of Non-violent Insider Attack Data from Four CERT Studies.¹⁴⁷

¹⁴⁷ Adapted from Keeney et al.; Randazzo et al.; Kowalski, Cappelli, and Moore; Kowalski et al.

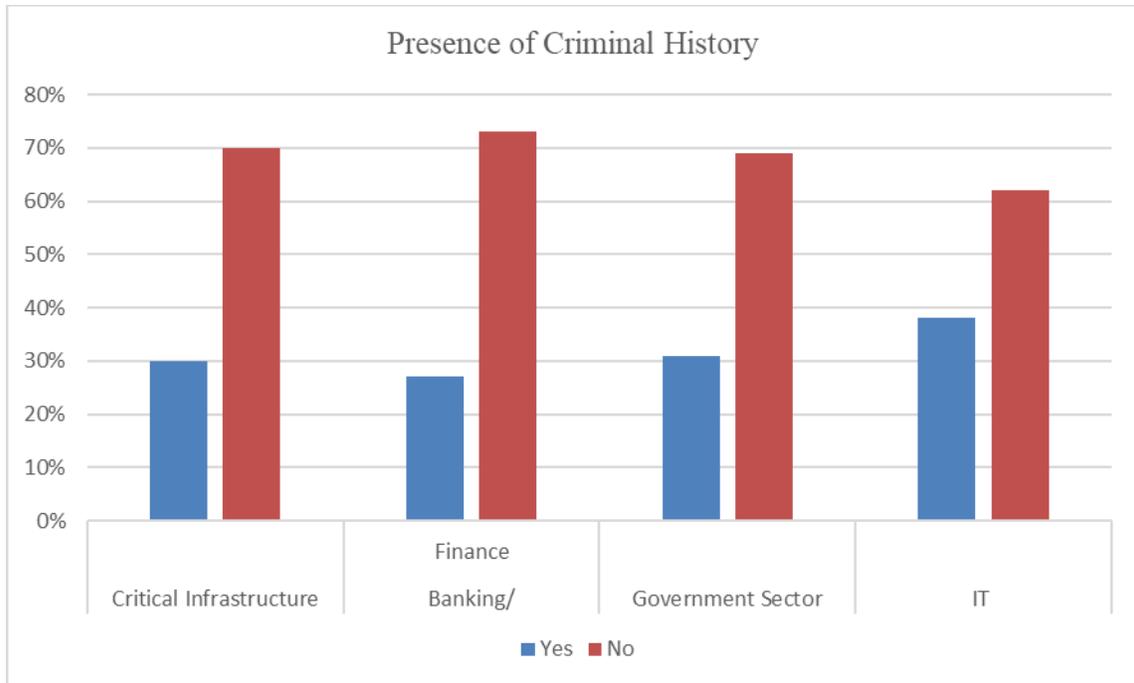


Figure 17. Comparison of Non-violent Insider Attack Data from Four CERT Studies.¹⁴⁸

Grievances arose from both mistreatment and performance in approximately half of the cases depending on the field of study (Figure 18). These numbers are similar to the violent case studies. Additional motivations varied in the non-violent cases. Financial motivations were the highest (81%) in the banking and finance industries. Revenge was a motivation in all four studies and the highest in critical infrastructure and IT industries (Figure 19). Revenge may be related to CWBs noticed by supervisors. The critical infrastructure and IT industries had the highest percentage of CWBs noticed by supervisors (97% and 30%) and also the highest percentage of consequences (74% and 70%) (Figure 20). The recognition and consequences of CWBs could be a motivation for revenge (Figure 21).

¹⁴⁸ Adapted from Keeney et al.; Randazzo et al.; Kowalski, Cappelli, and Moore; Kowalski et al.

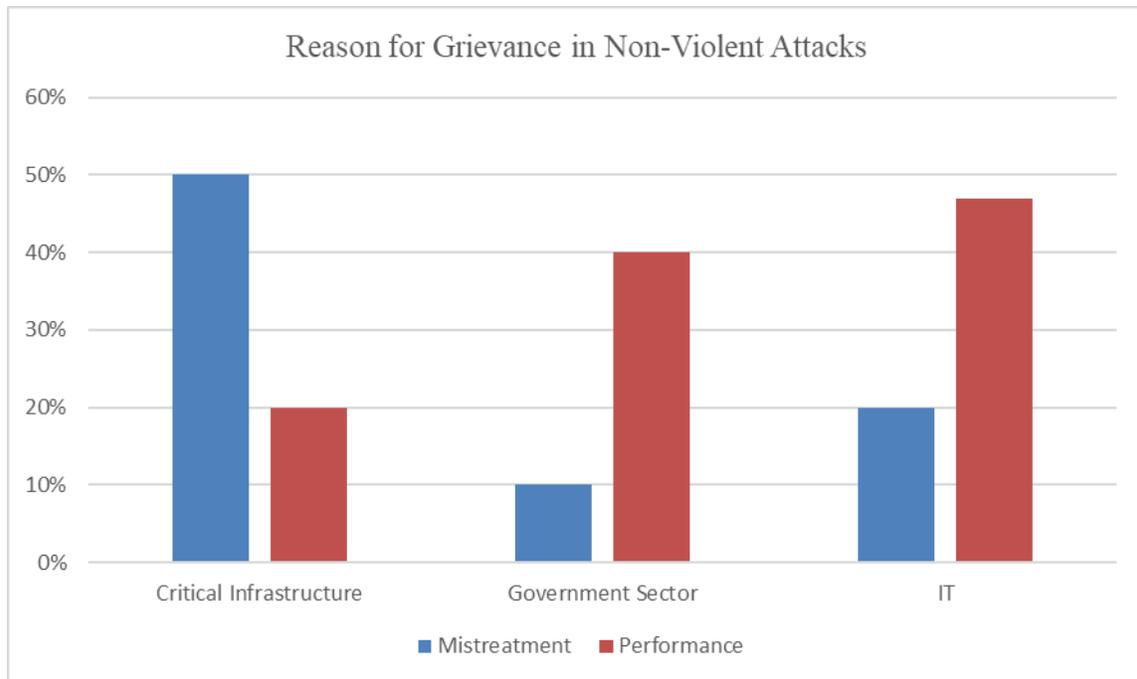


Figure 18. Comparison of Non-violent Insider Attack Data from Four CERT Studies.¹⁴⁹

¹⁴⁹ Adapted from Keeney et al.; Randazzo et al.; Kowalski, Cappelli, and Moore; Kowalski et al.

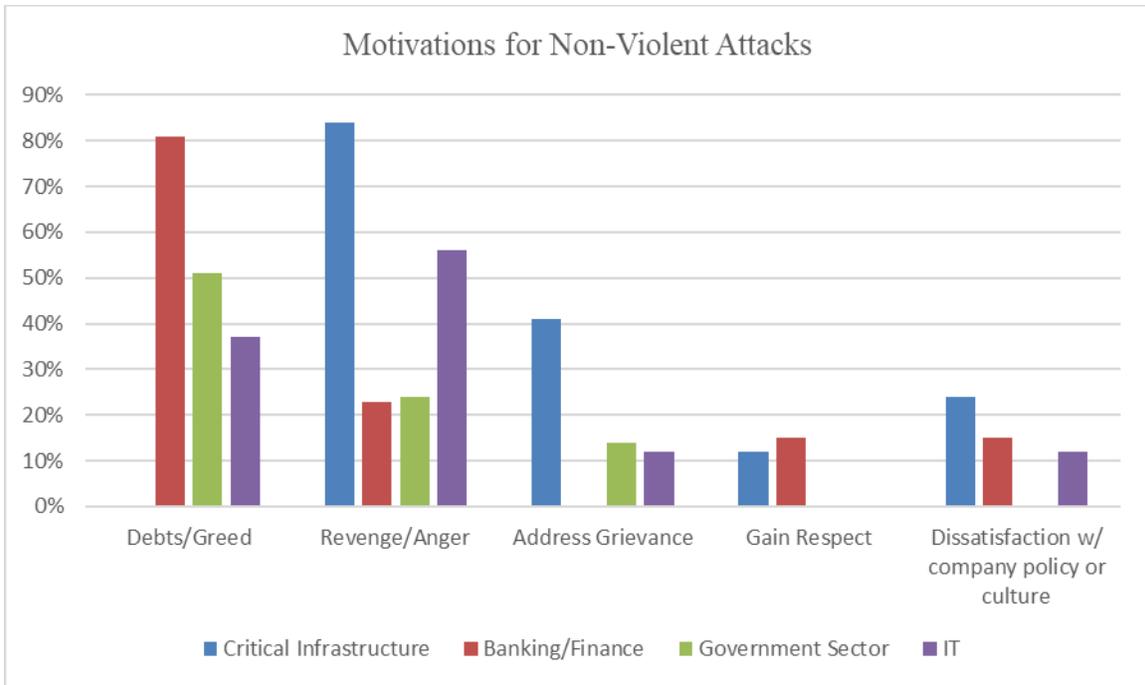


Figure 19. Comparison of Non-violent Insider Attack Data from Four CERT Studies.¹⁵⁰

¹⁵⁰ Adapted from Keeney et al.; Randazzo et al.; Kowalski, Cappelli, and Moore; Kowalski et al.

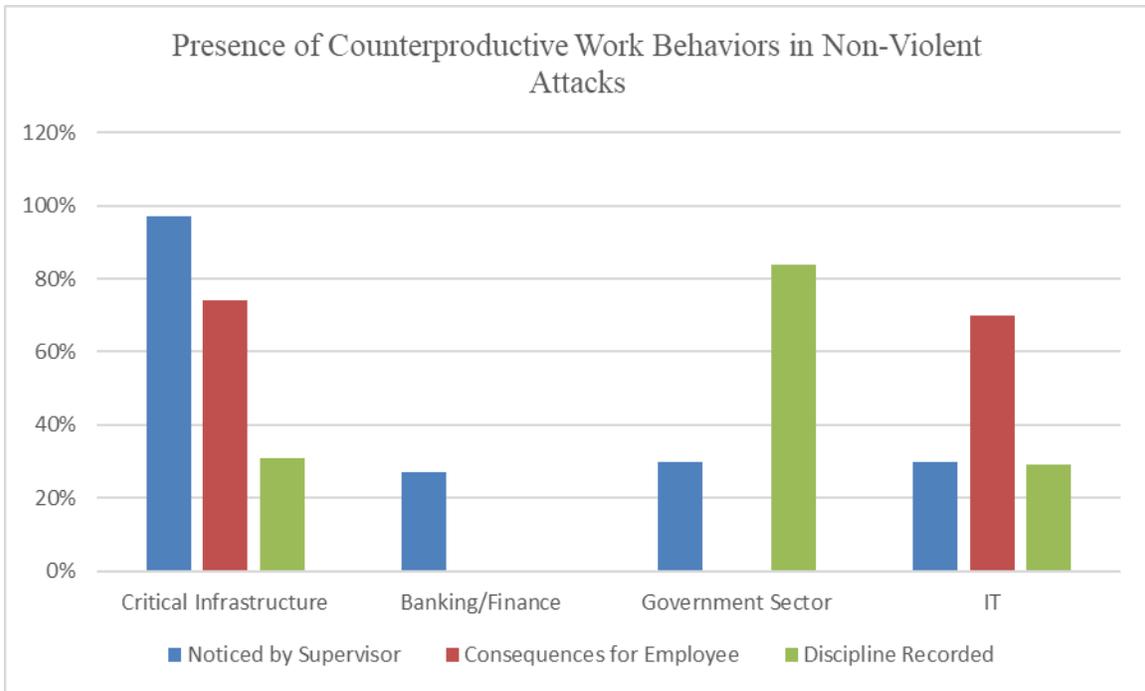


Figure 20. Comparison of Non-violent Insider Attack Data from Four CERT Studies.¹⁵¹

¹⁵¹ Adapted from Keeney et al.; Randazzo et al.; Kowalski, Cappelli, and Moore; Kowalski et al.

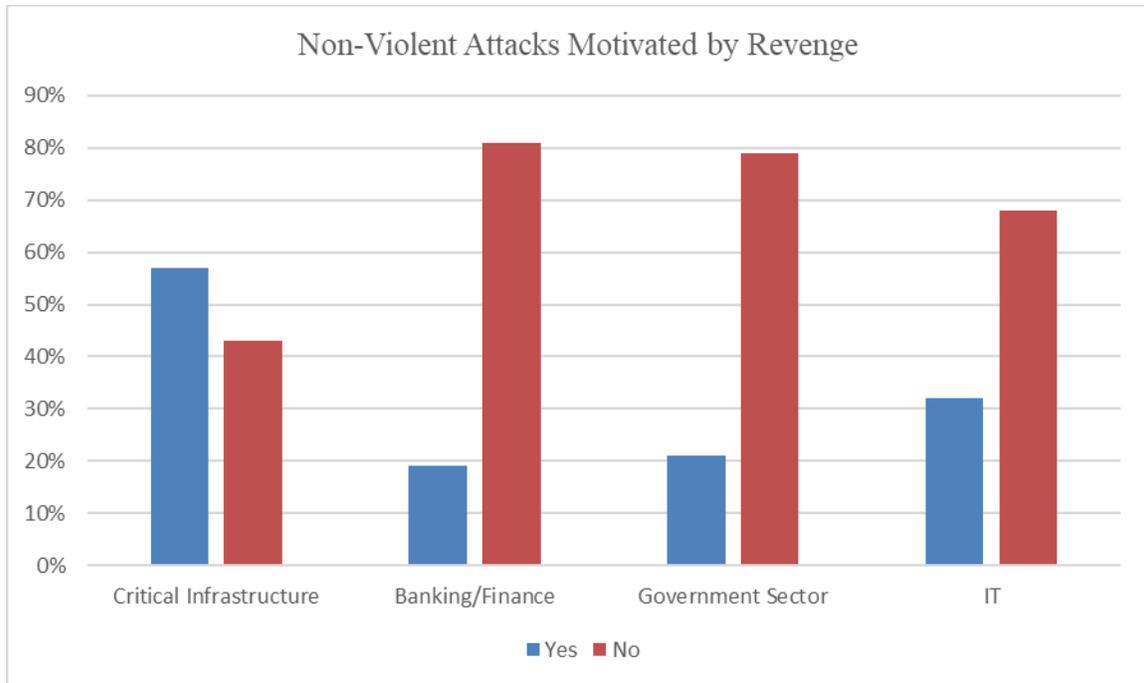


Figure 21. Comparison of Non-violent Insider Attack Data from Four CERT Studies.¹⁵²

C. SUMMARY

The unavailability of specific data was an obstacle for violent and non-violent cases. Although the data needed to correlate specific employee responses to perceived workplace injustices with insider attacks was not available, the analysis of the available data has value. The violent and non-violent attack data emphasizes the need for organizations to immediately remove all physical and cyber access from employees who leave voluntarily and involuntarily.

The most common grievances are related to mistreatment and performance. In both violent and non-violent attacks, half of the insider’s perceived injustice appears to have stemmed from mistreatment. Performance issues accounted for 20–47% of grievances. Mistreatment may be related to social equity imbalances while performance may be related to a more economical and direct imbalance of expectations and contributions. No violent

¹⁵² Adapted from Keeney et al.; Randazzo et al.; Kowalski, Cappelli, and Moore; Kowalski et al.

attacks appeared to be committed for financial gain, but 9% were related to mounting debts. Overall, non-violent attacks were motivated by financial gain (37–81%), more often by greed than debt. Revenge, a means of restoring equity, was a stronger motivator in violent (89%) and non-violent attacks (23–84%).

For violent attacks, there is no data on how often supervisors noted CWBs or how often co-workers perceived the insider as disgruntled. For non-violent attacks, a broad range of CWBs (27–97%) had been observed. Co-workers perceived 19–57% of the insiders as disgruntled. Two reasons explain this: co-workers and supervisors perceive insider behavior differently. What some people find as concerning behavior, others might consider appropriate or as part of the insider's unique personality. The second reason may be related to the timing of these questions. Employees interviewed after the attack may, in hindsight, identify behaviors as CWBs when they did not consider them as such beforehand.

Behaviors are stronger indicators of a threat than criminal or psychiatric histories. The absence of a criminal history does not mean the insider will not commit an attack. The presence of a criminal history may be a concern for future illegal behavior.

V. FAIRFAX COUNTY AND RESCUE DEPARTMENT CASE STUDY: ACHIEVING PERCEIVED FAIRNESS

The grievance response model is a descriptive, not predictive, model. The model may be used as a guide for organizations to identify what options employees may be more likely to use. The feasibility of the ELVC will differ by organization and employee. Organizations should be aware of this and encourage employees to use grievance response options and conflict management styles that result in positive outcomes for both the insider and the organization, such as voice as opposed to CWBs. Organizations should consider the following questions:

- Is exit a viable option for employees experiencing a perceived injustice?
 - Can employees easily exit and maintain a similar status, pay, retirement, and benefits package?
- Is loyalty rewarded?
- Are systems in place for employees to voice grievances?
 - How many are there?
 - How well known are they to supervisors and employees? How accessible are they?
 - Is there an option to involve a neutral third party?
 - Are there perceived repercussions for voicing grievances?
- Are CWBs tolerated?

The FCFRD case study demonstrates how organizations can use information from the literature review, grievance response model, and lessons learned from the data analysis to prevent insider attacks. First, the researcher describes the culture of FCFRD as it relates to the feasibility of ELVC. Next, the researcher reviews the Fairfax County government

grievance procedures and their application within FCFRD. Then, the study explains the ADR system and its usage. Then the researcher compares FCFRD procedures to USMC procedures because the organizations have similar cultures. Finally, the researcher presents recommendations for FCFRD policy changes.

A. EXIT

FCFRD is located in Fairfax County, Virginia, and employs approximately 1,400 uniformed personnel and 180 civilian personnel.¹⁵³ Its culture and rank structure is similar to the military. The cost of exit is high due to hiring procedures, pay, and retirement. New hires can only enter at the rank of recruit firefighter, assistant fire chief, or fire chief. All other positions within the department require candidates to hold the previous rank at the time of application. Figure 22 shows the rank structure. Lieutenants are small-unit leaders of specialized apparatus; not every firefighter operates under a lieutenant's command. All firefighters are under a captain's command.

¹⁵³ "Organizational Information," Fairfax County Fire and Rescue Department, accessed October 13, 2018, <https://www.fairfaxcounty.gov/fire-ems/organizational-information>.

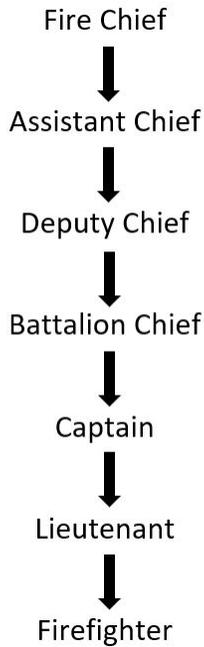


Figure 22. FCFRD Rank Structure

All employees, except assistant fire chief and fire chief, must complete FCFRD’s 24–26-week recruit academy regardless of their previous certifications (a common practice in the fire service). Certifications can vary from state to state and departments want to train personnel on their own specific operational and administrative standards, policies, procedures, cultures, values, missions, and visions. FCFRD is the largest fire department in the northern Virginia region. The median salaries for firefighters (\$73,179) and front-line supervisors (\$88,174) are higher than the state medians (\$50,160 and \$81,520, respectively).¹⁵⁴ Firefighters exiting FCFRD will most likely experience a pay cut; supervisors who exit will experience dramatic pay cuts if they have to start over as a recruit firefighter.

¹⁵⁴ “Fairfax County Career Pages: Firefighter/EMT,” Government Jobs, accessed October 14, 2018, <https://www.governmentjobs.com/careers/fairfaxcounty/jobs/1945898/firefighter-emt>; “Fairfax County Career Pages: Fire Lieutenant,” Government Jobs, accessed October 14, 2018, <https://www.governmentjobs.com/careers/fairfaxcounty/classspecs?keywords=fire%20lieutenant>; Andy Kiersz, “How Much Firefighters Are Paid in Every US State,” Business Insider, last modified July 30, 2018, <https://www.businessinsider.com/firefighter-salary-every-us-state-2018-5>.

Fairfax County has a retirement system that is not transferable to the Virginia Retirement System used by other localities. Employees must consider the implications of having to start over in a different retirement system. An employee who is considering exit must decide whether they are willing to lose their rank, tenure, pay, benefits, and retirement by starting over in another department as a recruit firefighter. Exit may require relocation and attending another physically and mentally challenging recruit academy. The cost of exit is higher in FCFRD than it is in other county agencies that do not have these unique constraints.

B. LOYALTY

Employees who perceived injustice can choose to remain loyal and retain their rank, pay, tenure, and possible future promotions. The Public Safety Uniformed Retirement System rewards loyalty through increased benefits based on service time. Fairfax County government rewards loyalty, measured by service time, with increased sick and annual leave accumulations after three and 15 years of service.¹⁵⁵ FCFRD issues length-of-service awards based on time in service.¹⁵⁶ Promotions can be viewed as a reward for loyalty because all ranks, except assistant chiefs and the fire chief, require time in service. The only way to get promoted is to maintain a record free of major offenses, meet the service time requirements of the position, and score high on examinations. If the employee cannot forgive the perceived injustice, they may become frustrated and eventually engage in CWBs. Loyalty does not rectify perceived injustices. If the injustice affects more than one employee, then remaining loyal does not correct the problem for other employees and the organization.

C. VOICE

Within the Fairfax County government, employees have multiple avenues for addressing grievances via the voice response mechanism. The appropriateness of the

¹⁵⁵ County of Fairfax, *Leave*, Personnel Regulations Chapter 10 (Fairfax, VA; Human Resources, December 5, 2017), 10-3, <https://www.fairfaxcounty.gov/hr/sites/hr/files/assets/documents/hr/chap10.pdf>.

¹⁵⁶ County of Fairfax, 10-20.

avenue depends on the type of grievance. The avenues are employee groups, the Office for Human Rights and Equity Programs, the Office for ADR, and the county's grievance procedure that involves the employee's department, Fairfax County Human Resources (HR), and the Civil Service Commission.¹⁵⁷ Avenues appropriate for each type of grievance are shown in Figure 23.

¹⁵⁷ "Quick Guide to Fairfax County Employee Resources," Fairfax County Government, accessed October 14, 2018, <http://fairfaxnet.fairfaxcounty.gov/Dept/CSC/Agency%20Documents/Quick%20Guide%20to%20County%20Resources.pdf>.

Quick Guide to Fairfax County Employee Resources



Figure 23. Quick Guide to Fairfax County Employee Resources.¹⁵⁸

The goal of the grievance process “is to provide a fair, detailed process whereby employees may voice complaints concerning issues related to their employment experience and/or circumstance with the County. The objective is to improve employee-management

¹⁵⁸ Source: Fairfax County Government.

relations through a prompt and fair method of resolving problems.”¹⁵⁹ Complaints fall into one of three categories:

1. grievable, with a binding decision from a hearing panel of the Civil Service Commission
2. nongrievable but eligible for a hearing and an advisory decision from a hearing officer appointed by the chair of the Civil Service Commission
3. nongrievable with no hearing.¹⁶⁰

The grievance steps are outlined in Figure 24.

¹⁵⁹ County of Fairfax, *Grievance Procedures*, Personnel Regulations Chapter 17 (Fairfax, VA; Human Resources, December 5, 2017), <https://www.fairfaxcounty.gov/hr/sites/hr/files/assests/files/documents/hr/chap17.pdf>, 17-1.

¹⁶⁰ County of Fairfax, *Grievance Procedures*, Personnel Regulations Chapter 17 (Fairfax, VA; Human Resources, December 5, 2017), <https://www.fairfaxcounty.gov/hr/sites/hr/files/assests/files/documents/hr/chap17.pdf>, 17-1-3.

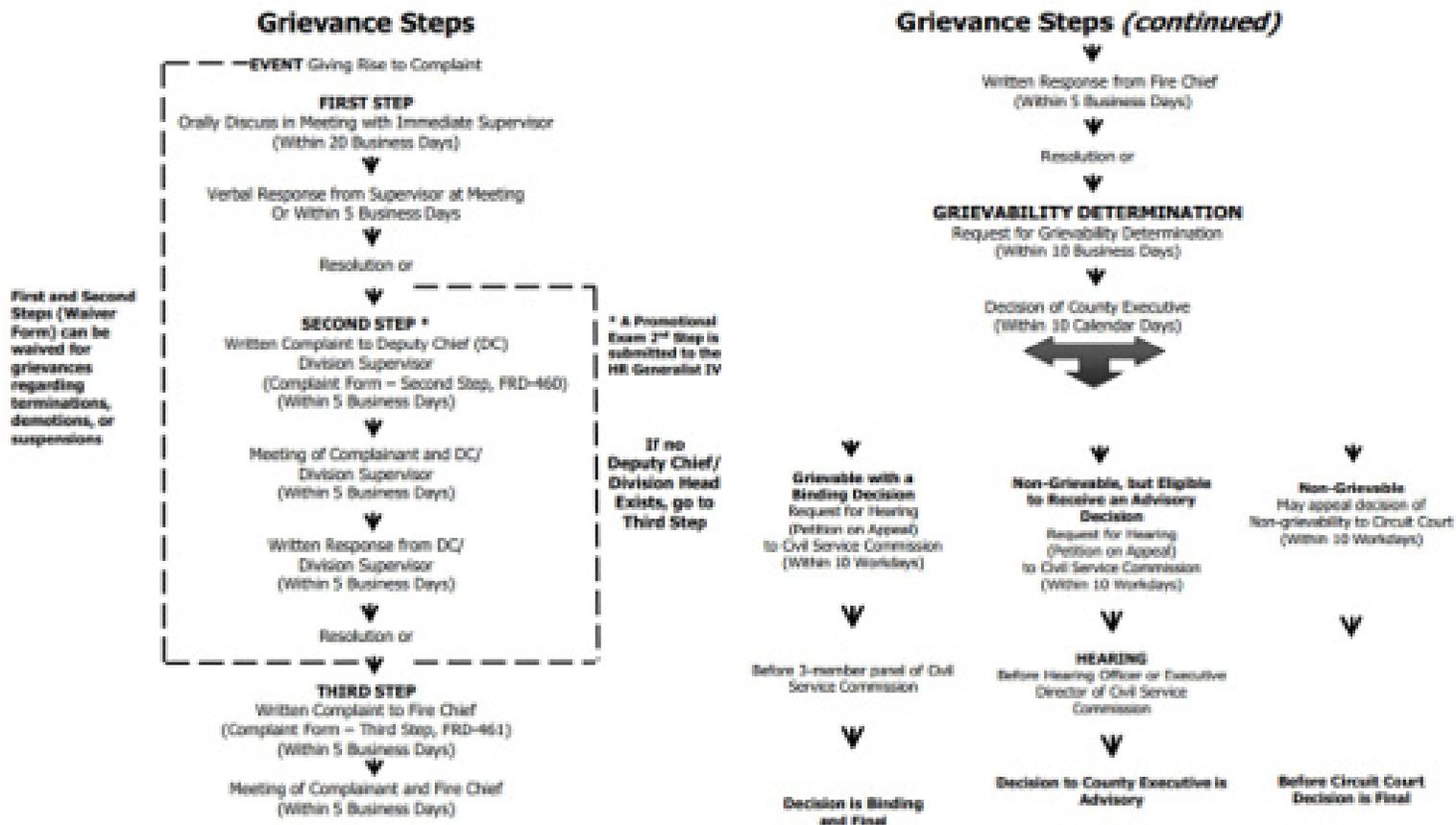


Figure 24. FCFRD Grievance Steps based on Fairfax County Government Personnel Regulations Chapter 17.¹⁶¹

¹⁶¹ Fairfax County Fire and Rescue Department, *Grievances*, Standard Operating Procedure 02.07.01 (Fairfax, VA: Fairfax County Fire and Rescue Department, 2018), <https://firenet/ffire/docs/sops/pdf/02.07.01.sop.pdf>.

The grievance procedures are consistent and transparent to all employees. The process is straightforward and offers employees opportunities for appeals. However, FCFRD's application of the process may create a perception of unfairness. Historically, FCFRD immediate supervisors (lieutenants, captains) do not interact directly with FCFRD HR. Those interactions usually occur at the deputy, assistant, and fire chief levels. The lack of interaction at lower supervisory levels may be due to the limited number of HR personnel compared to the number of FCFRD immediate supervisors.

The unwritten FCFRD process is when the lieutenant or captain informs their supervisor of the recommendation for discipline. Discipline ascends through the chain of command to the assistant chief. The assistant chief consults HR on unique situations or situations warranting severe discipline. The deputy fire chief reviews and approves, modifies, or denies informal warnings. Assistant fire chiefs approve formal warnings. The decision is passed back down through the chain of command for the immediate supervisor to administer. If the employee decides to grieve the decision, the same people who approved the discipline adjudicate the first two steps. Grievances, like discipline, also ascend through the chain of command. The assistant chief issues the decision and returns it for the immediate supervisor (step one) or the deputy chief (step two) to administer. By step two, the chain of command has already reviewed the situation three times if it was related to discipline and twice if discipline was not involved.

An alternative to the grievance system is the ADR program. ADR's vision is to create "a community in Fairfax County Government where all workplace cultures are conflict competent and employees are encouraged to learn through collaborative problem solving skills."¹⁶² Fairfax County government's ADR program is an integrated conflict management system. Integrated conflict management systems use "a systematic approach

¹⁶² "ADR Homepage," Fairfax County Government, accessed October 14, 2018, <http://fairfaxnet.fairfaxcounty.gov/Dept/CSC/Pages/ADR-Home-Page.aspx>.

to preventing, managing, and resolving conflict that focuses on the causes of conflict within the organization.”¹⁶³ Organizations that have integrated conflict management systems:

- encourage all personnel to use the voice option early
- incorporate collaborative problem-solving with the organization’s culture
- encourage direct negotiation between personnel experiencing conflict
- align conflict management mechanisms with each other and the organization’s mission, vision, and values
- ensure everyone understands the mechanisms available
- establishes mechanisms that are flexible and user-friendly¹⁶⁴

ADR provides neutral third parties for dispute management, collaborative and respectful techniques to address conflicts, and a safe and confidential environment. Five mechanisms are used to provide these services: consultation, mediation, conflict coaching, restorative process, and facilitated dialogue.¹⁶⁵ Consultations consist of conversations with ADR staff to create strategies to manage conflict.¹⁶⁶ Mediation is a formal, confidential process for resolving disputes with the support of neutral third parties. Mediators guide participants to find resolutions. ADR describes the mediation process as non-linear and consisting of five phases: introductions, storytelling, identification of issues and needs, brainstorming solutions, and developing agreements.¹⁶⁷ Mediators are county employees from various departments. ADR asks participants whether they prefer a mediator from their

¹⁶³ Society of Professionals in Dispute Resolution, *Designing Integrated Conflict Management Systems: Guidelines for Practitioners and Decision Makers in Organizations* (Ithaca, NY: Cornell/PERC Institute on Conflict Resolution and Washington, DC: Association for Conflict Resolution, 2001), <https://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1001&context=icrpubs>, 8.

¹⁶⁴ Society of Professionals in Dispute Resolution, 8.

¹⁶⁵ Fairfax County Government, “ADR Homepage.”

¹⁶⁶ “Consultations,” Fairfax County Government, accessed October 14, 2018, <http://fairfaxnet.fairfaxcounty.gov/Dept/CSC/Pages/ADR-Consultations.aspx>.

¹⁶⁷ “Mediation,” Fairfax County Government, accessed October 14, 2018, <http://fairfaxnet.fairfaxcounty.gov/Dept/CSC/Pages/ADR-Mediation.aspx>.

department or not. Some employees feel their department's culture is unique and prefer someone who is familiar with its dynamics and some feel mediators from within the department could remain neutral because the employee may feel they have a negative reputation within their department.

ADR defines conflict coaching as “a one-on-one relationship with a trained conflict coach, who provides support and conflict resolution tools for Fairfax County employees to help navigate their conflicts in the workplace.”¹⁶⁸ Participants in a dispute go through an intake process to determine their situation and needs. A conflict coach is then assigned. Fairfax County government employees volunteer to be conflict coaches since there are only two full-time ADR staff. Conflict coaches and mediators attend multi-day formal training conducted by ADR staff, which involves both lecture and role plays. After successfully completing the specific training courses, conflict coaches and mediators are assigned cases. ADR staff members follow up with all parties on a regular basis to ensure the employee's needs are being met. The resulting restorative processes are an opportunity for co-workers to discuss events that have caused workplace tension in order to improve relationships and the work environment.¹⁶⁹ Facilitated dialogues involve a neutral third-party assisting employees with potentially contentious meetings or conversations.¹⁷⁰

ADR also provides employee training with the goal of fostering “conflict competencies for preventing, managing, and resolving conflicts.”¹⁷¹ ADR achieves this through courses in conflict resolution, communication, teamwork, dealing with challenging people, conflict styles, active listening, mindfulness and constructive choice, and personality styles (such as Meyers-Brigg Type Indicator). Courses are offered regularly to

¹⁶⁸ “Conflict Coaching,” Fairfax County Government, accessed October 14, 2018, <http://fairfaxnet.fairfaxcounty.gov/Dept/CSC/Pages/ADR-Conflict-Coaching.aspx>.

¹⁶⁹ “Restorative Processes,” Fairfax County Government, accessed October 14, 2018, <http://fairfaxnet.fairfaxcounty.gov/Dept/CSC/Pages/ADR-Restorative-Processes.aspx>.

¹⁷⁰ “Facilitated Dialogues,” Fairfax County Government, accessed October 14, 2018, <http://fairfaxnet.fairfaxcounty.gov/Dept/CSC/Pages/ADR-Facilitated-Dialogues.aspx>.

¹⁷¹ ADR Home Page, Fairfax County Government, accessed on October 14, 2018, <http://fairfaxnet.fairfaxcounty.gov/Dept/CSC/Pages/ADR-Conflict-Coaching.aspx>

all employees or can be tailored to fit the needs of specific workgroups.¹⁷² In FY2015, 1,427 employees participated in at least one aspect of the ADR program; in FY 2017, the number rose to 2,134. In FY2017, 16.2% of employees participated in the conflict management process, in FY2015 only 10.6% did. The percentage of participants satisfied with ADR services in FY2017 was 96% as opposed to 91% in FY2015. ADR is being used more frequently with improved satisfaction among employees.¹⁷³ ADR usage and training from FY2016 to FY2018 is shown in Figure 25. The number of sessions varies for each case.

¹⁷² “Trainings and Workshops,” Fairfax County Government, accessed October 14, 2018, http://fairfaxnet.fairfaxcounty.gov/Dept/CSC/Pages/ADR-Training_and_Workshops.aspx.

¹⁷³ Fairfax County Department of Management and Budget, *Fairfax County, Virginia FY 2019 Adopted Budget Plan Vol. 1 General Fund* (Fairfax, VA: Fairfax County Government, 2018), <https://www.fairfaxcounty.gov/budget/sites/budget/files/assets/documents/fy2019/adopted/volume1.pdf>, 100.

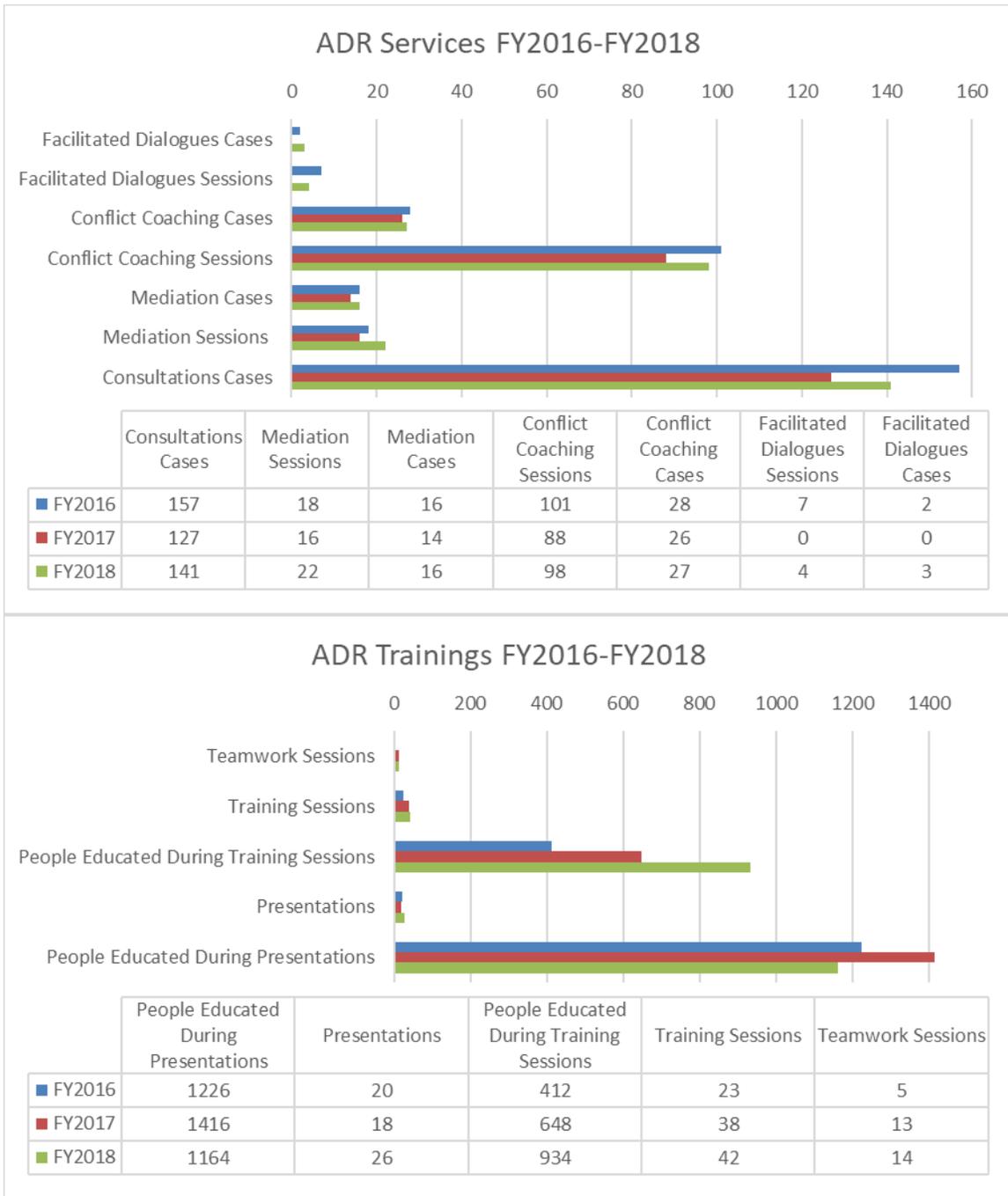


Figure 25. Fairfax County Government ADR Services and Trainings from FY2016 to FY2018¹⁷⁴

¹⁷⁴ Kristen Woodward, email message to author, October 30, 2018.

D. COUNTERPRODUCTIVE WORK BEHAVIORS

CWBs are an option for any employee experiencing a perceived injustice, but they have consequences. FCFRD adheres to the rules of conduct and discipline established by the Fairfax County government. Discipline is progressive and consists of three steps: informal warnings (oral warnings), formal warnings (written reprimands), and formal disciplinary actions (suspensions, dismissals, and disciplinary demotions).¹⁷⁵ Discipline depends on the severity of the offense and the employee's work record. Although all should abide by the same standard, supervisors are responsible for monitoring employee behavior and initiating discipline if warranted. Co-workers are responsible for notifying a supervisor about concerning behaviors. Discipline is not the only option; FCFRD has Employee Assistance Programs available to employees voluntarily or through supervisory referral. FCFRD also has an in-house Behavioral Health section staffed by trained civilian and uniformed personnel. It also has a peer-support team composed of fire department personnel trained in active listening skills, crisis intervention, and suicide awareness. In 2017, the Behavioral Health section with the assistance of ADR created a peer-mediator team to increase the number of trained fire department personnel. Peer mediators teach conflict competence and provide formal and informal mediations within the FCFRD.

E. UNITED STATES MARINE CORPS AND EXIT, LOYALTY, VOICE, AND COUNTERPRODUCTIVE WORK BEHAVIORS

Military members face many of the same influences as FCFRD personnel when deciding how to respond to perceived workplace injustices using ELVC options. Military members can exit via the Department of Defense established the "Inter-Service and Inter-Component Transfers of Service Members," which requires approval of both the service they are leaving and the service they are joining as well as completion of their service

¹⁷⁵ Fairfax County Government, *Conduct and Discipline*, Personnel Regulations Chapter 16 (Fairfax, VA; Human Resources, July 25, 2017), <https://www.fairfaxcounty.gov/hr/sites/hr/files/assets/documents/hr/chap16.pdf>, 16-1.

commitment.¹⁷⁶ Loyalty has similar advantages as FCFRD: rank, pay, tenure, and possible future promotions.

USMC has three voice mechanisms for expressing grievances for non-judicial complaints: Equal Employment Opportunity (EEO), Inspector General (IG), or the chain of command. EEO investigates complaints involving hazing, sexual harassment, and discrimination. Grievances can be reported directly to the IG for matters involving the following: abuse of power; inappropriate gifts (giving or receiving); conflicts of interest; ethics violations; fraud; false official statements/claims; political activities; misuse of time, government property, position, or public office; whistleblower protection; significant cases of mismanagement and time and attendance violations, and systemic problems.¹⁷⁷ Unlike FCFRD, military officers' authority to issue discipline comes with rank; the severity of discipline increases with an officer's rank.¹⁷⁸ FCFRD approval of discipline begins at the deputy fire chief level.

USMC personnel may also Request Mast. Request Mast is "the right of all Marines to directly seek assistance from, or communicate grievances to their commanding officers."¹⁷⁹ The process allows personnel to communicate directly with any commanding officer in the chain of command including the commander general. The commander is required to consider the issue and personally respond to the requestor.¹⁸⁰ Commanding officers can deny requests, but they should provide an explanation and further resources and procedures for resolution. Request Mast shall not be used for discipline arising from the Uniform Code of Military Justice or to "harass, avoid duty, or intentionally interfere

¹⁷⁶ Department of Defense, *Inter-Service and Inter-Component Transfers of Service Members*, DoD Instruction 1300.24 (Washington, DC: Department of Defense, July 25, 2017), http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/130004_dodi_2017.pdf, 3.

¹⁷⁷ "Inspector General of the Marine Corps," The United States Marine Corps, accessed October 14, 2018, <https://www.hqmc.marines.mil/igmc/Resources/Submit-a-Complaint/>.

¹⁷⁸ Department of Defense, *Commanding Officer's Non-Judicial Punishment*, Uniformed Code of Military Justice Article 15 (Washington, DC: Department of Defense, 1951), <http://www.ucmj.us/subchapter-3-non-judicial-punishment/815-article-15-commanding-officers-non-judicial-punishment>.

¹⁷⁹ Department of the Navy, *Request Mast Procedures*, NAVMC Directive 1700.23F (Washington, DC: Department of the Navy, March 22, 2007), 1 <https://www.marines.mil/Portals/59/NAVMC%20DIR%201700.23F.pdf>.

¹⁸⁰ Department of the Navy, *Request Mast Procedures*.

with the Commanding Officer's ability to carry out the functions and missions of the command."¹⁸¹ FCFRD can receive waivers to skip the first and second steps of the grievance process for suspensions, demotions, and terminations. Military and FCFRD personnel must justify why they are requesting to skip levels in the chain of command. Both the military and FCFRD have policies in place to protect grievance filers from retaliation. However, service members and FCFRD employees may have concerns over the unspoken ramifications such as retaliation.

F. RECOMMENDATIONS

This thesis provides three recommendations for improvement within FCFRD: a change in the supervisory levels that approve discipline, a change in the supervisory levels that adjudicate grievances, and increased efforts to use ADR. Fairfax County's ADR system has the four features identified with higher perceptions of procedural justice in the literature review: its credibility, employee input, it's well-known, and the inclusion of neutral third parties. Within FCFRD's formal grievance system, the perception of unfairness exists because the same chain of command that issues discipline hears the grievance. If the issuing officer's supervisor did not think the discipline was appropriate, they would not have approved it initially.

The grievance system does allow the employee to present their perspective; however, the chain of command has already heard and agreed with the supervisor's narrative. How much weight does this have on distributive outcomes? Since 2014, no employees received relief in step one (adjudicated by the immediate supervisor who issued the discipline). Only two out of 73 grievances received any form of relief in step two (the deputy fire chief). As anticipated, any form of relief granted usually occurs at step three—most often the first level of the grievance process in which the decision maker (fire chief) was not involved in the initial discipline approval process. The exception is discipline involving deputy fire chiefs. The first discipline would come from an assistant fire chief and their supervisor (the fire chief) would adjudicate the second step.

¹⁸¹ "Inspector General of the Marine Corps," The United States Marine Corps, accessed October 14, 2018, <https://www.hqmc.marines.mil/igmc/Units/Inspections-Division/Request-Mast-Guide/>

When the employee files a step one and step two grievance, the supervisor adjudicating the grievance has five business days to meet with the employee and an additional five business days to respond. Employees can grant extensions if the supervisor requests them. By the time the step-two grievance process is complete, the employee has been experiencing the perceived injustice for at least 20 business days. According to FCFRD grievance data, 99.99% of employees who filed step-two grievances in 2014–2017 perceived a workplace injustice, voiced this grievance in step one, and received no relief. During this time, they most likely talked about the situation with co-workers and possibly experienced decreased productivity and morale. When the fire chief adjudicated the third step, 0.2% received some form of relief. Of the employees who went to Civil Service, a neutral third party, 71% received some form of relief. (Figure 26).

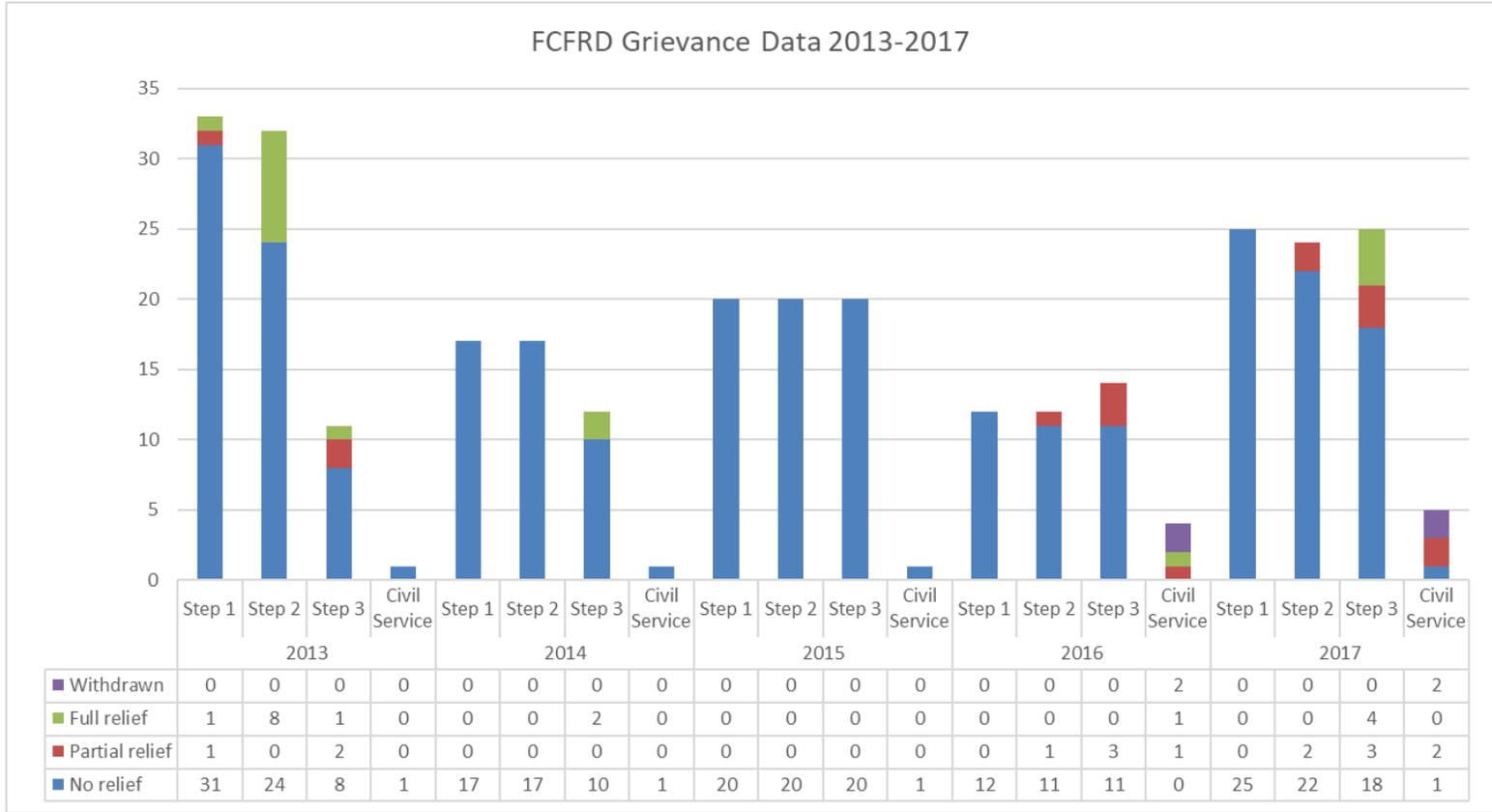


Figure 26. FCFRD Grievance Data 2014–2017¹⁸²

¹⁸² Jay Grove, email message to author, October 17, 2018.

The chiefs may have upheld the grievances for lack of merit, not because the system is unfair; however, the perception of unfairness is worth considering. In this vein, how can FCFRD increase perceptions of fairness, transparency, and trust related to discipline and grievance procedures? Julie Olson-Buchanan and Wendy Boswell found higher perceptions of procedural justice associated with ODR systems that are consistent, credible, transparent, well-known, allow for appeals, and involve neutral third parties.¹⁸³ FCFRD should consider adopting an approach similar to the military in regard to issuing discipline. Immediate supervisors (captains) should be able to propose informal warnings. Battalion chiefs should be empowered and trusted to approve the discipline as a mentoring function for captains. Informal warnings should not need to go any further up the chain of command due to the low-level nature of the offense. Deputy chiefs should be able to approve formal warnings in consultation with HR for consistency. Formal disciplinary actions are the most severe form of discipline. Proposals for formal disciplinary actions should go up through the chain of command for the three assistant chiefs to review together. If they agree on the formal discipline, then it should proceed to the fire chief for final approval because of the proposed severity of the offense. See Table 3. All supervisors should consult with HR to ensure consistency. HR should maintain a discipline database to meet this proposed model.

Table 3. Discipline within the FCFRD

Type of Discipline	Current System	Proposed System
Informal warnings issued by	Captain	Captain
Informal warnings approved by	Assistant Chief	<i>Battalion Chief</i>
Formal warnings issued by	Captain	Captain
Formal warnings approved by	Assistant Chief	<i>Deputy Chief in consultation with HR</i>
Formal disciplinary actions issued by	Fire Chief	Fire Chief
Formal disciplinary actions approved by	Fire Chief	<i>Fire Chief with recommendations from Assistant Chiefs</i>

¹⁸³ Olson-Buchanan and Boswell, “Organizational Dispute Resolution Systems,” 334-337.

The ranks adjudicating grievances should be adjusted (Figure 27). Step one grievances should be heard and decided by a battalion chief. The battalion chief has not heard the employee’s perspective; whereas, the immediate supervisor should have asked the employee during the investigation and prior to issuing discipline. Step two grievances should still be heard and decided on by a deputy chief. The fire chief would still hear step three grievances.

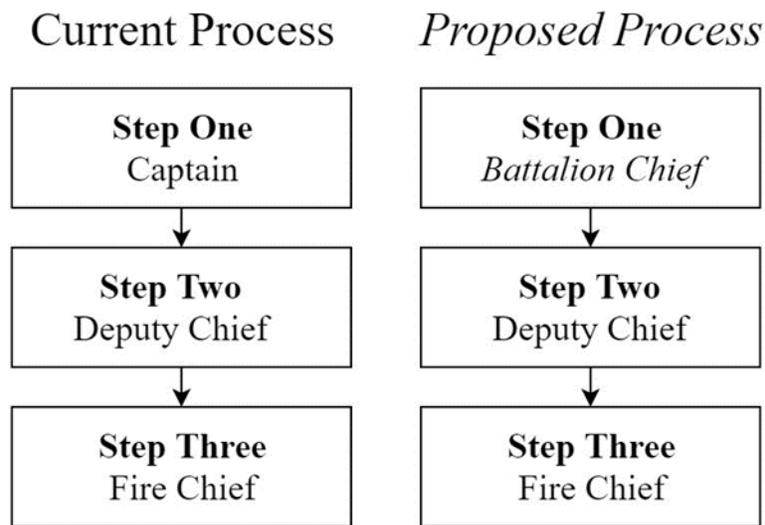


Figure 27. Proposed FCFRD Grievance Process

FCFRD should continue working to increase awareness of ADR services and access. In 2017, FCFRD added modules on ADR to mandatory initial certification classes for all lieutenants (Fire Officer I and II). ADR staff is assisting with the lectures and role play scenarios based on actual events in the FCFRD. Ongoing mandatory officer training sessions for all officers have also included ADR staff and material. The officers then train their subordinates and offer ADR services during counseling sessions. The peer mediator program is another low-cost way of informing FCFRD personnel without sending them to formal training. ADR information is available on the Fairfax County government intranet to all employees. The results of these actions are an increased number of FCFRD intakes to ADR as well as mediation and conflict coaching sessions (Figure 28).

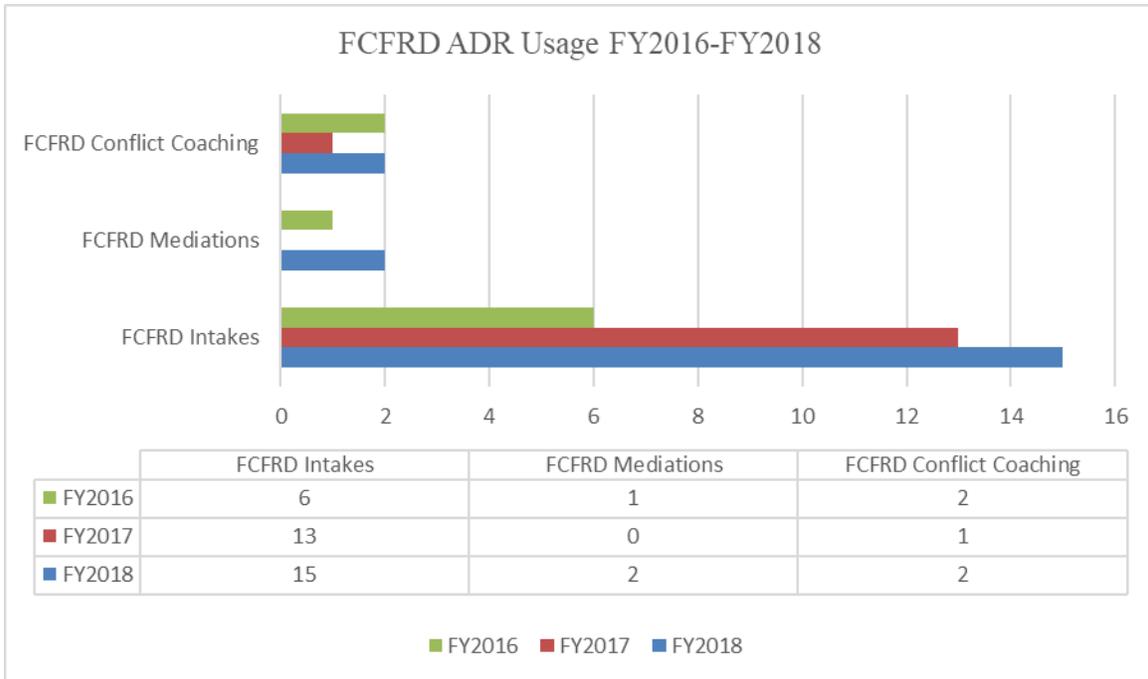


Figure 28. FCFRD ADR Usage from FY2016 to FY2018¹⁸⁴

FCFRD has a good grievance response system that can prevent disgruntled employees from committing attacks, but there is room for improvement. FCFRD should acknowledge the cost of exit influences employee responses to perceived injustice in the workplace. There are no specific recommendations to lower the cost of exit. The organization should recognize because the cost of exit is high, employees are more likely to use one of the other three options. FCFRD could research whether there are more opportunities to make loyalty more appealing. Increasing loyalty may not be a high priority for grievance reduction as there are multiple incentives already in place. Opportunities to increase loyalty may have an additional benefit of increasing job satisfaction.

FCFRD should improve its response to voice by adjusting what levels in the chain of command issue different types of discipline and adjudicate grievances. Having supervisors adjudicate grievances related to discipline or issues they were not involved in increases perceptions of fairness. Ongoing employee ADR education should continue, and

¹⁸⁴ Kristen Woodward, email message to author, October 30, 2018.

employees should be educated about the specific options and process when filing formal grievances. Employees who perceive grievance systems as fair are more likely to use voice and have an increased perception of procedural justice. FCFRD should continue to look for, acknowledge, and address CWBs, so employees understand there are repercussions for this response.

VI. CONCLUSION, RECOMMENDATIONS, LIMITATIONS, AND FUTURE RESEARCH

A. CONCLUSION AND RECOMMENDATIONS

This thesis answers three questions:

1. How do employees respond to perceived workplace injustices?
2. What is the relationship between employee responses to perceived workplace injustices and insider attacks?
3. How can organizations prevent disgruntled employees from committing attacks?

ELVC is a descriptive, not predictive, theory that states employees respond to perceived workplace injustices in one, or a combination of, four ways: exit, loyalty, voice, and CWBs. Exit is when the employee voluntarily leaves the situation, loyalty is when the employee chooses no other response, voice is when the employee attempts to change rather than escape an unjust situation, and CWBs are active or passive attempts to restore equity using actions resulting in harm to co-workers or the organization. The grievance response model illustrates the process of how an event becomes a grievance, the influences that affect the process, and how an employee may respond.

Be aware of employee responses to perceived injustice and how the organization can shape those responses. Organizations should be aware of ELVC and positive and negative influences on specific responses to perceived workplace injustices. They should apply it to their organizations to identify how employees are more likely to respond. Organizations should take actions to guide employees toward positive responses and hold them accountable for negative responses; however, organizations should not hold on to poorly performing employees and employees should not stay in environments they perceived to be unjust if loyalty and voice do not work. Supervisors should talk to employees about how conflict affects them, their perceived options, and the repercussions or potential outcome of each option. How does the employee feel about the situation? What

do they want to do about it? What will happen if they do that? What might a better option be? Supervisors then have the opportunity to discuss positive alternatives and document employee responses.

The relationship between employee responses to perceived workplace injustices and insider attacks could not be determined because the data needed was not publicly available. However, the available data provided valuable information. The definition of an insider must include former employees regardless of whether their separation was voluntary or not. The most common grievance was related to mistreatment followed by performance issues, and revenge was a strong motivation for attacks.

Remember, a separated employee must be completely separated. Organizations should immediately revoke physical and cyber access for all employees when they separate voluntarily or involuntarily. Organizations should not ignore employees who perceive they are victims of workplace injustice. These employees should be a starting point for insider threat monitoring. Supervisors and co-workers should recognize and report CWBs. Employees engaging in CWBs should be held accountable.

Bring employees and supervisors up to speed on how best to handle workplace justice. In addition to the preceding recommendations, organizations should educate and train employees and supervisors. They should change or create policies, procedures, and cultures that incorporate these recommendations. They should ensure ADR systems are credible, allow for employee input, are well-known, and involve neutral third parties. People have varying conflict management styles; therefore, having various grievance methods available increases the probability employees will use and perceive the voice response as fair. Organizations must recognize their influence on employee responses to perceived workplace injustices and ability to prevent insider attacks. These recommendations may not only prevent future attacks but also improve employee relationships within their organizations.

B. LIMITATIONS

A critical research limitation is a lack of three types of data: narrative, behavioral, and data from organizations. Relevant data from organizations may not exist, be available,

or be free of bias or error. Data may be hard to find because attackers conceal their behavior or organizations do not preserve or share data due to confidentiality concerns. Confidentiality is a necessity for employees and organizations but an obstacle for research. Organizations may be unwilling to share data due to concerns about image, criminal and civil liability, or fear of broadcasting security issues that may lead to future attacks, especially if the organization did not correct issues that led to attacks. Therefore, this research relied solely on publicly available data and a comprehensive literature review to provide recommendations.

There are multiple, contradictory, and missing narratives. Most attack information was based solely on media and contradictory third-party reports; over half of the insiders who committed violence inside died and were unable to provide their narrative. Therefore, the third parties and the researcher speculated about the root and proximate causes of the insider's grievances and behavior.

When dealing with human behavior, direct cause-and-effect relationships are difficult to prove, and correlation does not necessarily equal causation. Individual, situation, organizational, and other unknown factors have unpredictable influences. No situation is the same, and no two people react the same way. These three limitations are part of why insider threats are a *wicked* problem.

C. FUTURE RESEARCH

There are three areas where future research would benefit the insider threat field: the creation of a type III workplace violence fatality database, ELVC responses and influences, and ADR effectiveness measuring. The National Consortium for the Study of Terrorism and Responses to Terrorism, headquartered at the University of Maryland, maintains the Global Terrorism Database. The database exists “in an effort to increase understanding of terrorist violence so that it can be more readily studied and defeated.”¹⁸⁵ It uses open-source information about the date and location of the attack, the weapons used, the target, the number of casualties, and responsible group or individual.

¹⁸⁵ “Overview of the GTD,” Global Terrorism Database, accessed January 17, 2019, <https://www.start.umd.edu/gtd/about/>.

Insider threat and workplace violence research would benefit from a similar database. In order to narrow the focus and obtain as much open-source data as possible, the database could be limited to events that result in fatalities. Data points could include the date, location, insider, age, gender, employment status at the time of the attack, whether the insider survived the attack, motivation, target, organization award of perceived injustice, CWBs displayed, and presence of criminal or psychiatric history. All of the data may be difficult to collect for reasons noted in the limitations, but a desire for complete data should not be a reason for no data.

ELVC theory should continue to be studied to identify other possible responses and influences on response choices from psychological, sociological, organizational leadership, and justice perspectives. Organizations would benefit by understanding influences and barriers to positive responses to perceived workplace injustice so they can change policies, procedures, and culture.

ADR effectiveness should be measured generically and organizationally. Measuring ADR effectiveness substantiates policies and procedures in place and allows for improvement. Quantitative numbers such as how many employees use ADR do not indicate effectiveness. Low numbers of use may indicate low numbers of disputes or low system credibility. Instead, surveys may be an option. Organizations should give exit surveys to employees who resign before retirement asking why they left. If they left because of perceived injustices, organizations should ask what steps they took to resolve the conflict, why, and the perceived outcome. Climate surveys can be given to the organization to understand employee's perceptions of the culture in regards to grievances. Grievance response surveys can be given to employees to determine which ELVC response they would use in workplace situations and why.

APPENDIX A. LIST OF VIOLENT INSIDER ATTACKS FROM ORIGINAL DATA COLLECTED

Date	City	State	Emp. Status	Time	Died	Target	Psych. History	Crim. History	Grievance
3/20/2000	Irving	Texas	Fired	1 day	No	Both	No	Yes	Performance
5/24/2000	New York	New York	Fired	few months	No	Both	Yes	Yes	Performance
12/26/2000	Wakefield	Massachusetts	Active		No	Both	No	No	Financial
2/5/2001	Melrose Park	Illinois	Fired	7 years	Suicide	Organization	No	Yes	Performance
7/13/2001	Palm Beach Gardens	Florida	Active		No	Individual	Yes	No	Mistreated
12/6/2001	Goshen	Indiana	Active		Suicide	Both	Yes	No	Performance
3/22/2002	South Bend	Indiana	Active		Suicide	Both	No	No	Performance
6/8/2002	Providence	Rhode Island	Active		Suicide	Individual	No	No	Mistreated
7/1/2003	Jefferson City	Missouri	Active		Suicide	Both	No	No	Performance
7/8/2003	Meridian	Mississippi	Active		Suicide	Both	No	No	Performance
7/9/2003	San Angelo	Texas	Active		Suicide	Individual	Yes	No	Performance
7/25/2003	Huntsville	Alabama	Fired	same day	No	Individual	No	No	Performance
8/27/2003	Chicago	Illinois	Fired	6 months	Killed by police	Both	No	Yes	Performance
11/6/2003	Atlanta	Georgia	Resigned	2 years	No	Organization	Yes	No	Mistreated
7/2/2004	Kansas City	Kansas	Active		Suicide	Individual	No	No	Mistreated
1/26/2005	Toledo	Ohio	Active		Suicide	Individual	Yes	No	Performance
2/18/2005	Romulus	Michigan	Fired	same day	No	Individual	No	No	Performance
2/21/2005	Pascagoula	Mississippi	Active		No	Individual	No	No	Mistreated
2/25/2005	Los Angeles	California	Active		No	Individual	No	No	Performance
5/5/2005	Houston	Texas	Active		Suicide	Individual	No	No	Financial
5/9/2005	San Francisco	California	Fired	8 months	No	Individual	Yes	Yes	Mistreated
9/15/2005	Oak Lawn	Illinois	Active		No	Individual	No	No	Mistreated
9/27/2005	New Windsor	New York	Fired	1 year	Suicide	Both	No	Yes	Performance
11/23/2005	Glen Burnie	Maryland	Fired	same day	Suicide	Individual	No	No	Performance
1/30/2006	Goleta	California	Retired	3 years	Suicide	Organization	Yes	Yes	Mistreated

Date	City	State	Emp. Status	Time	Died	Target	Psych. History	Crim. History	Grievance
4/4/2006	Baker City	Oregon	Active		No	Individual	No	No	Mistreated
4/18/2006	St. Louis	Missouri	Fired	1 day	Suicide	Individual	No	No	Financial
6/25/2006	Denver	Colorado	Active		Killed by police	Organization	No	No	Mistreated
3/5/2007	Signal Hill	California	Active		Suicide	Individual	No	No	Financial
4/9/2007	Troy	Michigan	Fired	4 days	No	Individual	Yes	No	Performance
4/20/2007	Houston	Texas	Active		Suicide	Individual	No	No	Performance
8/8/2007	Perrysburg	Ohio	Active		No	Individual	Yes	No	Performance
8/30/2007	Bronx	New York	Fired	2 years	No	Individual	No	No	Performance
9/10/2007	Sheboygan	Michigan	Resigned	11 months	Suicide	Individual	No	No	Mistreated
3/18/2008	Santa Maria	California	Active		No	Individual	Yes	No	Mistreated
4/1/2008	Randolph	Massachusetts	Active		Suicide	Individual	Yes	No	Mistreated
4/30/2008	Chicago	Illinois	Active		No	Individual	No	No	Mistreated
6/25/2008	Henderson	Kentucky	Active		Suicide	Both	No	No	Performance
8/1/2008	Bristol	Pennsylvania	Fired	4 months	No	Individual	No	Yes	Financial
10/13/2008	San Antonio	Texas	Active		No	Individual	No	No	Mistreated
11/14/2008	Silicon Valley	California	Fired	same day	No	Individual	Yes	No	Performance
12/8/2008	Austin	Texas	Fired	2 days	Suicide	Individual	No	No	Mistreated
12/30/2008	Nederland	Colorado	Active		Suicide	Individual	Yes	No	Mistreated
1/29/2009	Cambridge	Massachusetts	Active		No	Individual	No	No	Mistreated
2/14/2009	Brockport	New York	Fired	1 day	No	Individual	Yes	No	Mistreated
3/24/2009	San Diego	California	Active		Killed by police	Organization	No	No	Performance
11/5/2009	Fort Hood	Texas	Active		No	Organization	No	No	Mistreated
11/6/2009	Orlando	Florida	Fired	2 years	No	Organization	Yes	No	Financial
12/23/2009	Baton Rouge	Louisiana	Fired	several months	No	Both	Yes	No	Financial
1/7/2010	St. Louis	Missouri	Active		Suicide	Organization	No	No	Mistreated
1/12/2010	Kennesaw	George	Fired	1 year	No	Organization	Yes	No	Mistreated
2/12/2010	Huntsville	Alabama	Active		No	Both	Yes	No	Performance

Date	City	State	Emp. Status	Time	Died	Target	Psych. History	Crim. History	Grievance
3/10/2010	Columbus	Ohio	Active		Suicide	Individual	No	Yes	Performance
3/20/2010	Tarpon Springs	Florida	Active		No	Individual	No	No	Mistreated
5/17/2010	Boulder	Colorado	Active		Suicide	Individual	No	No	Financial
8/3/2010	Manchester	Connecticut	Fired	same day	Suicide	Both	No	No	Mistreated
9/9/2010	Philadelphia	Pennsylvania	Active		No	Individual	Yes	No	Performance
9/22/2010	Crete	Nebraska	Active		Suicide	Individual	No	No	Mistreated
10/5/2011	Cupertino	California	Active		Suicide	Both	No	No	Mistreated
12/16/2011	Irwindale	California	Active		Suicide	Individual	No	No	Performance
1/13/2012	Star	North Carolina	Active		Suicide	Individual	Yes	No	Mistreated
2/26/2012	Long Beach	California	Active		Killed by police	Individual	No	No	Performance
8/24/2012	New York	New York	Fired	1 year	Killed by police	Individual	No	No	Mistreated
8/31/2012	Old Bridge Township	New Jersey	Active		Suicide	Organization	Yes	No	Mistreated
9/27/2012	Minneapolis	Minnesota	Fired	same day	Suicide	Organization	Yes	Yes	Performance
11/6/2012	Fresno	California	Active		Suicide	Individual	Yes	Yes	Mistreated
2/7/2013	Multiple	California	Fired	5 years	Suicide	Both	No	No	Performance
6/13/2013	St. Louis	Missouri	Active		Suicide	Individual	No	No	Mistreated
8/24/2013	Lake Butler	Florida	Active		Suicide	Individual	No	No	Performance
9/16/2013	Washington	DC	Active		Killed by police	Organization	Yes	Yes	Mistreated
4/2/2014	Fort Hood	Texas	Active		Suicide	Organization	Yes	Yes	Mistreated
4/29/2014	Kennesaw	Georgia	Active		Suicide	Organization	Yes	No	Mistreated
7/31/2015	Chicago	Illinois	Active		Suicide	Individual	No	No	Performance
9/23/2015	Hoover	Alabama	Fired	1 day	No	Individual	No	No	Performance
9/23/2014	Birmingham	Alabama	Fired	1 month	Suicide	Individual	No	No	Performance
9/24/2014	Moore	Oklahoma	Fired	same day	No	Organization	No	Yes	Performance
2/12/2015	Sioux Falls	South Dakota	Active		Suicide	Individual	Yes	No	Mistreated
7/16/2015	Chattanooga	Tennessee	Active		Killed by police	Organization	Yes	No	Mistreated

Date	City	State	Emp. Status	Time	Died	Target	Psych. History	Crim. History	Grievance
8/26/2015	Roanoke	Virginia	Fired	2 years	Suicide	Individual	No	No	Mistreated
12/2/2015	San Bernardino	California	Active		Killed by police	Both	No	No	Mistreated
2/25/2016	Hesston	Kansas	Active		Killed by police	both	Yes	Yes	Mistreated
5/4/2016	Katy	Texas	Fired	2 weeks	Suicide	Individual	No	No	Mistreated
10/25/2016	Roanoke	Virginia	Fired	7 months	Suicide	Organization	No	No	Performance
11/28/2016	Palmview	Texas	Active		No	Organization	Yes	No	Mistreated
6/5/2017	Orlando	Florida	Fired	2 months	Suicide	Individual	No	Yes	Mistreated
6/8/2017	Eaton Township	Pennsylvania	Active		Suicide	Individual	Yes	No	Mistreated
6/14/2017	San Francisco	California	Active		Suicide	Organization	No	Yes	Mistreated
10/16/2017	Taylor	Michigan	Fired	3 months	No	Individual	Yes	Yes	Mistreated
10/18/2017	Edgewood	Maryland	Active		No	Individual	No	Yes	Mistreated
10/5/2017	New York	New York	Fired	2 days	Suicide	Individual	No	Yes	Performance

**APPENDIX B. WORKPLACE VIOLENCE AND TERRORISM
DATA¹⁸⁶**

Data Point	Results (90 Cases Total)		
Employment Status at Time of Attack	Employed	55	61%
	Not Employed	35	39%
	Terminated	32	91%
	Resigned	2	6%
	Retired	1	3%
Time Since Employment	Same Day	7	20%
	1 to 7 days	7	20%
	1 week to 1 month	2	6%
	1 to 6 months	6	17%
	6 to 12 months	5	14%
	2 to 7 years	5	14%
Lived through the attack?	Lived	34	38%
	Died	56	62%
	Killed by Police	9	16%
	Committed Suicide	47	84%
Grievance	Mistreatment	46	51%
	Performance	36	40%
	Debts	8	9%
Target	Individual	54	60%
	Organization	18	20%
	Both	18	20%
Psychiatric/Intellectual Disability	Yes	33	37%
Criminal History	Yes	20	22%

¹⁸⁶ Data compiled from Appendix A.

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APPENDIX C. INSIDER TERRORISM DATA¹⁸⁷

Data Point	Results (3 Cases Total)		
Employment Status at Time of Attack	Employed	2	67%
	Not Employed	1	33%
	Terminated	1	33%
	Resigned	0	
	Retired	0	
T Time Since Employment	Same Day	0	
	1 to 7 days	0	
	1 week to 1 month	0	
	1 to 6 months	0	
	6 to 12 months	0	
	2 to 7 years	1	33%
Lived through the attack?	Lived	1	33%
	Died	2	67%
	Killed by Police	1	33%
	Committed Suicide	1	33%
Grievance	Mistreatment	2	67%
	Performance	1	33%
	Debts	0	
Target	Individual	0	
	Organization	1	33%
	Both	2	67%
Psychiatric/Intellectual Disability	Yes	0	
Criminal History	Yes	0	

¹⁸⁷ Compiled from data in Appendix A.

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**APPENDIX D. COMPARISON BETWEEN VIOLENT INSIDER
DATA AND LEE AND MCCRIE’S STUDY ON MASS WORKPLACE
HOMICIDE COMMITTED BY EMPLOYEES¹⁸⁸**

Data Point	Thesis		Lee and McCrie
Number of Cases	90		44
Employment Status at Time of Attack	Employed	61%	55%
	Not Employed	39%	46%
	Terminated	91%	61%
	Resigned	6%	Not Available
	Retired	3%	Not Available
Time Since Employment	Same Day	20%	16%
	1 day to 1 month	26%	16%
	1 month to 1 year	31%	75%
	2 to 7 years	14%	None
Lived through the attack? Grievance	Lived	38%	46%
	Died	62%	54%
	Killed by Police	16%	7%
	Committed Suicide	84%	48%
Grievance	Mistreatment	51%	
	Performance	40%	30%
	Debts	9%	
Target	Individual	60%	Supervisor 66%
	Organization	20%	
	Both	20%	
Psychiatric Issues /Intellectual Disability	Yes	37%	21%
Criminal History	Yes	22%	16%
Motivation	Revenge/Anger	Unknown	89%

¹⁸⁸ Grievance causes were counted twice if they were both present. Compiled from data in Appendix A; Adapted from Lee and McCrie, Mass Homicides by Employees in the American Workplace, 11-19.

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**APPENDIX E. COMPARISON OF NON-VIOLENT INSIDER
ATTACK DATA FROM FOUR CERT STUDIES¹⁸⁹**

Data Points		Critical Infrastructure	Banking/ Finance	Government Sector	IT
# of cases and insiders		49/49	23/26	36/38	52/57
Employment Status at Time of Attack	Employed	41%		90%	53%
	Not Employed	59%		10%	47%
	Terminated	48%			37%
	Resigned	38%			41%
	Laid off	7%			7%
Criminal History	Yes	30%	27%	31%	38%
Grievance	Mistreatment	50%		10%	20%
	Performance	20%		40%	47%
Motivation	Debts / Greed		81%	51%	37%
	Revenge / Anger	84%	23%	24%	56%
	Address Grievance	41%		14%	12%
	Gain Respect	12%	15%		
	Dissatisfaction w/ company policy or culture	24%	15%		12%
CWBs	Supervisor noticed?	97%	27%	30%	30%
	Consequences	74%			70%
	Recorded discipline	31%		84%	29%
Perceived as disgruntled		57%	19%	21%	32%

¹⁸⁹ Adapted from Keeney et al.; Randazzo et al.; Kowalski, Cappelli, and Moore; Kowalski et al.

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