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An ethnographic study of scrappers and metal thieves.

Benjamin Fred Stickle
University of Louisville

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AN ETHNOGRAPHIC STUDY OF SCRAPPERS AND METAL THIEVES

By

Benjamin Fred Stickle
B.S., Cedarville University, 2005
M.S., University of Louisville, 2010

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University of Louisville
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Dissertation Approved on

April 16, 2015

by the following Dissertation Committee:

Dissertation Director
Richard Tewksbury, Ph.D.

Patricia Gagné, Ph.D.

Deborah G. Keeling, Ph.D.

Eric S. McCord, Ph.D.

DEDICATION

This dissertation is dedicated to my wife

Amy T. Stickle

and

to my parents

Dr. & Mrs. Fred E. Stickle

ACKNOWLEDGMENT

I would like to thank my chair, Dr. Richard Tewksbury, for his guidance, encouragement and patience; whose teaching and mentorship allowed me to see academia in a new and exciting way. I would also like to thank the other committee members, Dr. Patricia Gagné, Dr. Deborah Keeling and Dr. Eric McCord for their assistance. I am especially indebted to my undergraduate professor and mentor, Chief Donald G. Hanna, who pushed me to master my profession, and myself.

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ABSTRACT

AN ETHNOGRAPHIC STUDY OF SCRAPPERS AND METAL THIEVES

Benjamin Fred Stickle

April 16, 2015

Metal theft is a crime that has significantly affected the U.S. in the last decade causing millions of dollars of damages and losses. However, little is known about its prevalence and harms to society. Moreover, even less is known about the individuals who are involved in metal theft. This lack of knowledge has hampered the ability of law enforcement, governments and individuals to prevent metal theft. The present study provides the first known qualitative examination of scrappers and metal thieves. Qualitative data is derived from participant observation and unstructured interviews with scrappers as well as metal thieves. The goals are to define the characteristics, develop understanding, describe places and events, and identify the meanings, concepts and definitions of metal thieves. The present study provides insight into the criminal motivation and methods of metal theft as well as lays a foundation for future studies. Findings indicate that much of what is commonly believed about metal thieves in popular media and through anecdotal reports may be incorrect. Among other important findings, the present study indicates there is a clear difference between scrappers and metal thieves, identifies a scrapping subculture and distinguishes a taxonomy of scrappers and metal thieves. Further, metal thieves tended to operate in teams, usually are employed, often planned and deliberately committed theft, and were less influenced by drugs than frequently claimed. Moreover, metal thieves are often currently, or

have a past work history, in field related to metal. These and other findings represent a significant contribution to the field of criminal justice and provide a thorough understanding of metal thieves and their behavior.

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I - INTRODUCTION

The recycling industry in the United States generates more than \$87 billion in economic activity and employs nearly 788,000 persons, annually (John Dunham and Associates, 2013). However, the recycling industry is rarely involved in seeking out and acquiring items to be recycled. Rather, seeking and acquiring often falls to others who bring old, discarded or broken items to recycling centers so that the unwanted items can enter the recovery cycle (recycling) and emerge again as new products. Because recovering material from existing products is often significantly cheaper than utilizing raw materials to create new products, companies are willing to pay for used metals, plastics and papers. This means that many forms of waste and unwanted material have monetary value. Some items have a very low value, such as the local newspaper. While other materials such as a surplus of copper from a plumbing job, possesses a very high value.

The most commonly recycled materials in the United States are various types of metals (e.g., copper, iron, steel, aluminum, brass) (John Dunham and Associates, 2013). This is primarily for economic reasons, such as availability, size and value. Metals, as opposed to other types of recyclable materials, are frequently, and often effortlessly, found within the built environment, easily broken down into manageable sizes and maintain a high re-sale value. Copper, for example, has recently traded as high as \$4.58/lb. on the Commodities Exchange Market (London Metal Exchange, 2015) which means a five-gallon bucket of

scrap copper pipes and wires (approximately 40 pounds) can be sold at a recycling center for \$160 (assuming a purchase price of \$4 per pound).

Recycling centers or scrap yards serve as the broker between individuals and businesses who collect recyclable material and industries who are willing to purchase and reuse the materials. Collecting materials for recycling may be accomplished through several methods and by various entities from individuals to corporations. One method is reclamation, which often refers to the salvaging of large metal items such as ships, cranes and locomotives, as well as the demolition and salvaging of metal from buildings. Another method of collecting recycling materials that has gained in popularity in recent years, is the use of curbside recycling bins in local communities or charity and fundraising drives to collect recyclable products (Zimring, 2005). Many industrial and manufacturing industries also recycle. For example, a company manufacturing aluminum ladders may recycle aluminum byproducts, and even subpar ladders. Finally, there are individuals who search for, collect and recycle materials as a means of income.

Unfortunately, there are no statistics within the recycling industry to identify the prevalence of each method of obtaining recyclable material. Therefore, it is unknown what percentage of recyclable material is sold to recycling centers by individual collectors, businesses, through public collection, or through large-scale professional salvaging. While individual recyclers may not recycle the most material by tonnage, the number of individuals who search for, collect and recycle materials appears to be growing and is an area of societal concern. This is demonstrated anecdotally by the dozens of books (both self-published and by academic publishers), YouTube channels, blogs, websites, TV documentary and reality shows (see *Scrapper: A Documentary Feature Film* and *Scrapers: Reality Show about Scrap Metal Crews*), online tutorials, and even smart phone apps that cater exclusively to metal

recycling. This deluge of attention serves two primary purposes. First, much of the material is devoted to attracting and educating individual metal collectors on the methods, tools and techniques of the trade. Second, many of the TV shows, documentaries and books serve to display the peculiar and unfamiliar stories and behaviors of a subculture that functions within the mainstream of society, but is often not understood.

For example, it is likely that much of the public has observed scrapping vehicles, such as an old dilapidated truck driving slowly down the streets in their neighborhood, pausing to load an old refrigerator from the curb onto an already precariously towering load of assorted metal. Others may have seen handmade signs posted along highways advertising, “Free junk removal”, “I want your scrap metal” or “We’ll haul your clunker away”. Simply observing these individuals, their vehicles, their advertisements, or interacting with them quickly reveals that these persons are part of a societal subculture with its own jargon, culture and behavior. As with many other subcultures, society is fascinated by, leery of, and often alarmed by, these individuals.

Unfortunately, there is no scholarly documentation, knowledge or understanding of this subculture and its activities in society. In fact, the colloquialism, scrapping, most commonly used to identify the activities of this subculture has not been adequately defined. Therefore, for the purposes of the present study, scrapping is defined as follows:

Scrapping is the act of regularly collecting; fragmented, damaged or discarded metal items, which are no longer useful or have not maintained their original value, in order to recycle them for a financial profit.

Similarly, the term scrapper is often used within this context to refer to individuals who participate in scrapping, or more generally used to identify individuals within this subculture. These terms appear to be common among those within and without the

subculture. Moreover, the term scrapper is often heavily laden with latent connotations. These connotations are often negative, xenophobic and rooted in historical caricatures (Zimring, 2005) that teeter between accurate portrayals and biased stigmas.

Interestingly, cultural changes in the latter quarter of the 20th century have made recycling a virtue. What was once thought of as an unsanitary and dangerous activity has been transformed becoming fashionable and viewed as a righteous activity. Yet scrappers (those who routinely recycle for profit) often continue to suffer negative stereotypes. In some instances, these stereotypes may be warranted, particularly, the label of thief. This is not to say that a majority of scrappers are thieves. Current literature and the present study do not purport to know the percentage of metal thieves. Rather, research indicates that as the demand for metal increase so does the presence of scrappers (Zimring, 2005). Moreover, the entry-level knowledge and abilities required to function as a scrapper are so low it may attract those who are willing to engage in deceit or illicit behaviors to obtain metal. In other words, demand in metals begets increased financial rewards for scrapping, thus an escalation of scrappers, both scrupulous and otherwise.

In fact, as the worldwide demand for copper and other metals began to increase in the mid-2000s, the United States experienced an “epidemic” (Berinato, 2007, p. 1) of metal theft, which the FBI claims, “Threatens U.S. Critical Infrastructure” (FBI, 2008, para. 1). The Council of State Governments identified metal theft as, “one of the fastest-growing crimes in the United States” (Burnett, Kussainov, & Hull, 2014, p. 1). Metal theft took a prominent position in news media with fantastical stories of brazen metal thieves stealing everything from grave markers, bleachers, bridges, miles of electrical wire, air conditioners, aluminum siding from occupied homes, cars, electrical transformers from energized lines, lead roofs from churches and manhole covers. Moreover, many of these stories told of

significant damages and inconveniences related to the thefts. These collateral costs accounted for thousands of dollars of repairs over the value of the metal. In addition, news stories often cited far-fetched consequences, such as hospitals running on generators due to power failures, entire cities left stranded after a bridge was stolen or an island without power after lines were downed and stolen. In addition to these stories being common, so were the dire warnings of potential harms to society, such as exposure to live wires, non-functioning streetlights, missing guardrails and manhole covers, and flooded basements due to copper pipe theft, all of which might occur through metal theft.

Unfortunately, there is no national, state or regional clearinghouse with data on the prevalence or harms associated with metal theft (Burnett et al., 2014). Rather, the limited information known about metal theft has largely been collected from anecdotal stories, industry reports and individual cities collecting and analyzing data. This limited data indicates metal theft is a costly and dangerous trend. For example, Indianapolis, Indiana reported a 57% increase in metal theft between 2008 and 2013, which accounted for 10% of all property crime and cost an estimated \$16.6 million (Whiteacre, Terheide, & Biggs, 2014). The Rochester, New York Police Department investigated 585 burglaries related to metal theft from 2008 to 2010, which caused considerable damage to residential structures (Posick, Rocque, Whiteacre, & Mazeika, 2012). The Metropolitan Pima Alliance (2014) reported that Tucson, Arizona suffered \$2 million in damages related to metal theft in 2012, while Phoenix, Arizona estimated damages exceeding \$30 million, and identified over 3,000 air conditioner units stolen in 2011 alone.

In addition to local government, several industries, such as utilities, transportation and insurance providers keep limited statistics on thefts related to metal theft. For example, theft of beer kegs is estimated to cost the industry more than \$45 million annually (Fischer,

2008). The National Insurance Crime Bureau (NICB) reported a 3,000% increase in catalytic converter theft in 2008 (Stanfill, 2008), an 81% increase in insurance claims related to metal theft from property between 2009 and 2011 (Kudla, 2012), and identified nearly 70,000 insurance claims between 2006 and 2013 related to metal theft from insured properties. The Arizona Department of Transportation identified \$500,000 in costs related to metal theft in 2007 and 2008 (Schoenfelder, 2009) while the California Department of Transportation spent approximately \$50 million in repairs since it began tracking metal theft (CTC & Associates LLC, 2013). The Electrical Safety Foundation International (ESFI) (2009) estimated that metal theft costs utilities approximately \$80 million annually.

Metal theft has clearly increased and left in its wake significant costs associated with the stolen metal as well as collateral damages to structures, harming individuals and society at large (Bennett, 2008a; Kooi, 2010; Kudla, 2012). However, to date little research has been conducted on the thieves involved in metal theft. Still, the panic stoked by the extravagant media and law enforcement reports of metal theft sent state and local governments scrambling to do something. Despite the vacuum of knowledge on the topic, and specifically on metal thieves themselves, legislative bodies responded by increasing controls over recycling companies in an effort to prohibit the purchase of illegally obtained metals and in some cases passed legislation specific to metal theft or the collateral damage often occurring in conjunction with thefts. As a result, within a few years all 50 States had strengthened existing laws or adopted new legislation to combat metal theft (Burnett et al., 2014).

However, metal theft continued to be an issue and was seemingly unabated by new legislation and efforts to curtail it (Rinehart, 2015). This is likely due to the lack of knowledge about metal theft and metal thieves. Current scholarly research has rarely identified, defined or studied those within the subculture of scrapping. Moreover, even less

is known about metal thieves. The limited research on metal theft has only examined the prevalence, trends and other quantitative analyses. Additionally, these quantitative examinations have been limited in scope, substantively and geographically. Until researchers begin to understand and learn about the subculture of scrappers and, in particular about metal thieves, efforts to reduce metal theft will be futile.

The present ethnographic exploratory research will provides initial insights and theoretical explanations of an emerging subculture of scrappers, and more specifically, of metal thieves. Through observation, participation and unstructured interviews, the present study collected data on scrappers and metal thieves. This qualitative data is analyzed using a content analysis that identifies concepts and elements that provide the basis for analysis through grounded theory. The present study provides a brief examination of scrappers, studying the scrapping subculture and identifying taxonomies within. More specifically, the present study provides a rich understanding of metal thieves, their demographics, motivations, methods of learning and theft techniques. These findings contribute to the limited body of knowledge on scrappers and, more importantly, provide a rich understanding of metal thieves and guidance on metal theft prevention techniques.

II - LITERATURE REVIEW

Three broad types of metals are frequently stolen: precious, ferrous and non-ferrous metals. Precious metals include gold, silver, platinum, rhodium and palladium. These metals have been historically valued and have had important uses for thousands of years. Precious metal crimes often take the form of jewelry theft. The stolen jewelry is either kept for personal use or sold to jewelry purveyors, and is rarely altered from its original form (e.g., melted to form other jewelry). While jewelry theft is common (FBI, 2014; Jewelers' Security Alliance, 2014), it is not the focus of the present study. The only exception is a discussion of precious metals when stolen as part of other components (e.g., platinum in catalytic converters) and sold to recycling centers where their form is altered.

The second type of metal frequently stolen is ferrous metals. Ferrous refers to the presence of iron in metal, which results, among other things, in ferrous metals being magnetic. Ferrous metals are commonly used in society in the form of automobiles, appliances, cans, structural steel, stainless steel and more. Further, ferrous metals are the most commonly recycled metal in the world (John Dunham and Associates, 2013). However, given the weight and size of many ferrous items, theft is not as common as with non-ferrous.

The last type of metal discussed in the present study is non-ferrous materials such as copper, aluminum, nickel, tin, zinc and lead. These metals do not contain iron, hence they

are non-ferrous. Non-ferrous metals are often referred to as base metals, since they are combined in varying degrees to create different alloys such as brass. These metals are, generally, more valuable than ferrous metals due to their properties, uses and limited availability in nature. Non-ferrous metals are low weight, non-magnetic, resistant to corrosion and are excellent conductors of electricity. Base metals are preferred for theft due to the low weight, smaller size, easy identification and high value. Moreover, the frequency with which these base metals are stolen has led some (NICB, 2009), to refer to them as semi-precious metals in an attempt to compare the value of non-ferrous metals in the current commodities market with the values of precious metals.

Metal recycling is the process of repurposing various metals into new uses. In most circumstances, this involves melting metals and reusing the metal to create new products. Recycling is an important part of the metal industry. Metal recycling reduces the expenses of mining new raw sources and is a vital and necessary component in the creation of some alloys.

Metal Recycling is Big Business

Recycling is a big industry worldwide, and particularly in the United States. The recycling industry in the U.S. has a significant impact on the economics of the country. According to a report by the independent consulting firm, John Dunham and Associates (2013), the industry recycled more than 135 million metric tons of material and directly employed nearly 463,000 persons with another 325,000 jobs indirectly supported by the scrap industry. In addition to persons employed, the recycling industry also generates more than \$87 billion in annual economic activity. This economic activity accounts for 0.55% of the United States Gross Domestic Product (GDP), making it of similar size as the milk, aircraft and cosmetic industries. The industry and its employees create approximately \$10.3

billion in federal, state and local tax revenue annually. In addition, exports produced by the scrap industry are among the largest in the country providing additional jobs and tax revenue. Scrap metal accounts for 65% of the material volume of the industry and 75% of economic activity.

Historical Demand

Historically, demand for metals is nothing new. Nor is the concept that persons would acquire such metal illegally (Posick et al., 2012). Great Britain, for example, had laws punishing the theft of metal from buildings and ships, as well as a history of court cases involving such thefts stretching back to 1674, when court record keeping began (Bennett, 2008a). Research, which used an analysis of newspaper reports, found that metal theft occurred in the U.S. on a regular basis around the turn of the 21-century (Whiteacre et al., 2012). There is even evidence to suggest the nature and rate of metal theft in society is cyclical, corresponding with increases and decreases in demand (Bennett, 2008; Kooi, 2010; Roggio, 1998; Sidebottom, Belur, Bowers, Tompson, & Johnson, 2011; Sidebottom, Ashby, & Johnson, 2014). If these analyses are correct, the U.S. is experiencing a significant increase in metal theft, due to demand cycles.

The current cycle began as copper and other metals were slowly rising in price in June of 2003, after a historic low of 65 cents per pound on the London Metals Exchange in 2002. The rise occurred for many reasons including an increase of construction in North America and Europe, increased raw materials needed for the U.S. war in Iraq, commodities speculation, and most importantly, an emerging Asia market—primarily China and India—which were experiencing substantial economic development and industrialization (Bennett, 2008a). Along with copper, the other three key non-ferrous base metals—aluminum, nickel and zinc—became highly sought after, which caused their value to increase. On October 9,

2003, the Grasberg copper mine in Indonesia—the second largest supplier of copper in the world (International Copper Study Group, 2014)—suffered a significant mine collapse and slowed production. The decreasing supply and increasing demand for copper and other metals captured the attention of commodities speculators. They began to buy and trade metal futures, profiting millions of dollars. The result of this speculation, however, was disconnection between realities (supply and demand) and pricing of raw materials (Bennett, 2008a). This led, in part, to an artificial increase in the price of copper, as well as other base metals.

The commodities market was stimulated even further in 2006 when the U.S. Geological Survey announced that over 25% of the world's copper ore had already been used (Papp et al., 2007). At the same time, a claim by Lester Brown (2006) indicated that copper ore reserves would be depleted within 25 years. These theories caused some to believe that *peak copper* would soon be reached. Peak copper refers to the hypothetical point at which maximum global production of copper is reached, while demand continues to rise, resulting in a limited supply of copper—a finite resource—and thus increased prices (Simon, 1998).

These culminating events triggered a precipitous price increase, which peaked at over \$4 per pound for refined (non-scrap) copper by mid-2006. This represented a 515% increase in the price per pound of copper in less than a decade. As the price continued to increase, commodities speculators continued to speculate, and China and other countries continued to buy. In fact, global consumption of copper increased 41% between 1996 and 2006 (Jolly, 2009), yet copper mine capacity only increased 3.7% during the same time (International Copper Study Group, 2014). Due to the low price of these metals in the 1990s, many mines and refineries failed to increase or update mining and smelting capacity. The result was a

global deficit, specifically in copper, where consumption outpaced production. As production slowly began to increase, recycling filled the gap. Recycled copper accounted for only 13% of refined copper in 2005, however it gradually increased to 18% of all refined copper by 2012 (International Copper Study Group, 2014). As 2006 rolled into 2007, demand for copper and other metal prices began to wane along with the slowing of the global economy. Near the beginning of 2007, copper prices had settled around \$3 a pound and have since fluctuated significantly between \$2.00 in 2009 to \$4.58 in 2011.

As copper and other base metals reached historically lucrative prices in 2006, many individuals began to cash in by recycling metals. It seemed that everyone began to pay attention, from the farmer cleaning out his junk pile, to the plumber collecting scrap metal after a job, to the businessman stopping to pilfer through the junk set out for pick-up at the curb, to the less scrupulous who would steal it any way they could. When the price was right people took notice that metal was everywhere, and ripe for the taking. Reports of metal theft began appearing all across the United States. Items such as bronze plaques, catalytic converters from vehicles, brass fittings, aluminum siding, grounding wire, copper piping, electrical wires, air conditioners and even the brass nozzles off Houston, Texas fire trucks began to disappear at an alarming rate. Metal theft emerged as one of the fastest growing crime trends in the United Kingdom (Bennett, 2008) and the United States (Kooi, 2010; Whiteacre, Medler, Rhoton, & Howes, 2008).

While other metals were included in this rush to cash in on scrap metal recycling, copper became the most sought after metal, leading some to refer to the increase in demand as a “red gold rush” (Berinato, 2007; Bobrowich, 2013; Smith & Craze, 2010). This high demand for copper is due to several of its unique characteristics. There are few substitutes for copper’s many applications—from communication and electronics components, to

transportation and construction. Copper is the most widely used metal in the world (Copper Development Association, 2014) due to its ability to resist corrosion, conduct heat and electricity and its antimicrobial qualities (International Copper Study Group, 2014). Due to its wide usage, copper prices are often used as a proxy for base metal prices (Posick et al., 2012). However, copper is not the only metal frequently recycled. For example, recycled ferrous metal (steel) serves as a vital chemical component when manufacturing new ferrous metals, which cannot be substituted by virgin iron ore (Bennett, 2008a). In other words, recycled metals are necessary for the creation of new non-recycled metals.

During times of high demand, the value of recycled copper can be as high as 90 to 95% of the price of refined copper ore (Copper Development Association, 2014; Davies, 2008). Moreover, secondary copper (recycled or scrap copper) is appealing, when compared with many other metals, because the chemical and physical properties of copper are not negatively affected by the recycling process (International Copper Study Group, 2014). Due to this recyclability and the high demand and sluggish production of copper ore, by 2011 approximately 35% of all copper consumed in the United States was sourced from recycled copper (International Copper Study Group, 2014).

The historical demand for all types of metals has soared in recent years. Driven by increased uses in electronics, construction and market speculation, the production of metal has not kept up with demand. This has served to increase the price of recycled metals as the manufacturing industry has turned to scrap metal to meet the demand. While there is evidence that metal prices are cyclical, consumption does not appear to be waning globally. Bennett (2008a) concluded that “High prices, readily accessible materials in the built environment and informal infrastructure for the sale and integration of stolen metals back

into the production chain create a cycle of asset stripping that has major economic and social costs” (p. 182).

Prevalence of Metal Theft

With the unprecedented increase in demand coinciding with a dramatic price rise for secondary metals, metal thefts began to rise. At least that is what news reports and government agencies indicated. It seemed that news reports of extraordinary metal thefts filled the pages of local papers, and made their way onto local and national television shows, as well as internet sites. Industries and government agencies began to call the increase in metal theft a serious problem (Institute of Scrap Recycling Industries, Inc., 2011) and a threat to the critical infrastructure of the U.S. (FBI, 2008).

Unfortunately, a significant vacuum of knowledge existed. No one was sure of the exact amount of metal stolen in the United States, who was stealing it and the exact cost to society. Moreover, law enforcement agencies typically did not separate metal theft data from other types of theft. This lack of reliable data led many to rely on fantastical news media reports and anecdotal evidence as a measure of metal theft and its effects (Kooi, 2010). While there is little doubt that metal theft has increased, based on these reports there is insufficient empirical research to determine generalizable causes, or even the frequency, of metal theft (Bennett, 2008a; Kooi, 2010).

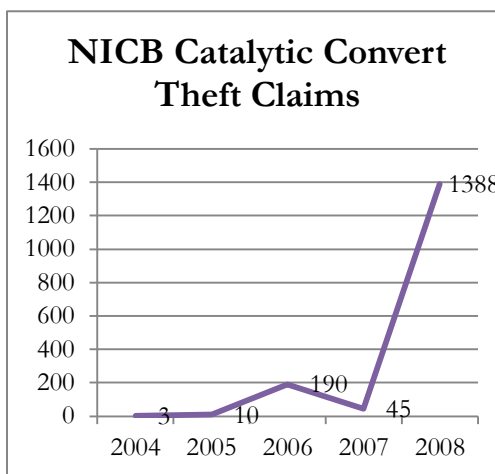
Council of State Governments. Dissatisfied with the void of data on metal theft and knowing the significant costs to state governments associated with these thefts, the Council of State Governments (CSG) launched a national investigation into metal theft in 2014. The results were discouraging, finding there was no comprehensive national source on metal theft data. CSG next turned to each state, and yet again, found no state retained comprehensive data on metal theft. Finally, CSG interviewed over 200 law enforcement

representatives. The results were mixed, with a few jurisdictions keeping records, but the techniques and types of data varied widely, as did the methods for retrieving the records, (many required a keyword search, which CSG found to be unreliable). This led the CSG researchers to conclude that comprehensive empirical metal theft data at national, state and largely local levels was not available (Burnett et al., 2014).

National Insurance Crime Bureau. Despite the fact that no national or state governments keep data on metal theft, a private organization does track insurance claims of metal theft in the United States. This data, which is the most reliable and largest source of metal theft data currently published, is collected and analyzed by the National Insurance Crime Bureau (NICB). The data the NICB utilizes is extracted from the Insurance Services Office (ISO) ClaimSearch, which is a clearinghouse where insurance companies submit claims data. Unfortunately, the data contained within the NICB's reports only represent insurance claims, which have three significant flaws. First, metal theft data may be missing due to the insufficient monetary loss necessary to file a claim or the property may not have been insured and thus no claim filed (Burnett et al., 2014). Second, the data were gathered through a query from the ISO ClaimSearch database for key words such as "theft", "took", "steal" and "missing" combined with the terms "copper", "bronze", "brass" and "aluminum". Therefore, significant areas of metal theft may not have been included. For example, Whiteacre et al. (2014) found 25% of all metal thefts in Indianapolis listed in police reports were appliances, which doubtfully were included in the ISO keyword search results. Moreover, misspellings of different types of base metals or the listing of other types of metal not included in the search (e.g., steel, iron, lead) would not be captured. Finally, the third significant flaw, according to NICB is that "the average delay between the theft occurring and the claim record entering ISO ClaimSearch was 31.3 days. "[Therefore,] some thefts that

occurred within the later months of [the] analysis may not have been entered at the time the data was collated” (Kudla, 2009, p. 4) resulting in missing data. The outcome of the NICB efforts is likely a significant underreporting of metal theft rates across the United States. Regardless of the potential shortcomings, the NICB reports provide the only national level data available on metal theft. Moreover, the findings are frequently utilized as the proxy for the rate of metal theft across the United States. Thus, it is important to examine these reports.

The first widely available report on metal theft by the NICB took the form of an analysis of catalytic converter thefts. A catalytic converter is part of a motor vehicle’s exhaust system, which reduces the toxicity of emissions. The unit is mounted in-line with the exhaust system under a vehicle and can be easily and



quickly removed with a metal saw. The catalytic converter contains a small amount (3 to 7 grams) of the platinum metal group such as rhodium, platinum and palladium (Specialty Metals Smelters & Refiners, 2014). At the time of the NICB’s research catalytic converters were selling at recycling centers for between \$20 and \$200 per unit. NICB queried ISO’s ClaimSearch database and discovered 1,388 claims from the first six months of 2008. This represented a dramatic 3,000% increase over the prior year (Stanfill, 2008). NICB concluded that the motive for these thefts was the record high prices for the platinum metal group (see The Price-Theft Hypothesis for further detailed discussion). No other statistical analysis was performed and the report stated, “The NICB cannot, at this time, accurately calculate the total number of catalytic converter thefts nationwide. There is however, a large amount of

anecdotal data such as media reports, interviews, claims information and NICB cases that indicate catalytic converter thefts are a growing and widespread problem” (Stanfill, 2008, p. 4). NICB has not published a follow-up study examining catalytic converter theft and no other organization is known to have examined the topic. Moreover, no other organization or government entity is known to track thefts of catalytic converters, thus the current trends and prevalence remains unclear.

The second report released by the NICB in 2009 again examined insurance claims utilizing ISO’s ClaimSearch. However, this search excluded catalytic converters and instead examined base metals (copper, aluminum, brass and bronze), as well as precious metals (gold and silver). NICB collected theft data over 35 months between 2006 and 2008. The results indicated that there were 13,861 claims for base metals (Kudla, 2009), or an average of 396 per month. The report also found that 94% of the claims listed copper as the metal stolen, that approximately two out of three thefts occurred on commercial policies and that 62% of all claims were for utility, construction or housing components such as piping, wire, plumbing, siding, cable, etc. There were 2,376 claims on precious metals, with 90% occurring on personal policies. NICB provided a listing of the top ten states and cities with the highest claims of both base and precious metals; however, the rankings were not weighted according to population and are of limited value. NICB concluded the report by indicating base metal theft accounted for nearly six times the thefts of precious metals, and discussed the relationships of theft with the high prices of metal, and the easy access to base metals as driving the trend.

The NICB released its third report relating to metal theft in 2012. The report examined the insurance claims of base metal thefts, reported from January 2009 through December 2011. The investigation revealed 25,083 claims submitted for metal theft (Kudla,

2012). This represented an 81% increase between 2009 and 2011, of which copper accounted for 96% of all claims. The report continued by examining the relationship between price and copper theft as well as claiming a relationship between drug usage and copper theft. The report also identified 55% of the claims were from commercial policies with the remainder on personal policies. This time NICB evaluated the rates of metal theft claims per 10,000 residents in each state. Findings indicated that the top five states for claims of metal theft were Rhode Island (2.587), Delaware (2.039), Ohio (2.077), Kentucky (1.781) and Georgia (2.039) (Kudla, 2012). Unfortunately, very little discussion or statistical analysis is provided in this report and it is difficult to draw conclusions other than a snapshot of national insurance claims for metal theft between 2009 and 2011.

The NICB followed up the 2012 report with a very brief media announcement in 2014 stating insurance claims of base metal theft between 2011 and 2013 dropped by 26%. However, this analysis did not include a monthly statistical categorization as the previous reports had, thus a monthly comparison of metal theft trends is not possible. A request for month-to-month data for the present study was denied. The 2014 NICB media release identified just over 41,000 claims related to copper, bronze, brass or aluminum between 2011 and 2013 revealing 97% of all claims were for copper theft. The report concludes saying, “NICB sees hopeful evidence that the national problem of metal theft might be decreasing” (NICB, 2014 p. 1). NICB bases these hopes on legislative efforts aimed at crime prevention, police response and citizen awareness; however, it provides no empirical support of these claims.

The data collected by the NICB has substantial design flaws and is subject to evaluating only the insurance claims for metal theft. Moreover, the data collected has not been distributed in a method that allows for advanced statistical analysis. However, despite

the flaws it is the only data available, to date, on the long-term national trends of metal theft. What is more, it was the first organization to evaluate the relationship between prices, drug usage and other variables along with metal theft. Despite its weaknesses, it is an important benchmark for future studies.

Indianapolis Metal Theft Project. With the lack of national and state data on metal theft, the only other resource available to determine the prevalence of metal theft is at a local level. While most localities do not track metal theft, (Burnett et al., 2014), Indianapolis, Indiana does. This data collection effort was spearheaded by Kevin Whiteacre of the University of Indianapolis Community Research Center (CRC). In collaboration with the Indianapolis Metro Police Department (IMPD), the CRC provided the first empirical study conducted in the United States on many aspects of metal theft. Whiteacre identified a lack of scholarly research in the area of metal theft, also observing that most organizations, governments and individuals rely on anecdotal experiences or news stories, which frequently portray “fantastic crimes” (Whiteacre et al., 2008, p. 6). Collaborating together IMPD and CRC worked to, “gather and analyze a wide variety of data that will provide a clearer understanding of the incidence, types, costs and impacts of metals theft in Indianapolis in order to inform and implement strategies to reduce these crimes” (Whiteacre et al., 2008, p. 4).

The first effort toward this goal was accomplished through a pilot study by collecting and analyzing data from IMPD crime reports between January and March of 2008. Researchers identified 678 reported instances of metal theft in Indianapolis. This converts into 7.7 metal thefts per 10,000 persons¹ living in Indianapolis. Personal residences

¹ According to US Census Bureau July 1, 2008 the population for Indianapolis Indiana was 880,380.

accounted for over half of all reports (55%) with 24% occurring at commercial businesses, 15% automobile related and 5% occurring at churches. Copper was the most commonly stolen item accounting for 32% of all metals. Researchers also examined the cost of metal theft, finding an average damage estimate of \$4,314 per theft.

The most recent publication from the Metal Theft Project is a Research Brief published by the CRC examining data covering a 24-month period (October 2011 – September 2013). This represents the first detailed time series analysis conducted in the United States on metal theft. Whiteacre et al. (2014) found a considerable increase in metal theft from the 2008 pilot study, an increase of some 57% (an average of 11 metal thefts compared to seven per day in 2008). The study also discovered the theft of metals was involved in nearly 10% of all reported burglaries and thefts in Indianapolis in 2012.

Copper was, again, the most commonly stolen metal accounting for 34% of metal thefts. However, appliance theft increased 127% from the 2008 study to account for 25% of all metal thefts in 2011 and 2012. Appliances often contain a small amount of base metals (e.g., copper) and are made structurally from ferrous metals (e.g., steel and tin). Whiteacre et al. concluded appliance theft this is an indication metal theft is becoming, “more organized and purposeful than the odd thief with a shopping cart or backpack” (2014, p. 2). While the study found a substantial increase in instances of metal theft, there appeared to be a decline, by nearly half, in victim estimates of property loss with an average of \$2,034 per incident. While the data collected and analyzed within these studies is important it should be noted that these efforts, as well as statistical trends, represent only one community and may not be representative of the nation as a whole.

After the success of the pilot study in 2008, the CRC and the IMPD have continued to collect data. However, other than the research brief discussed above, little data has been

analyzed or published (Whiteacre, 2014). Some findings have been presented at professional conferences (see: Allender & Whiteacre, 2009; Lammert & Whiteacre, 2009; Medler, Rhoton, Allender, & Whiteacre, 2008; Schafer & Whiteacre, 2009). Therefore, while this project remains the most extensive and thorough examination of metal theft, to date, additional data and extensive evaluation are needed before the prevalence and consequences of metal theft are fully known.

Rochester, New York. The only other city known to keep data on metal theft and to publish the data is Rochester, New York. Chad Posick (2008) with The Center for Public Safety Initiatives at the Rochester Institute of Technology made use of data provided by the Monroe Crime Analysis Center. The data examined the theft of copper from residential and public structures (occupied and unoccupied) which were referred to as copper burglaries. The working paper published provided few statistics, but discovered copper burglaries in Rochester averaged 30 per month in 2007 and 2008. Of those copper burglaries 80% occurred in a vacant property.

In 2012, Posick et al. conducted a second analysis of the Rochester data. This study examined copper burglary over a 27-month period, from 2008 to 2010. During this time, 10% of all burglaries in Rochester were related to copper theft. The authors examined the data through a spatial analysis, price-theft analysis using variables such as time, entry methods, vacant buildings and more. Other sections of the present study will examine these areas in more detail.

Prevalence Conclusion. In summary, there is little national or state data on the prevalence of metal theft (Burnett et al., 2014). While some cities do track metal theft, Rochester, New York and Indianapolis, Indiana for example, they are few. Even the industries hardest hit by metal theft, such as public utilities, do not keep accurate records.

This represents a cause for concern. In addition to the lack of data on the prevalence of metal theft, nearly nothing is known about the victims, offenders, or the harm caused by these thefts. Bennett (2008a) concluded there is, “little research aimed at understanding the causes and consequences of, or developing the necessary policy response for, dealing with this problem” (p. 183). If the extent of the problem is unknown, it will be very difficult to examine the trends and effects of metal theft, let alone develop policies, strategies and laws to combat it.

Costs & Harms to Society and Individuals

While the prevalence of metal theft incidents is largely unknown, another common method for examining crime, the estimation of costs and harms, may provide insight into the damages caused by metal theft. There are often several methods for identifying harm when examining crime. Some of the more popular are an examination of direct costs of the items stolen and the indirect costs and harms related to theft. Direct costs are the losses that are directly related to the value of replacing the item stolen. An example would be the cost or value of copper wiring stolen from an abandoned property and the expense to replace it. The indirect costs associated with stolen property include the costs related to repairing the damage done by thieves to acquire the metal, as well as the costs associated with increased insurance, productive time lost due to the theft and more. Both types of losses are important to evaluate and understand when studying crime. Moreover, costs and harms, especially indirect, are important to study, given the nature of the crime, which often leads to significant indirect costs to individuals and society. The following sections will examine what is known about the costs associated with metal theft and its impact, directly and indirectly, on individuals and society as a whole.

Direct Costs. Estimating direct costs to individuals due to metal theft is a difficult task. This is primarily due to two reasons. First, there is a lack of data available to quantify the amount or value of stolen metal. Second, the damages caused to obtain metals (e.g., damage to a structure when removing copper pipes) are often not recorded. These two factors present a significant hurdle to asserting the true direct cost of metal theft. As discussed previously, several organizations within the United States collect data on the prevalence of metal theft, the city of Rochester, New York, the Indianapolis Metal Theft Project, the NICB and to some degree the U.S. Department of Energy (DOE). However, only two, the Indianapolis Metal Theft Project and the DOE make any effort to identify and quantify the costs associated with metal theft. Since most utility and transportation companies are publically owned, the majority of their costs will be examined later under the indirect costs section.

Direct Financial Costs to Replace Metal. The Indianapolis Metal Theft Pilot Study by Whiteacre et al. (2008) examined, among other data, the claimed value of metal stolen as reported to the police by each victim. The pilot program, covering the first three months in 2008 identified 678 instances of metal theft. Of those, 25% (169) of the victims provided estimates for the value of metals stolen. The average estimated loss was \$4,314, with a median loss of \$1,500. For those thefts in which a loss estimate was not included, the researchers calculated a loss based upon the average of known losses. Their findings concluded that approximately \$1 million in losses each month occurred in Indianapolis during the first three months of 2008.

The Indianapolis Metal Theft Project provided a second estimate in 2013, which examined police reports of metal related thefts during 24 months (October 2011 to September 2013), identifying 8,149 incidents of metal theft. The second report does not

specify the number of persons who provided police with an estimated value of loss as the first report in 2008 had. Therefore, it is not clear how the results were analyzed.

Nevertheless, Whiteacre et al. (2013) concluded that there was a \$16.6 million-dollar loss in Indianapolis over 24 months (or \$690,000 per month), due directly to metal theft. The findings indicated the mean loss was \$2,034 with a median of \$537.

It is important to note that in both studies the researchers identified the potential weaknesses of the data and their conclusions. In the pilot study, they expressed concern calculating average losses for the entire group based only on 25% of the respondents who provided an estimate. In both studies, the authors noted that the average was substantially higher than the median, indicating that several high value losses skewed the mean upward. Finally, in the 2013 study, researchers stated that it was not clear if the victims were, “estimating replacement costs, collateral damage, or just the perceived value of the item at the time of the theft” (Whiteacre et al., 2013, p. 3). Despite the potential weakness of the data, these two studies are valuable in literature, as they are the only known analyses of the direct cost of metal theft to individuals in the United States.

Repairs & Other Associated Costs. As discussed previously, costs to replace the metal actually stolen may be significantly less than the damages caused to structures or devices that contain the metal. For example, a stolen twelve-inch section of copper pipe, which had emerged from a poured concrete foundation, cost significantly more to repair than the value of the copper. The time, equipment and resources necessary to remove enough concrete to re-attach a copper pipe to the existing line, and then replace the concrete, are often not considered when discussing metal theft. Other examples include the damage done to a structure when water pipes are removed and flooding occurs or wires are torn from behind drywall. Additional costs include repairing devices or materials damaged by

thieves in order to gain access to metal. These may include windows, doors or the destruction of an air conditioner unit to obtain copper (Posick et al., 2012).

Each of these examples and many others demonstrate the broad extent to which damage and expenses may occur during metal theft. This broad array of damages and the substantial costs associated with them are not typical with other types of theft or crime. Thieves may be stealing only a few dollars' worth of metal, but cause thousands of dollars in collateral damages to acquire it (Bennett, 2008; Posick, 2008). A survey by the Electrical Safety Foundation International (ESFI) (2009) of electrical utility companies found that the average cost to repair a single instance of metal theft was more than two-thirds the value of the metal. In total, the survey indicated that utilities spent \$20 million to replace the actual copper item stolen (often copper wire or transformers), and \$60 million in related expenses to repair the item or facilities damaged and other costs.

Direct Cost Conclusion. Unfortunately, the direct cost to individual victims of metal theft is difficult to quantify. Once again, the primary problem is a lack of data. The majority of what is known is based on estimates from individuals. With the exception of data from the Indianapolis Metal Theft Project, estimates are usually conveyed through news reports and other anecdotal stories and may or may not include replacement costs, collateral damage and other important costs associated with metal theft. Despite the lack of data, it does appear that there are significant direct costs to individual victims. Direct costs of metal theft, should not only include the item stolen, but the damage caused to affect the theft as well as the labor and other factors that are necessary to make the victim whole. Until more data is gained in this area, true direct costs of metal theft will remain unknown.

Indirect Costs to Society. The victims of metal theft are arguably the entire population (Blythe, 2008). While the largest percentage of thefts occur on individual private

property, the remainder of thefts take place at a business (Wilkinson, 2012), government utilities (DOE, 2010), churches (Walter, 2011), foreclosed properties (Kooi, 2010) and even cemeteries (Breen, 2008). The result is a huge number of persons who are directly impacted. However, this list does not include people who experience the indirect costs and harms of metal theft. Those persons include those who suffer from higher insurance costs (Wilkinson, 2012), increased utility costs or service delays (DOE, 2010; ESFI, 2009), interruptions in travel (GLA Transport Team, 2012), missing road signs and manhole covers (Alusheff, 2012) and other nuisances and harms that arise due to metal thefts. What little literature that exists indicates that the indirect costs of metal theft extend well beyond lost metal (direct costs) associated with metal theft (Posick et al., 2012). The following sections identify many of the indirect costs associated with metal theft.

Deaths and Injuries. There is no doubt that stealing metal can be a dangerous task. This danger is amplified when thieves steal energized material, especially or when operating in a confined space, which is energized, such as an electrical substation (Baker, Al-Benna, Thompson, & Watson, 2008; Kooi, 2010). Reports of death or serious injury of metal thieves is largely reported in the news media and medical journals. Physicians have been documenting electrocution related to metal theft since the early 1980s (Taylor, McGwin, Brissie, Rue & Davis, 2003). One study in the Department of Plastic Surgery and Burn Centre in Palermo, Italy reported 8.5% of all patients admitted to their unit from 1992 to 2007, were a direct result of serious injuries related to copper theft. Physicians also noted a significant increase in cases since 2006 (Curinga et al., 2010). Moreover, Taylor et al. (2003) examined coroner reports from Jefferson County, Alabama between 1981 and 2001, finding that eight subjects died while attempting to steal metal. The link to metal theft in these cases was inferred from the materials discovered at the scene, such as ladders and cable cutting

tools. Taylor et al. (2003) also discovered that five of the eight killed stealing copper had alcohol or cocaine in their systems at the time of their death. Unfortunately, it is difficult to measure the number of persons who are injured while attempting to steal metal, since many individuals may not seek medical care for minor injuries, or may be less inclined to explain the source of injuries for fear of prosecution (Curinga et al., 2010).

However, the best source for extensive data on the prevalence of injuries sustained by metal thieves comes from the DOE, Office of Electricity Delivery and Energy Reliability, which monitors threats and risks to the energy infrastructure. In 2007, the DOE produced a report, *An Assessment of Copper Wire Thefts from Electric Utilities*, which examined metal theft by utilizing internal data as well as news stories and open court records from January 2006 to March 2007. The study indicated 21-suspected thieves died of electrocution while attempting to steal copper wire from electric utilities. Moreover, the ESFI (2009) found in a survey of utility companies that 19 thieves were reported injured and 13 killed due to stealing copper from an energized utility in 2008. However, in 2008, there were also 18,400 documented metal thefts from energized facilities (ESFI, 2009). If these numbers are an accurate reflection of the dangers involving metal theft from energized lines to metal thieves, then only 0.001% of all theft incidents in energized areas result in an injury. The infrequency of documented injuries related to metal theft on utility property led the 2010 DOE report, *An Updated Assessment of Copper Wire Thefts from Electric Utilities* to conclude, “Thieves have rarely been injured or killed during copper theft attempts” (p. 7). What the data demonstrates is that stealing metal from energized lines can be dangerous for the thief (DOE, 2007, 2010; ESFI, 2009), especially when intoxicated, (Bennett, 2008b; Taylor et al., 2003) however, given the low number of injuries and deaths, the indirect costs to society and harm may not be as significant as alleged.

Many fear that the metal thieves themselves are not the only ones at risk of death and injury when thefts occur at utility places. Concern over employees injured or killed, “when touching wires or equipment energized due to theft,” or the public, “particularly children...accessing the site and encounter[ing] dangerous high-voltage wires or equipment” (p. 9-10) are discussed by the DOE in their 2007 report and by many others who claim this possibility. However, despite these concerns, the DOE 2010 report stated it has never received notification of injury or death of a utility employee or member of the public related to a metal theft incident.

There is also great concern that the public is placed at other (non-electrocution) risks due to metal theft. These fears are believed to be caused by many factors, such as missing guardrails, unlighted highways, electrical disruption at hospitals, missing manhole covers and more (Munford, 2006). However, the present study was unable to identify a single incident of death or serious injury to the public that was attributed to metal theft in the existing literature or news media. It would appear that the discussion on the dangers of death and injury related to metal theft might be overstated. Very few thieves have been injured or killed due to metal theft. Moreover, there appears to be inconsequential reasons to be concerned for the general public welfare due to metal theft as there are no documented cases of injury in the existing literature.

Utility Companies. Utility companies, which rely heavily on copper and other base metals to function, include electrical facilities, cellular towers, telephone communications, railroads and water companies. These institutions are also prone to significant losses due to metal theft. Governmental agencies warn of devastating effects on utility companies if metal theft continues (DOE, 2007, 2010; FBI, 2008). Moreover, there are significant numbers of news reports replete with anecdotal stories of harm to utility systems due to metal theft

causing blackouts and other chaos (Kozlowksi, 2008; Southwire Company, 2012). However, even among utility companies, it is difficult to track metal theft on a regional or national scale, as there is no clearinghouse for this type of data. The only two studies that attempt to do so are examinations of news media reports, court cases and selected internal data by the DOE and through a survey of electrical utilities by the ESFI.

Despite the hype of significant damage and impending critical infrastructure failure (FBI, 2008), national studies by the ESFI (2009) and DOE (2010) found that the average loss per incident due to a copper theft at most utilities to be minor. These studies found an average expense of \$1,200 for repairs after most instances of theft. Moreover, the DOE (2010) found, according to an internal report—*Energy Assurance Daily*—power failures due to copper theft have been minor, accounting for only 1% of all outages. Moreover, the outages classified as related to copper theft lasted only 420 total minutes during all of 2010. The DOE concluded that, “With the current systems and procedures in place to safely operate and protect the bulk of electrical grids, the loss of a single substation due to copper wire theft has not threatened the entire power grid” (DOE, 2010, p. 5). The study further stated that there have never been any recorded attempts to render an electrical system inoperable other than for the mere economic gain of copper, and as of 2010 said, “copper wire theft has not posed a national security threat to the United States” (DOE, 2010, p. 6).

In 2009, ESFI conducted a survey of public utilities in the United States to examine copper theft. Six hundred and eighteen utility companies completed the survey, representing approximately 20% of all electrical utility companies. The survey solicited information, “regarding the respondents’ experiences related to copper materials stolen from them; the effect such thefts had—in terms of injuries and facilities, economic harm and lost service time; and the means by which utilities are addressing the problem” (ESFI, 2009, p. 3). The

survey discovered 95% of utilities experienced incidents of copper theft in the last 12 months (during 2008) and 81% were extremely concerned about copper theft. According to ESFI, the annual loss due to copper theft nationally from utility companies was over \$80 million in damages and additional expenses. Other examples of the collateral damage caused by metal theft included an electrical co-op in Oklahoma that suffered the loss of \$100 of copper grounding rod to metal thieves. However, prior to the discovery of the theft a lightning strike caused \$1 million in damages to the substation (Cooperative Connections, 2011).

The reports and findings discussed here represent the direct costs to utility companies, but more importantly represent the indirect costs and inconveniences to utility customers. Clearly, any costs created by down time of the electrical grid are borne out by individual users in an indirect way. Those who are left without electrical service suffer from the inconvenience of not having power, heat or other amenities. However, many may also suffer financially if they operate a business that relies heavily upon electricity, such as a grocery store or manufacturing company. Beyond issues related to the inconveniences and potential lost revenue due to power interruptions, the cost to repair the utilities must also be considered. Many utility companies are publically owned or rely on service fees; therefore, it is likely that costs associated with metal theft will be passed along to utility customers. Unfortunately, at this time it is difficult to know the true extent of utility damages naturally and its indirect costs to society. However, the data that has been evaluated indicates there may be significant indirect costs associated with metal theft from public utilities.

Public and Jointly Owned Property. Utilities are not the only public organizations that experience indirect costs associated with metal theft. Many cities have indicated they experience significant losses related to metal theft. Examples include stolen park benches,

bleachers, bronze grave plaques, manhole covers, street signs, bridge parts, playground equipment and copper wires. Beyond the infrastructure often stolen or damaged, the 2008 economic decline affected many homeowners, resulting in an unprecedented rate of foreclosures. These foreclosed houses were often abandoned and in many instances, ownership assumed by the local government. This presented a significant issue, as abandoned homes are the prime targets of metal theft (Kooi, 2010; Posick, 2008). In fact, Posick's 2008 study of copper related burglaries in Rochester, New York found that nearly 80% of copper related burglaries occurred in abandoned structures, and many of those properties were owned by the city. Moreover, these thefts often left costly damages to the property, including flooded basements, gas leaks, wall and floor damage and other costs related to thieves removing pipes and wires (Posick, 2008). While Posick's study did not specifically examine the costs to the city, these types of damages are costly and significantly affect the value of the property. This damage can substantially affect the owners, whether banks, individuals or local governments, as costly repairs must be made prior to resale.

Unfortunately, while many cities bemoan these costs to infrastructure and abandoned properties when interviewed for news reports, the present study was unable to locate an examination of the specific costs associated with these types of theft for any city or county. Moreover, the present study was unable to locate published loss estimates due to metal theft from banks owning foreclosed property or insurances companies. However, it should be concluded that there is likely significant loss associated with metal theft to local governments, banks, insurances companies and other organizations. Further, those costs have negative effects on the budgets of these organizations and government, which are indirectly, passed on to their members.

While little is known about the indirect costs shared among public and jointly owned properties in the United States, there are two organizations in Great Britain that track metal theft in this capacity, and report on the associated costs. Ecclesiastical Insurance Group is an insurance company that insures over 90% of church properties in Great Britain. Ecclesiastical published a report in 2014 indicating that between 2007 and 2013 it received 11,000 claims from churches covered by its insurance due to metal theft. The most commonly stolen items were lead and copper roof materials, followed by copper wires, gutters, statues and other metal objects, including bells. Ecclesiastical estimated the total financial loss at £28 million or just over \$42 million U.S. dollars. Ecclesiastical characterizes the loss of important heritage to the structures (many of which had original lead roofs dating back over 200 years) as irreplaceable. The insurance group also discussed the related financial losses arising from the thefts as a major problem, which small congregations are unable to bear. These costs included, “damage to the stonework caused during the course of the theft...water damage to internal furnishings” (p. 1) as well as other related damages. In the cases of many of the churches covered by Ecclesiastical Insurance it is obvious that the damage and losses related to metal theft are far greater than the actual loss of the material. The loss of “irreplaceable heritage” (p. 4), costly repairs to damaged structures and more indicate a significant cost related to the theft. Damage to churches, especially historical church buildings indirectly affects members, insurance companies and society as irreplaceable historical structures are often permanently altered or damaged.

The only other organization known to keep statistics on damages related to metal theft and associated indirect losses, is the British Railway System. The British Railway system is owned and operated by a semi-private organization, Network Rail. Network Rail estimated that between 2008 and 2011 it lost more than £42 million or around \$64 million U.S. dollars

in repairs and other expenses related to the theft of metal (Network Rail, 2011). Beyond this financial loss, Network Rail estimated that during the same time, the theft of energized copper cable delayed trains by more than 365,000 minutes, affecting nearly four million passengers. While the costs of repairs clearly affect the operating expenses of Network Rail, the delayed travel time may have had an indirect impact on those serviced by the rail line.

Unfortunately, these examples are the only known published data on the indirect costs related to metal theft. However, they clearly indicate a significant cost in both direct replacement and related costs of metal theft to government and other private jointly owned properties. These thefts are likely to affect the financial status of these organizations and the individuals connected with them. However, beyond mere financial costs, there are other intangible costs associated with metal theft. The loss of a historical roof, damage to a historic structure, the inconveniences of missing street signs, bleachers or playground equipment, and the loss of productivity related to power interruptions and travel delays, are indirect costs that are difficult to calculate, yet are experienced by many in a community.

Environmental Costs. Beyond the financial costs and inconveniences related to the theft of metal, damage to the environment may be occurring as well. These environmental costs may often go unnoticed in metal thefts. However, environmental damage does occur due to the theft of metal and the techniques used to obtain it (Lammert & Whiteacre, 2009). For example, copper wires are frequently stolen from utilities and abandoned houses (DOE, 2010). However, recycling centers pay a lower price for copper wire that is sold to them with the protective plastic coating intact. To receive the premium price for copper the wires must be “stripped”. Stripping wire is the process of removing any protective coverings to expose the bare copper wire. This can be done utilizing hand tools, but is time consuming when working with large amounts of wire. Wire-stripping machines are designed for this type of

work, however; they are expensive and in some states illegal to purchase without an electricians' license (e.g., New York). Since thieves may not be able to purchase a wire-stripping machine, many simply resort to burning the plastic coating off the wires (see Berinato, 2007 & Wonder, 2008). This is often done over an open flame, thereby releasing toxins into the atmosphere.

Similarly, air conditioner units produce toxic risks if not recycled properly. Comparable to copper wire, recycling companies pay premium prices when different types of metal are separated prior to purchase. This is especially true for copper parts. Therefore, thieves who target air conditioners often dismantle them to gain access to the copper coils within each unit, as well as to sell the remaining metal components. Unfortunately, dangerous toxins such as chlorofluorocarbons (CFCs), Freon (HCFC-22 or R-22) and other chemicals are used as refrigerants inside air conditioners. These chemicals, if not handled properly, are released into the environment and can, "cause serious harm to public health, including skin cancer, cataracts and suppression of immune systems" (Alverson, 2014, p. 1). It is doubtful that many metal thieves are environmentally conscious enough to dispose of the chemicals in a legal manner.

While environmental issues connected with metal theft may appear insignificant, the Environmental Protection Agency (EPA) disagrees (Alverson, 2014). For example, a defendant was successfully charged and sentenced with violating the EPA's Clean Air Act when he released refrigerant from 49 stolen air conditioners which, according to the EPA, "posed a significant threat to the Earth's ozone layer" (Alverson, 2014, p. 1). The prevalence of metal theft in the United States is unknown, and therefore it is difficult to estimate the damage posed by releasing toxic chemicals from burning plastic or discharging refrigerants

into the atmosphere. However, toxic chemicals carry a risk to all of society and are an indirect harm to everyone's health.

Crime Prevention & Mitigation. Many of the indirect costs associated with metal theft are the efforts by individuals and organizations to prevent or mitigate its effects. These efforts may include physical security measures, hiring security guards, costs related to the investigation and prosecution of metal thieves, or the inconveniences and expenses related to legislation aimed at curbing metal theft. While there is no published information to determine the degree to which individuals and organizations engage in these practices, anecdotal reports and casual observations make it apparent these efforts are common. Whether due to being a past victim, or out of fear of becoming a future target, it appears many individuals and organizations are taking preventative measures in the hopes of negating costly losses and repairs due to metal theft. As one recycling center owner said, "If you don't want people to take the metal, you've got to start treating it like what it is—an asset" (Berinato, 2007, p. 3). It would appear that many people are treating metals as an asset, which affects the finances of most organizations and individuals.

Utility and transportation companies appear to be at the forefront of metal theft, both in victimization as well as in efforts to prevent theft and mitigate damages. The 2008 survey by ESFI found that nearly 95% of electrical utility companies in the U.S. have changed storage or security procedures in order to prevent copper theft. Efforts included installing security cameras, increasing fencing, additional signage, installing alarm systems, altering copper material storage and handling, improving lighting, enhancing visibility, increased security patrols and other techniques. Many of these changes in procedures and physical structures are costly. For example, the survey found that utilities spent a combined

\$26 million between 2003 and 2008 to prevent or mitigate the threat of copper theft. This amount is significant, as metal theft was not typically a concern until late 2006 or early 2007.

Transportation companies have also been hard hit by metal theft. The Arizona Department of Transportation and Caltrans (California's Department of Transportation) separately hired independent research firms to study the problem of metal theft in transportation systems across the country and present options for prevention and mitigation (CTC & Associates LLC, 2013; Schoenfelder, 2009). Included in their findings were dozens of recommended theft prevention devices and techniques, from increased surveillance and fencing to use of alternate materials (aluminum rather than copper wires) and alarms. Many of the proposals would involve considerable funding to implement.

In addition to the costs of physical efforts to prevent crime, suggestions that would require considerable labor costs were also made. These ideas ranged from welding utility access openings (e.g., manhole covers) closed, to filling electrical access areas (e.g., pull boxes at the base of light poles) full of concrete and rebar (Schoenfelder, 2009). Each of these, and other techniques suggested, would result in increased costs of labor to implement the techniques and the time necessary to remove these theft impediments when service was needed.

Unfortunately, it is likely that these indirect costs related to crime prevention will continue. Especially, since there does not appear to be any empirically published research evaluating and comparing the effectiveness of different products or design strategies at deterring theft from DOT infrastructures. Moreover, "No study has yet compiled all the best practices in this area" (CTC & Associates LLC, 2013, p. 3). For example, the expenses for metal theft prevention and mitigation efforts by Caltrans were \$50 million in the years leading to the independent study in 2013 (CTC & Associates LLC, 2013). Without

knowledge of which prevention techniques are effective, utilities, transportation departments and many others may be disbursing funds and incurring labor costs on efforts that fail to prevent or mitigate metal theft.

Furthermore, many individuals and businesses may experience indirect expenses and inconveniences due to prevention and mitigation efforts. These effects may manifest themselves in criminal justice expenses, inconveniences of legally selling scrap and increased legal requirements on business. Prosecution remains an important aspect of metal theft deterrence (Southwire Company, 2012). However, effective prosecution requires personnel and other resources from the law enforcement community, the legal system and corrections. Nonetheless, many of these institutions are suffering from diminished budgets and high workloads. Daniel Waterfield, Assistant Council and Director of Government Relations at ISRI stated, “[Police] don’t have the resources and manpower to deal with what’s traditionally been considered a low-level property crime” (Waterfield, 2014, para. 5). The difficulty in investigating the cases (e.g., most stolen metal has no identifying marks and is quickly disposed of) and legislation which fails to provide adequate penalties for metal theft result in those who are convicted rarely serving prison or jail time (DOE, 2007). Low prosecution and sentencing rates may lead law enforcement to not “take the time to arrest if [prosecutors] won’t do anything” (Holeywell, 2014, para 6). The difficulty and expenses involved in investigating metal theft cases, combined with limited legal remedies and lack of awareness of the prevalence result in infrequent investigations and convictions that are even more infrequent and sanctions. The infrequency of investigation and prosecution may actually embolden metal thieves and thus, indirectly encourage a “migration to [metal theft from another more] risky enterprise” (Southwire Company, 2012, p. 5).

Beyond the expenses and legal difficulties, surrounding metal theft prevention is the increased legislation, which may cause significant inconveniences and loss of income to both individuals and industries. According to the Council on State Governments (2014) all 50 states have, strengthened or passed new legislation designed to reduce metal theft. A majority of this legislation involves sales restrictions, including requiring recycling centers to maintain detailed records of transactions; keep copies of government issued IDs and license plate numbers, fingerprints, and/or delay or require certain payment methods. For example, many states require a three-day waiting period and may only pay through check sent to the address on an official ID. Other legal restrictions include requiring recycling centers to hold the items purchased for a certain period of time (Fischer, 2009), which is often referred to as *tag-and-hold*.

While many of these efforts are well intended, they may also be an example of the indirect harm some crime prevention techniques have on business and the public. For example, states, which require a current photo ID to sell metal to a recycling center may prohibit indigents who may not have an ID from an important, and often legal, source of income, through recycling. Moreover, recycling centers required by law to tag-and-hold metals for extended periods may be negatively affected. Because the price of metal is highly volatile, the amount the recycling center pays to acquire the metal may be significantly more than what they can re-sell it for if a waiting period is required by law. For example, Georgia had a provision in state law requiring each secondary recycler to hold, in its original condition, certain metals for a period of five days. However, the finding by the Georgia Metals Theft Task Force in conjunction with the Georgia Association of Recycling Industries, in 1991, was that the provision, “did not, and would not, result in a reduction in theft or an increase in the apprehension of scrap thieves” (p.1). As a result, that section of

the law was repealed and replaced with a provision that authorizes law enforcement to place a warrantless hold on suspicious metals for up to 30 days for the purpose of an investigation (Georgia Recyclers Association, 2010).

In addition, legal restrictions on recycling centers often necessitate purchasing software to capture photos of scrap, ID, detailed logs of purchased material and other information. These systems may cost anywhere between \$20,000 and \$50,000 or more (Chelan, 2010). These costs are significant for many recycling centers, especially small and locally owned businesses facing these increased legal requirements. Moreover, these issues may not only affect the income stream of a business, but also drive purchase prices to the consumer lower in an effort to recover the costs associated with complying with legislation. Unfortunately, the list of legal restrictions on recycling centers continues to grow at a significant pace. For example, during the 2013-2014 legislative year there were over 220 bills introduced into state legislatures regarding metal theft (CSG, 2014), many of which involved requirements and compliance of recycling centers. These continued legal requirements may pose a significant burden on the industry, which may pass the economic burden along to legitimate customers. Moreover, there is no indication that these legal requirements have affected the rate of metal theft (CSG, 2014; Mota, 2013). Further, some research actually suggests that these types of restrictions may cause harm to legal recyclers. Fass and Francis (2004) argue, “Efforts to disrupt markets for stolen goods are unlikely to succeed...Markets for hot goods are inseparable from the market for all secondhand wares. Reducing demand for stolen goods, therefore, implies disrupting the whole retail market for used merchandise” (p. 157).

Costs & Harms Conclusion. There have been no theft prevention or mitigation efforts empirically examined in the current literature. Moreover, the conclusion CSG made

was that, “because the most basic data needed to perform an analysis are not available, no conclusions regarding the deterrent value and efficacy of existing state legislation can be drawn” (p. 5). As has been demonstrated within this section, there are significant collateral harms and costs associated with metal theft, which extend well beyond the crime itself (Posick et al., 2012). These costs include direct costs to replace the metal stolen, but also to replace metal components, labor expenses, costs to repair damaged equipment, the inconvenience of utility outages, economic losses due to legislative regulations, expenditure increases needed to implement crime prevention efforts and more. These losses occur directly to both individuals and organizations, as well as indirectly. In fact, the collateral costs and harms associated with metal theft are likely more significant than many other types of theft.

Price-Theft Hypothesis

When examining metal theft, it is important to understand that it is a unique category of crime (Sidebottom et al., 2011). Stolen metals rarely hold any intrinsic value to the thief. Something of intrinsic value has an inherent worth, which is often borne out by the pleasure a person receives from possessing the item. Examples of commonly stolen items of intrinsic value are money, cigarettes, electronics, vehicles and clothes. Conversely, the value of base metals to the thief is acquired only when the metals are sold to a recycling center, which then exchanges the metal with an item of intrinsic value, money. This is often called extrinsic value, when an item is only valuable as a means of achieving another end.

The exchange of metal for money has been referred to as “criminal alchemy” (Klobuchar, 2009, p. 2), which is a pun referring to the process by which the metal is transformed into profit. The concept of theft occurring exclusively due to the items’ extrinsic value may be relatively unique to metal theft. There does not appear to be a

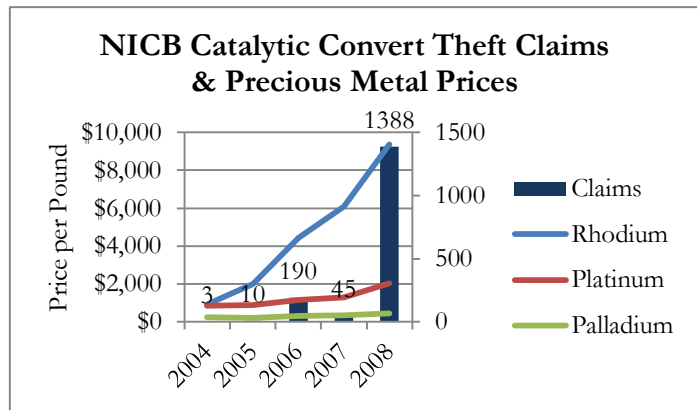
criminological theory or research that directly addresses this concept. It is perhaps this exclusive extrinsic value, which has caused metal theft to be examined through the lens of economic evaluations (Sidebottom et al., 2011), which are better equipped to analyze extrinsic values than many criminological theories.

The common assumption by many in law enforcement (Bennett, 2008a; FBI, 2008; Kooi, 2010), the metal industry (DOE, 2007, 2010; Southwire Company, 2012) and researchers (Lipscombe & Bennett, 2012), is that when the value of copper and other base metals increases the value of scrap metal is also elevated, which leads to a financially rewarding equilibrium and proves to be an impetus for the theft of metal. According to Kooi (2010), “The rise in scrap metal theft is driven by [the] offenders’ recognition that ample metal supplies remain unguarded, and that the price of return remains historically high” (p. 4). This supply-demand inequality provides the opportunity to sell metals (stolen or otherwise) at a high profit to recyclers. In other words, when supply is equal with demand, or supply is higher than demand, the price of scrap metal falls, which results in decreased metal theft. Whereas when demand is high and supply low (as is the current condition worldwide), base metals increase in value and thus are a more attractive target. This concept is supported, anecdotally, through an observation by Roggio (1998) who discusses a decrease in participation with the California Metal Investigators Association because, “the group is finding now that some metal prices are so depressed that incidents of scrap theft are down considerably” (p. 5). This occurred in 1998 as the price of copper plummeted from an all-time high, in 1995, of \$1.38 per pound to a decade low of \$0.78 per pound.

National Insurance Crime Bureau. Perhaps the first organization to publish findings on the price-theft hypothesis during the current metal theft trend was the NICB. The NICB discovered a 3,000% increase during the first six months of 2008 in insurance

claims due to stolen catalytic converters. NICB also identified a 55% increase in the price of rhodium and a 27% increase in the

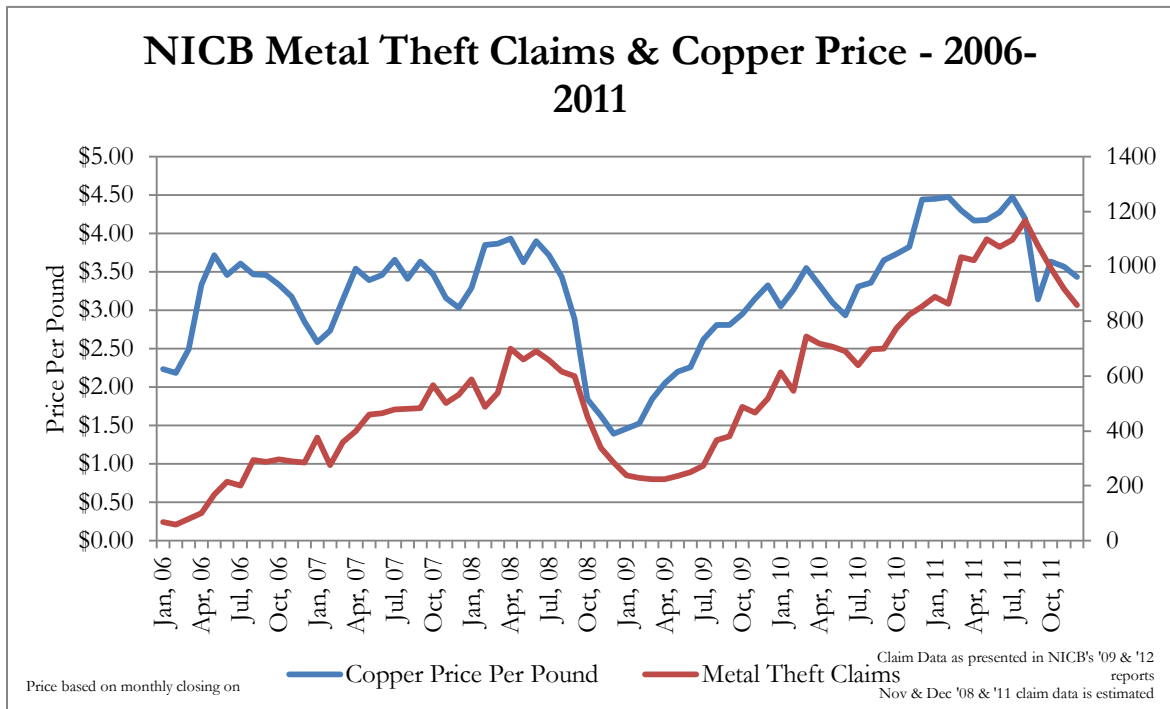
price of platinum, both materials commonly found in catalytic converters. Unfortunately, the hypothesis was never statistically validated and NICB did not include sufficient data in their



report to conduct a third party analysis. Moreover, no other organization, including the NICB, has continued to examine this trend. Presently, the only available data examining catalytic converter thefts is the 2008 NICB study.

The following year the NICB identified a “consistent” (Kudla, 2012, p. 6) correlation between non-automotive insurance claims of copper theft and copper prices in a study they released in 2009. This study examined insurance claims for metal theft between January 2006 and November 2008. Once again, this report did not indicate the strength of the correlation. However, a third examination, published in the beginning of 2012, did provide a statistical analysis of the price-theft hypothesis. Examining metal theft claims from January 2009 through December 2011, the report found, “a statistically significant correlation with the price of copper” (Kudla, 2012, p. 1). While the report did not provide the full analysis, it did indicate that the “Pearson’s correlation coefficient...was .903 [which is] significant at the .001 level” (p. 1). A follow-up study conducted from 2011 to 2013 also claimed to support the price-theft hypothesis; however, no statistical data or support were provided (NICB, 2014). The chart below was developed for the present study from the available data in the NICB reports for 2009 and 2012, and combined with the Commodities Exchange

(COMEX) monthly closing on U.S. copper prices, to provide a visual illustration of the correlation. This chart clearly demonstrates the relationship between the price of copper and national insurance claims for metal theft.



Rochester New York. Research has also demonstrated support for the price-theft hypothesis in local markets. Chad Posick in conjunction with the Center for Public Safety Initiatives examined copper related burglaries in Rochester, New York between January 2007 and November 2008. The findings indicated “a moderately strong relationship” (p. 2) between copper prices and theft (Posick, 2008). This study also examined non-copper related burglary trends and concluded that the price of copper was a better predictor of metal theft than the general burglary rate. Moreover, the study also indicated that there was a two-month lag in market copper prices and the rate of copper burglaries. This demonstrates the strength of the price-theft hypothesis, as it would likely take time for the global price of copper to affect the local market and then for thieves to respond.

In 2012, Posick et al. expanded the study of copper related burglary in Rochester even further. That study examined burglary data from April 2008 through July 2010. Of the 5,656 burglaries examined, 585 were identified as metal (copper) theft related. Among other analyses, the authors conducted a bivariate correlation analysis of the price-theft hypothesis and found a correlation between metal prices and copper burglaries of 0.73 ($p < .01$) which, “indicated a close relationship between the two” (p. 93). This relationship was stronger than any other data examined (e.g., trends in non-copper related burglary, seasonality) suggesting the price of metal is the most important predictor of theft. Additional examinations into copper burglary trends examined by Posick et al. (2012) are discussed in other sections of the present study.

British Railway Network. The largest and the most exhaustive study to examine the price-theft hypothesis were conducted with data from the British Railway Network. The British Railway Network includes over 21,000 miles of railways and 3,000 railway stations in Britain. Sidebottom et al. (2011) examined 2,870-recorded instances of metal theft from January 2004 to October 2007, and conducted a regression analysis with copper prices reflected from the London Metal Exchange, the national crime rate and national unemployment rates. The initial results indicated a 649% increase of copper thefts from 2005 to 2006, which coincided with the dramatic rise in copper prices discussed above. The results from the Ordinary Least Squares (OLS) regression demonstrated a positively correlated relationship between theft and the price of copper with a significance of 0.0001. The other two comparisons, crime rates and unemployment rates, had little to no significant relationship. Sidebottom et al. (2011) concluded that, “Though causation cannot be inferred...the findings are consistent with the proposal that copper has become an attractive target for theft due to the higher prices of copper, and that such price shifts may have

increased the opportunities for offenders to achieve financially rewarding sale prices” (Sidebottom et al., 2011, p. 408).

In 2014, Sidebottom et al. tested the price-theft hypothesis again with a longer series of data, January 2006 to April 2012. In this study, they specifically examined incidents involving the theft of energized copper cables from the British rail network. This accounted for 24% of all thefts on the rail system. Energized copper cable indicates copper electrical lines that were receiving power at the time of the theft. In addition to a significant increase in danger associated with this type of theft, the removal requires significantly more effort and resources (e.g., specialized tools and knowledge of places and methods to remove the cable) (Bennett, 2008b). Moreover, the disruption by the theft of energized wire has a significant impact on the railway infrastructure and those who use it.

The results from the Sidebottom et al. (2014) study again supported the price-theft hypothesis. The study indicated movements in the average monthly price were significantly associated ($<.05$) with monthly energized copper cable theft. This correlation remained “almost identical” (p. 694) to changes in the value of copper, which fluctuated significantly from 2006 to 2012—between \$4.59 and \$2.00 per pound. In other words, this research demonstrated that even a monthly drop in the price of copper resulted in a decrease in theft. Further, two alternative hypotheses: unemployment and police investigation—were found to have no relationship with the rate of thefts.

Price-Theft Hypothesis Conclusion. Much of the empirically tested evaluations of any aspect of metal theft appearing in the literature are research based on the price-theft hypothesis. Moreover, only three of the evaluations, Sidebottom et al. (2011), Posick et al. (2012) and Sidebottom et al. (2014), have been accepted into peer reviewed journals. The remainder of these evaluations is published reports from various governmental and non-

governmental organizations. However, the research and findings of the price-theft hypothesis indicate several important issues. First, metal theft is very difficult to study, primarily due to a lack of data. The rates of local metal theft (Rochester and Indianapolis), or through one company (The British Railway Network), or through insurance claims (NICB) represent some of the only data available on metal theft. Therefore, without rich data on the thefts, victims and criminals much of the research on metal theft will continue to be an evaluation of the price-theft hypothesis. While it is important to continue to examine this issue, it demonstrates the need for data on metal theft so additional avenues of examination can be developed.

Second, the price-theft hypothesis between the rate of metal theft and the price of metal (copper in particular) has been statistically validated among several studies and across national, local and international areas. This correlation remains strong, despite significant monthly fluctuations in the value of metal. This marks a distinct departure from many other types of crime and is likely related to the extrinsic value of metal (Sidebottom et al., 2011).

Finally, the validation of the price-theft hypothesis has significant impacts on the current and future evaluation of crime prevention efforts, specifically, when examining metal theft prevention efforts, including law enforcement efforts, regulations, or legislation. If the price of copper is not included in a statistical analysis of these efforts, the results indicating that the efforts or laws are successful may be spurious. Future research needs to evaluate crime prevention efforts, while controlling for the price-theft hypothesis, to ensure accurate measures of prevention techniques occur.

Postulating a Taxonomy of Metal Thieves

Currently, there is no taxonomy of offenders involved in metal theft. This is primarily due to the lack of data, which has led to an absence of criminological research on

the topic (Bennett, 2008b; Posick et al., 2012). Once again, this deficiency of research has caused news reports and anecdotal stories to be used as a basis for developing taxonomies. As a result, theories and taxonomies run the gamut from drug addicts and opportunistic petty thieves to calculated, organized gangs. The following section describes what is currently known about metal thieves, several of the popularly suggested taxonomies and identifies the strengths and inaccuracies of this knowledge.

The Drug Hyperbole. The most commonly discussed taxonomy among industry officials, law enforcement and news reports are discussions of drug users' involvement in metal theft. Nevertheless, there is no conclusive or empirical evidence that metal thieves are often drug users or addicts. Despite this lack of support, news reports and anecdotal stories by industry officials and law enforcement seem to garner constant support for such a claim.

In fact, a significant portion of published reports (both governmental and non-governmental) claim metal thieves are drug “addicts who need a hit” (Berinato, 2007, p. 3). These reports tend to cite one another in a cyclical nature. Moreover, since there is a citation, which purportedly lends credence to the drug claim most readers and other authors will assume the claim is supported by scientific research. The present study examined the sources and citations, which most reports cite in support for the theory that drugs, specifically methamphetamine, are a significant cause for the metal theft epidemic. The results indicated three sources that are most frequently cited to support the claim. What's more, most of these reports and many others cite one single and primary source. This primary report appears to be the basis for nearly all claims that drug addiction is related to metal theft. The following section examines each of the three most commonly cited sources on the drug and metal theft hypothesis, concluding with an examination and analysis of the original source document.

Government Reports. The first most frequently cited source, which claims connection between metal thieves and drugs, is an FBI Criminal Intelligence Section 2008 bulletin on copper theft. This document is often cited as an authoritative source indicating metal theft is conducted to support “drug addicts” (p. 2), yet the only source the FBI cited to support this claim was a single news report of copper theft in Florida. Moreover, the entire report and its claims appear to be based on nine news reports or, as the FBI termed them, “open sources”. If any other data was utilized to support the conclusions in this report, they were not identified by the FBI. Unfortunately, it is doubtful that any of the information provided within the document was more than anecdotal, and the conclusions based solely on selected news reports are unreliable.

The second most frequently cited secondary source, which claims connection between thieves and drugs, is the Problem-Oriented Guide for Police on Theft of Scrap Metal by Kooi (2010). In this guide, widely distributed among law enforcement, Kooi states, “Drug addicts, particularly crystal methamphetamine users, appear to be linked with specific types of scrap metal theft. To support their drug habits, they require repeated and quick access to small amounts of cash, which they can easily obtain by selling small amounts of stolen scrap metal to dealers [Berinato, 2007]. However, there is little doubt that other types of drug addicts also steal scrap metal to support their habits” (p. 8).

The only support for the conclusion that methamphetamine addicts commit metal theft is a 2007 article by Berinato.

The third most frequently cited source, which claims metal thieves are drug users, is the report presented by the DOE in 2007, titled *An Assessment of Copper Wire Thefts from Electric Utilities*. The study reports to have utilized open source news reports and, “interview[s]

with] **a few** scrap dealers, law enforcement and security professionals to obtain first-hand understanding of the problem and the possible solutions” (p. 2) (*emphasis added*). Based on these interactions the study makes the following claims, “Efforts that lead to more arrests, more convictions, and stiffer penalties may reduce repeat offenders. However, these efforts will not reduce the crimes committed by methamphetamine addicts” (DOE, 2007, p. 6). This statement and claim came with no previous mention of drug usage in the report, nor were there supporting citations—media reports or otherwise—to support the claim. Next, the DOE conclude, “There is a strong correlation between crystal methamphetamine drug abuse and reported metal theft” (p. 7).

The emphasis on meth usage continues when the report describes theft from energized substations and utility poles stating that it is, “the most dangerous place to steal copper wire”, and then concludes that the theft from dangerous places is directly “related to the large numbers of methamphetamine users” (p. 8). The report describes medical research, which has shown methamphetamine usage reduces the ability of the brain to assess risk (without any citation to support the assumptions). It then describes the typical energized substation as only having, “a few hundred dollars from the sale of stolen wire, sufficient for the next drug fix” (p. 9) followed by implying that no one would consider entering such a dangerous environment for such a small profit unless they were drug addicts.

While the DOE study does state that it, “makes no claim or attempt to be comprehensive in its coverage of all copper wire thefts at electric facilities” (p. 2) the warning is not heeded as is evidenced by the frequency the report is cited in support of metal theft and drug usage. The updated 2010, report, *Infrastructure Security and Energy Restoration*, does not place as heavy an emphasis on drug use, but still lists it as a factor when it says,

“police departments around the country have reported a strong link between crystal methamphetamine use and copper wire theft” (DOE, 2010, p. 6).

Chief Security Officer Magazine. The primary source cited by a significant number of reports to support the claim that drug addicts steal metal to support their habit originates from a 2007 article by Scott Berinato written for the periodical magazine, Chief Security Officer (CSO). CSO is a private organization that provides news, analysis and research on security issues and risk management (CSO, 2007). Beginning in 2007 CSO took special interest in metal theft in Detroit, Michigan. In particular, they examined the impact of copper theft on DTE Energy Company, which provides electrical services in Michigan. In the article titled, *Red Gold Rush: The Copper Theft Epidemic*, Berinato interviewed half dozen persons in law enforcement and the electrical utility industry in Michigan. In a subsection of the article entitled “How the drug problem got to be Mike Dunn’s problem” Berinato spends several paragraphs describing the effects of methamphetamine and activities of addicts, citing the National Institute on Drug Abuse. He describes the need for money to satisfy a drug addicts’ next “craving”, the lack of sleep and high energy levels and the tendency to complete intensive and repetitive activity. Berinato then makes the following assertions.

First, Berinato describes a story relayed by his interviewee (Mike Dunn of American Electric Power) in which metal thieves steal copperweld grounding rods from an energized electrical substation. In order to obtain copper from copperweld grounding rods, the thieves must unravel the thin copper wire, which surrounds a worthless metal rod. Dunn comments that it would take two hours to complete this task and adds an incredulous statement, “...for what? A hundred bucks of copper?” (p. 6). Berinato then draws the conclusion that completing this “bizarre—Herculean efforts put forth for minimal payoff...makes sense

when put in the context of crystal meth” (p. 6). However, when comparing Michigan’s 2007 minimum wage of \$7.15 per hour, with the projected \$50 per hour made unwinding copper strands from a grounding rod, it is easy to see how many persons, drug user or otherwise, might choose the latter. Clearly, this example does not support the conclusions drawn in the magazine article.

Secondly, Berinato utilizes several un-cited news stories from around the world, which describe metal theft of varying quantities and methods, including stealing 400 feet of aluminum bleachers, taking 4,400 feet of wire off an electrical pole and completely removing a 36-foot vehicle bridge, leaving a town stranded. While some of these purported thefts are significant, and unusual others are more common. However, Berinato concludes that because meth users stay awake and active for long periods, the thefts he described must have been perpetrated by addicts because meth addicts often stay awake for long periods.

Finally, Berinato describes the dangerous situations that metal theft occurs in, primarily substations with energized lines and rail yards. He then postulates that methamphetamine addict’s experience, “a craving so intense that they will take extreme measures...to get more”, and that “A crystal meth addict, whether high or craving a high, isn’t rational about what constitutes risky behavior”. He concludes this statement by describing several anecdotal stories he admits are, “wildly risky metal thefts that lead to death [and] are legion and often harrowing” (p. 7). Again, criminals taking risks to obtain financial rewards is hardly new, nor the exclusive domain of drug users.

To Scott Berinato’s credit, he does include this caveat in the midst of his conclusions on the connection between drug usage and metal theft.

It’s important to point out that not all meth addicts are metal thieves and, likewise, not all metal thefts track back to meth addicts. No scientific data exists yet that

confirms the link between the two, but CSOs and law enforcement say the link exists. Many interviewed for this story mentioned the drug unprompted. (p. 6)

Unfortunately, this statement received scant attention by those who cite his study to support the notion that drug usage and metal theft are connected.

While blame should not be placed on Berinato (a journalist who reported his conclusions and observations in an industry periodical), there are significant issues with official reports and studies which cite his report as an authoritative and conclusive study on the connection between drug usage and metal theft. For example, the DOE report cites Berinato's 2007 article as the source for their conclusion, and in discussing Berinato's article in the footnotes says, "according to an extensive study sponsored by the Chief Security Officer web site" (p. 7). However, Berinato's study was not extensive, nor does he claim it to be. Unfortunately, Scott Berinato's magazine article has been used inappropriately for years to support the claim that metal theft is connected to drug addicts. Berinato's article was based on anecdotal observations, and a few interviews with industry officials, and should not be utilized within professional research.

Senate Subcommittee Hearing. The frantic hyperbole of drug usage and metal theft was advanced even further, during a 2009 United States Senate Subcommittee hearing on metal theft, where all but one presenter discussed the relationship between drugs and metal theft without citing one source for their conclusion. For example, Senator Oren Hatch claimed that metal theft is, "primarily for drugs" (p. 4). Furthermore, the now defunct, Coalition Against Copper Theft claimed, there was, "a clear and definitive link between stealing copper and illegal drug use, primarily methamphetamines" (p. 25). Perhaps even more outrageous are statements by Mona Dohman, a police chief in Minnesota who discussed the fallacious drug-metal theft link and also stated, "[metal theft] can be and is a

gateway to farther reaching and more severe crime” (p. 8). Whereby she coopted, a popular phrase of government officials to describe low levels of drug usage (e.g., marijuana) act as a “gateway” to more serious crimes, and implied not only that metal theft was the result of drug usage, but also that addicts would move from metal theft into crimes that are more serious.

National Insurance Crime Bureau. To date the only empirical study on the relationship between metal theft and drug usage was conducted by the NICB in 2012. The study compared the rate of insurance claims for metal theft within each state, per 10,000 residents, with the 2009 state estimated rates of drug abuse/dependence individuals, per 10,000 residences. The NICB findings indicated states with higher rates of drug abuse and dependency experienced higher rates of metal theft, claiming the correlation was .263 (significant at the .063 level). Unfortunately, the NICB did not provide any additional details of its statistical analysis or the raw data to support their findings. The study concluded that, “the thieves are often drug addicts and steal these materials to sell them to scrap dealers and net themselves some quick cash” (p. 2). The NICB concludes the short section on drug usage and metal theft saying, “Of course, there are many factors contributing to the metal theft rates of a given area. Drug abuse may not be the primary factor influencing metal theft, but a correlation was found to exist” (p. 6).

Drug Hyperbole Conclusion. It is doubtful that a firm connection between drugs and metal theft has been established in the literature. This is not to say that there is no connection, but rather to demonstrate what occurs when a lack of knowledge exists. Even a magazine article based entirely on media reports, anecdotal interviews with only a handful of persons in law enforcement and broad correlations between state drug usage and metal theft quickly become the standard by which others report on the issue.

It is also important to address the repeated reference not only to drug usage, but also specifically to methamphetamines. It would appear, based on the studies discussed above, that the drug-metal theft hypothesis, specifically the emphasis on methamphetamine may be related to moral panic and hysteria, which has been driven by the media and government. The hysteria over methamphetamine use appears to have been in full swing in the United States in the mid to late 2000's (Hart, Csete, & Habibi, 2014), which coincides with the sharp rise in metal values and media attention to metal theft. Researchers have documented the effects of meth hysteria creating a moral panic in the public (Chenault, 2012; Hart et al., 2014; Jenkins, 1994; Weidner, 2009). It is also unlikely that the estimated 500,000 methamphetamine users across the United States in 2007 (SAMASH, 2012) could have been responsible for the dramatic rise in metal theft rates.

While a connection may certainly exist between drug usage and metal theft, one has not been established in the literature. Moreover, it is doubtful that the connection is as strong as emphasized, and may coincide with the hysteria of meth usage. Conversely, perhaps meth users are easier to catch, and therefore are over-represented within law enforcement contacts, and thereby enhancing the hysteria surrounding drug use and crime. Regardless of the reasons or source of the drug hyperbole, one thing is certain, until rich data is produced, which is scientifically analyzed and combined with evidence-based knowledge of offenders, the relationship between drug usage and metal theft within the criminological community is uncertain.

Opportunistic Thieves. Despite a large number of authors, researchers and officials who cite drug addiction as the primary motivating factor for metal theft, others believe metal theft is merely a crime of easy opportunity and profit (Bennett, 2008b; Kooi, 2010). Opportunistic crimes are those that occur with little or no planning or premeditation,

as conditions are present that allow the crime to occur with little effort or risk (Clark, 1997). This concept has been applied to many types of crime, especially property crime, and may be a factor with metal theft. Describing a metal thief as opportunistic does not necessarily preclude them from having committed a planned or organized metal theft in the past. Nor does it indicate that they lack the skills necessary to complete the crime. Rather, it exemplifies the mindset of the offender at the time of the theft. Kooi, (2010) believes that opportunistic metal thieves steal metal when guardianship is lacking. Opportunistic metal thieves may not be seeking to steal metal, but may discover it during their routine activities, specifically the places they visit and decide to take it to obtain quick cash. Opportunistic thieves may be contractors, construction workers or juveniles who occasionally steal and sell metal when the conditions are especially easy (Kooi, 2010).

Other individuals may commit theft when the opportunity presents itself. Easily accessible metal items such as bicycles, ladders, aluminum siding, copper pipes on a parked work truck and other unsecured metals may be a tremendous temptation for many who are presented with such opportunities. An illustration may be a subject walking through a neighborhood who observes copper pipes stored behind a shed. While this individual may not regularly be involved in metal theft (or any other type of crime), when the opportunity to easily acquire a high value metal with low risk and numerous accesses to recyclers presents itself, the temptation to transform metal into a quick buck may lead to theft. This type of opportunistic theft requires little knowledge or skill, and may occur frequently with small amounts of metal.

While it is certainly possible that some metal thieves lack any ability or knowledge and tend to rely exclusively on chance opportunities to locate discarded bicycles, ladders and other forms of metal, others demonstrate tremendous ability and knowledge in the field. In

fact, three abilities are needed to procure many types of metal: technical knowledge (e.g., how to identify and acquire valuable metal), along with the specialized skills to remove it and physical means to transfer it to a buyer. Electricians, construction workers, plumbers, HVAC workers and others both current and formerly employed have all three of these abilities. Moreover, since these individuals have frequent contact with valuable metals, they may be presented with opportunities to steal metal in conjunction with their professions (Bennett, 2008b; ISRI, 2011). For example, a plumber may be presented with the opportunity to recycle copper pipes remaining after a job, rather than return them for a refund, or an HVAC installer may observe valuable metals he can take during an installation job. Metals can be easily acquired, and because these individuals work in an industry, where they are expected to have large amounts of metal they are viewed with less suspicion.

Since the precipitous rise in metal prices after July of 2000, many individuals have become aware of the value of metal, the abundance of available sources and the reduced risk involved. While many may not routinely commit metal theft, it is likely that others will when the opportunity presents itself. Opportunistic thieves may range from unskilled individuals, to those licensed in an industry related to metal (e.g., plumbers). It is important to remember that many instances of metal theft may be opportunity-driven, however, it should not be concluded these crimes are less rational. Unfortunately, there is a lack of research on metal theft, specifically opportunistic thieves. Again, what is commonly known about metal thefts is gleaned through news reports. Consequently, unsensational cases of metal theft are less likely to make news reports. This may account for the underrepresentation of these types of crimes in the news media and thus present research.

Calculated Thieves. While there is evidence that metal thieves may steal based on the easy opportunity to do so, researchers and law enforcement officials increasingly point to

the calculated and organized nature of many metal thieves (Committee on the Judiciary, 2009; FBI, 2008; Hough, 2012; Wonder, 2008). Calculated thieves create an important distinction from opportunistic thieves. Calculated thieves seek out any opportunities to steal metal, commonly plan the theft, often utilize specialized experience and tools, and frequently operate within a group of other thieves. Calculated thieves are difficult to study as they often operate with efficiency, making them more problematic to identify and apprehend.

Currently, little is known of calculated metal thieves, other than assumptions by researchers, industry officials and law enforcement officials. Some of these assumptions are based on analysis of crime patterns. For example, Whiteacre et al. (2014) discovered a 25% increase in the theft of larger appliances between 2008 and 2012 in Indianapolis, concluding that appliance theft is an indication that metal theft is becoming, “more organized and purposeful than the odd thief with a shopping cart or backpack” (2014, p. 2). Other researchers (Sidebottom et al., 2014) have noted that many instances of metal theft from the British National Railway were likely committed by groups of organized thieves. Posick et al. (2012, p. 94) discovered a significant relationship between abandoned properties and metal theft in Rochester, New York, concluding, that metal theft is, “not likely as part of an afterthought during a non-metal theft episode”. Moreover, The Eau Claire, Wisconsin Metal Theft Initiative (2008) also found a significant portion of metal thieves operated in groups appearing to be calculated, and tended to strike the same place repeatedly if sufficient metal was present. The repeated victimization of one place also indicates metal thefts may be calculated (Ashby, Bowers, Borrion, Fujiyama, 2014).

While plumbers, electricians, HVAC technicians, contractors and others were also discussed as possibly being opportunistic, there are some indications that a handful of these individuals frequently and deliberately steal metal. For example, an HVAC technician may

scout places when legitimately working on a job and return later with the knowledge and tools necessary for a quick theft. If confronted, they may even be able to present themselves as repairing an HVAC unit and be free to operate without scrutiny. These thieves are then able to circulate stolen and non-stolen material for sale at the recycling center with impunity. In fact, many laws aimed at curbing metal theft exempt plumbers, contractors, electricians, HVAC technicians and others from many of the regulations because they are deemed to be legitimate.

Further conclusions that metal thieves are calculated are also frequently based on the volume and details of news stories. Many of these stories demonstrate the sophistication, organization and calculated nature of metal thieves. Based on metal theft news stories, the FBI concluded in its Intelligence Assessment of Copper Thefts (2008),

Copper thieves are typically individuals or organized groups who cooperate independently or in loose association with each other and commit thefts in conjunction with fencing activities and the sale of contraband. Organized groups of drug addicts, gang members and metal thieves are conducting large-scale thefts from electric utilities, warehouses, foreclosed or vacant properties and oil well sites for tens of thousands of dollars in illicit proceeds per month (para. 4).

Finally, there is limited evidence that some portion of metal theft may be related or organized by criminal syndicates (FBI, 2008). Many make this connection within popular media; however, few have presented evidence to support this claim. An exception is Terri Wonder (2008) who examined news stories and court documents and located several legal cases in Canada associating copper theft with Outlaw Motorcycle Gangs and Organized Criminal Syndicates based out of Russia. Wonder also identified a case in the United States involving an organized crime group convicted of extortion and arson conspiracies against

several recycling centers after their involvement with an organized crime syndicate. While organized metal theft criminals of this type may be rare, it is worth considering the relationship, especially when significant stockpiles of processed metals are stolen (see Leposky, 2006).

Based on police reports, analysis of news stories and claims by industry officials, there appears to be a significant portion of metal thieves who operate in a calculated manner. This presents a significant challenge to law enforcement and researchers, as calculated thieves are more likely to steal large amounts of valuable metal (Kooi, 2010); often seek significant sources of metal, such as construction sites, utilities, abandoned structures; and are difficult to locate. Beyond the theory that some metal thieves operate in an organized and calculated manner, current literature does not provide adequate details on who these thieves are, their background or how they operate. The present study will expand what is known about calculated metal thieves by examining these and other questions.

Taxonomy Conclusions. It is difficult to categorize metal thieves into taxonomies for several reasons. First, the lack of data makes any proposed taxonomy difficult to validate. Second, the area of metal theft, and the wider area of scrapping (non-theft metal recycling), has significant variance. The individuals involved are not homogeneous and often represent various backgrounds, levels of sophistication and modus operandi (Bennett, 2008b). Third, there appears to be significant hyperbole, especially connected with the moral panic on drug usage, which makes it difficult to delineate facts from fears. Finally, metal theft is, generally, unlike most other property crimes, making it difficult to take existing taxonomies and apply them to this area of study. Ashby et al. (2014) concluded in their study of metal theft from the railway network of Great Britain that metal thefts may more likely be planned rather than opportunistic. They also suggested that, “more certain and more detailed results on the

extent to which metal thieves plan their offending could be obtained using alternative methods such as offender interviews” (p. 18). The data collected in the present study will provide an initial theoretical explanation of metal thieves utilizing the proposed interview method, which will provide a deep understanding of metal thieves and provide a basis for continued evaluation by other researchers.

Theories: Rational Choice & Routine Activities

As discussed in the taxonomy section, various researchers and authors believe (or at least identify) metal thieves as behaving in a rational manner (Ashby et al., 2014; Bennett, 2008b; Posick et al., 2011; Sidebottom et al., 2011, 2014). Moreover, many metal thieves demonstrate significant knowledge, organization, skill and self-control to complete their thefts. For example, the price-theft hypothesis demonstrates that thieves frequently evaluate the risks and rewards for metal theft and are more likely to commit metal theft crimes when the rewards are the highest (Sidebottom et al., 2014, 2011). If the price-theft hypothesis is correct then it is likely that those frequently involved in metal theft also have self-control enough to withhold from committing metal thefts when the rewards are not as great (Ashby et al., 2014; Sidebottom et al., 2014). Given the inherently economic nature of metal theft, there are two primary theories that are optimal for examining it, rational choice theory and routine activities theory.

Rational Choice Theory. The primary focus of rational choice theory is the belief that criminals are rational and therefore crime should be evaluated by examining how criminals are perceived by the environment and the victim. In other words, “crime is a purposive behavior designed to meet the offender’s commonplace needs” (Clarke & Felson, 2004, p. 6). Moreover, each crime involves a series of unique decisions, behaviors and locational influences, which alter a criminal’s behavior (Cornish & Clark, 1986). Therefore,

rational choice theory assumes it is too difficult to control a criminals' motivation, instead focusing on the easier and perhaps more effective method of controlling the opportunity for crime to occur in a given place (Felson & Clarke, 1998).

No matter why a person is stealing metal, they are typically making a rational choice to do so. Since there is a dearth of data on metal theft, researchers must rely on collections of anecdotal reports to identify and understand metal thieves' behavior. Rational choice is clearly demonstrated in many aspects of metal theft, especially the choosing of the places these crimes occur, such as when abandoned houses and buildings are chosen over occupied structures and when theft rates are higher near recycling centers (Bennett 2008a; Kooi, 2010; Posick et al., 2012; Sidebottom et al., 2011; Sidebottom et al., 2014). Research has also demonstrated that metal thieves often conduct extensive planning and may repeatedly target the same place when supplies of metal remain (Ashby et al., 2014; Bennett, 2008b). Clearly, offenders appear to be making rational choices about the risks and rewards of metal theft.

Other examples, which indicate metal theft is a highly rational crime, include the ease of locating and transforming property into money while avoiding criminal penalties. Stolen items may often include items that are around a specific place in plain sight, or on the exterior of a building and easily accessible. Materials such as vehicles, bicycles, aluminum siding, copper gutters and trashcans may be common targets for metal theft due to ease of access. In addition, the availability of these materials means thieves do not have to enter an occupied house to find something of value and risk enhanced criminal penalties (e.g., burglary or robbery charges), harm from the resident or increased risk of identification and capture.

Once base metals are stolen, they are of relatively high value, easy to sell and hard to trace (Bennett, 2008b). In some ways, metal theft may be an easier type of crime than

burglary, robbery or theft of intrinsic valuables such as electronics and jewelry. Therefore, thieves may rationally choose to engage in metal theft over other more difficult or risky types of crimes (Southwire Company, 2012). For example, recycling centers present an existing market and infrastructure for thieves to transform their stolen goods into money seven days a week. Whereas the theft of personal items (e.g., electronics, jewelry) needs to be *fenced* back into the *legitimate world* (Bennett, 2008b) which requires an unscrupulous buyer to transform stolen goods into cash. Locating a suitable fence for exchanging personal items for cash or a potential buyer may take time, brings increased risk of capture and may result in significantly undervalued return. “However, stolen metal can be directly sold into the mainstream [metal] recovery cycle with relative ease” (Bennett, 2008b, p. 7). Moreover, the value of stolen metal and legally acquired metal is the same at the recycling centers; therefore, there is less incentive to acquire the metal legally if the same price can be received as legally acquired items. Finally, there is little chance of identifying the source of the stolen metal, which reduces the likelihood of conviction, even if a metal thief is discovered by law enforcement.

Rational choice theory clearly applies to metal thefts. In nearly all instances, metal theft crimes would be considered rational. The offender, whether calculated or acting on impulse, makes a conscious decision of how and when to steal metal for resale. At any time if the rational choice can be interrupted by increased likelihood of discovery, decrease in supply, change in demand, etc. research demonstrates the thief seems to choose not to commit the crime. These factors indicate an important area study and application that will be addressed in the present study.

Routine Activities Theory. The second theory that holds promise for understanding metal theft from a criminological and victimological perspective is routine activities. Routine activities theory is related to rational choice perspective in that it examines

crime as the result of choices made by an offender. It also holds the basic assumption that an offender is already motivated to commit a crime and emphasizes environmental circumstances and guardianship in which offenders and victims are located (Cohen & Felson, 1979). Consider the crime triangle, which is often cited when discussing routine activities theory. In order for any crime to occur three things are needed: a motivated offender, lack of a capable guardian and a suitable target or victim. Whenever these three things converge in time and space, a crime is likely to occur.

Routine activities theory exemplifies how changes in the routine activities of society such as an increased promotion of recycling, the rising value of base metals and availability of metals due to an economic recession (e.g., abandoned structures) has an impact on the rate of metal theft (see Felson, 2006). Unlike violent crimes, such as robbery, rape and assault metal theft is driven by availability in the built environment. Therefore, the routine activities of individuals within the environment as well as the specific places, which may provide additional opportunities for metal theft, are essential to understand.

Brantingham and Brantingham, (1995) found that there are three types of physical environments that provide motivated criminals with individual awareness of places and persons to commit crime against. The first is that of nodes. A node is a major activities place where the criminal has a significant spatial or cognitive awareness (e.g., work, home, frequent entertainment establishments, friend's residence). Secondly, the Brantinghams identified paths, which are simply corridors (e.g., roads, trails) which link one high activities node with another. Finally, edges are identified as areas that have significant environmental distinction and can often be crime attractors (e.g., outside a large crowd, the structures on the periphery of a shopping center).

The Brantinghams (1995) contend that offenders observe suitable targets while spending time in nodes, paths and edges. An example would be an offender who frequently takes a short cut (path) behind a local shopping center (edge) on his way between work (node) and home (node). While moving along pathways from node to node the offender observes a church, he would normally not have seen at another time. Learning, due to frequent travel, increased awareness, and perhaps reconnaissance of the place that the church is vacant during certain days of the week, he utilizes a crime script and spatial awareness to engage in burglary and ultimately metal theft. This theory accounts for the frequency of criminals who often commit a crime in places close to their home, work or other places with which they are familiar. In this way, the place hosts the crime due to the offenders and guardians routine activities.

Guardianship also plays a key role in routine activities theory. Research indicates that reduced guardianship of metal and the places that house large supplies of metal (e.g., abandoned structures) are especially attractive to metal thieves (Ashby et al., 2014). Felson and Clarke (1998) conducted research on crime in Great Britain and concluded, “Opportunity makes the thief” (p. 3). This is to say that opportunity for a theft to occur is a key factor when working to understand and prevent crime. Kooi hypothesized, “The rise in scrap metal theft is driven by [the] offenders’ recognition that ample metal supplies remain unguarded, and that the price of return remained historically high. The metal market conditions make unsecured metal susceptible to increased theft” (2010, p. 4). Unguarded and abandoned structures provide a perfect place and opportunity to host metal thieves who are unlikely to be interrupted during their crime.

In fact, these abandoned and unoccupied places may serve as crime attractors. A crime attractor is a particular place or area in which a motivated offender seeks out victims

due to the known opportunities for a particular type of crime (Felson & Clarke, 1998). Motivated criminals, or in this case, metal thieves, may be attracted to a secluded, abandoned or otherwise deserted location because of the crime opportunities and low guardianship. Examples would include utility power stations, construction sites, industrial buildings, foreclosed homes and other vacant structures. Each of these places often contains a significant source of valuable metals and may attract thieves who are searching for metal.

Crime generators are similar to attractors, but defined as a place where people are present for reasons unrelated to any particular criminal motivation, yet the place provides an opportunity for crime (Brantingham & Brantingham, 1995). These generators produce crime when particular times, places and people join in circumstances that are conducive to crime, but do not directly attract offenders. Examples may include a subject who in the course of his routine activities observes a dumpster with “no trespassing” signs that contains metal sitting unguarded behind a business. While the subject is in the place legally or for non-criminal purposes, the opportunity to commit, a crime may be difficult to withstand. A further example of a crime generator may include a construction site where a worker knows metal is stored and decides to take the items as he leave the site for the day. Finally, crime generators can be places, which draw metal thieves, such as recycling centers. Since every thief must visit a recycling facility to exchange the metal into money metal theft is likely to occur around and along paths (roadway) leading to the centers. The thief in each of these circumstances may be tempted to steal the metal, but may not have sought out the opportunity. This concept is described in more depth in the spatial analysis of the present study.

Theories Conclusion. What seems clear from the limited available research and anecdotal evidence is that a metal thief’s routine activities often bring him or her together

with suitable targets which often lack guardianship and provides the opportunity for metal theft to occur (Posick et al., 2012). Moreover, metal thieves often operate rationally and purposefully by searching for places that lack capable guardianship and contain large amounts of metal, thereby increasing the rewards and reducing the likelihood of capture and sanctions. These preliminary findings from existing research indicate that rational choice and routine activities theories are an appropriate lens within which to examine metal theft.

Spatial Analysis

As discussed previously, metal theft is a crime effecting the built environment (Bennett, 2008a). The built environment involves spaces and places created or modified for human activity and spans parks, churches, farms, industrial buildings, homes and any other space adapted by humans. In most situations, the built environment includes the use of metals such as steel, copper, iron, aluminum and lead, which implies that with the current high value of metals the built environment is, “an asset under attack” (Bennett, 2008a, p. 176). While some places include metals that are more difficult to access (e.g., buried copper pipes and wires in a field) other places possess metals which are easily accessed (e.g., aluminum siding, bronze grave markers in cemeteries). Moreover, some places possess greater quantities of valuable base metals in a small location (e.g., copper wiring at industrial facilities), whereas others possess fewer supplies of valuable metals spread across a sizable area (e.g., farms). Further, lack of guardianship of certain places makes theft at some places easier. Finally, the location of recycling centers (a necessary component to metal theft) may also influence the rates of crime. These and other factors will be examined in this section.

Place & Ease of Access. The ease of acquiring metal at certain places appears to be a significant factor in metal theft. This is demonstrated in the types of places that metal thieves target. For example, agricultural businesses and farms are often targeted due to the

ease of acquiring metal (Washington State Department of Agriculture, 2015). Thieves are able to raid barns filled with metal, haul off old farm equipment and remove electrical and irrigation equipment with little effort and a reduced likelihood of being discovered. In fact, California's Agricultural Crime Technology Information and Operations Network (ACTION) project identified a 400% increase in metal thefts on farms in 13 counties in California, between 2005 and 2006 (Souza, 2015).

Other places also provide significant ease of access to valuable metals within the built environment. For example, catalytic converter theft requires only a few moments, a saw and a victim vehicle with high ground clearance for thieves to easily cut the valuable exhaust system from a vehicle and turn an \$80 to \$200 profit. Places such as parking lots (especially long-term parking lots), vehicle repair shops and car sales lots are likely places thieves would target as they are rich with opportunities and often have limited guardianship.

Likewise, construction sites are prime places that may attract or generate crimes. Construction sites frequently have large quantities of metal items at each stage of construction (e.g., metal tools, copper pipes, and electrical wire). Therefore, a construction worker may purposely steal metal from his employer while on the job site. Moreover, metal thieves who are not employed at the location may seek construction locations out in order to capitalize on the large amounts of metal.

Finally, some public places within the built environment are specifically vulnerable to metal theft. Examples include alleyways, parks and cemeteries. Each of these places provide easy opportunities for crime, as metal is often abundant and guardianship is low, and the metal is often easily accessed. For illustration, consider the aluminum siding on a garage or home that adjoins an alley. Since metal thieves may search along alleyways for easily accessible metal the aluminum siding may be attractive. Moreover, cemeteries and parks

often have poorly secured bronze decorative art or plaques. In these cases, circumstances require only a thief visit a common public place, pick up a metal item and abscond.

Quantity & Quality of Metal. The rational choice perspective (Cornish & Clark, 1986) postulates that crimes are more likely to transpire when the likelihood of financial gain is elevated. There is limited direct research examining this issue in the crime of metal theft. However, anecdotal findings indicate metal theft occurs often in large quantities and metals of high value (quality) are frequently targeted. For example, copper is the most stolen metal (Kudla, 2012; NICB, 2014; Whiteacre et al., 2008, 2014), likely because it provides more income per pound than most other metals. It is also likely that places with high quantities of quality metals are targeted for crimes more often than places that do not possess these characteristics. For example, older homes, which tend to have copper pipes, as opposed to plastic pipes, may be a place targeted by thieves.

Lack of Guardianship. Routine activities theory (Cohen & Felson, 1979) postulates that crimes are more likely to occur in places of low guardianship where the crime is less likely to be discovered. A lack of capable guardianship can be identified in many of the places that often suffer metal theft. These include railroads (Ashby et al., 2014; Posick et al., 2012; Sidebottom et al., 2011, 2014), farms (see discussion above) and industrial and construction locations (Berg & Hinze, 2005; Boba, 2007; Clarke & Goldstein, 2002). However, due to the recent U.S. economic downturn and increased home foreclosures, abandoned buildings have also received increased attention as crime generators and attractors (Stucky, Ottensmann, & Payton, 2012; Zhang & McCord, 2014). As with other types of crime, abandoned homes and buildings appear to have a high correlation with metal theft.

For example, Posick et al. (2012) examined metal related burglaries and non-metal related burglaries in Rochester, New York, between April 2008 and July 2010. They found burglaries related to metal thefts were more likely to occur when neighbors were further away (average of 138 meters) than for burglaries that were not related to metal (average of 44 meters). The study also demonstrated that 54% of all metal related burglaries occurred in vacant buildings, compared to only 3% of non-metal related burglaries. The authors performed a logistic regression of the data and found the relationship between vacant buildings and metal burglary was, “very substantial...increasing the log odds of metal being stolen by 44.68” (p. 94). This data appears to support the idea that lack of a capable guardian is a substantial factor for metal thieves when choosing places at which to commit theft.

The Role of Recycling Centers. The profit for the thief involved in metal theft requires a specialized buyer. “Scrap buyers provide the necessary link for creating profit from scrap metal theft. The scrap metal theft problem is driven entirely by the ability to sell stolen goods to recyclers, and often these recyclers facilitate crime” (Kooi, 2010, p. 7). Recycling centers typically take the form of an established business that buys metal from the public. These recycling centers continue to separate, process metals, and commonly resell to larger and larger buyers as the metal re-enters the recovery cycle. Unfortunately, it is challenging for recycling centers to differentiate stolen metal from legally obtained metal. Research has demonstrated that business may have an effect on crime trends in their immediate surroundings (McCord & Tewksbury, 2012). Therefore, Whiteacre and Howes (2009) postulated,

By unknowingly (or sometimes knowingly) purchasing stolen items, recycling centers may facilitate the disposal of stolen goods, thus increasing the theft of those items.

The presence of scrap yards, therefore, might play a role in the increasing metal thefts in the area (p. 2).

To examine this theory, Whiteacre and Howes (2009) utilized NICB claims data for 51 cities across the United States, from January 2006 to November 2008, which experienced high rates (30 or more) of metal theft claims. The data was then compared with the rate of publicized recycling centers per 100,000 residences in each town. The researchers discovered a, “strong, positive and significant relationship with the number of scrap yards” (p. 7). The findings also indicated metal theft had a positive relationship with burglary rates in each city, but that the relationship was not as strong as the number of recycling centers. Whiteacre and Howes examined the data through a linear multiple regression analysis and found that recycling center rates accounted for 52% (r-square .527) of the variance in metal theft.

Despite these findings, Whiteacre and Howe (2009) discuss several important caveats. First, the data acquired for this study, namely the NICB data, significantly underrepresents metal theft. Secondly, their findings do not indicate causation, only a positive correlation. Lastly, Whiteacre and Howe caution interpreting the results to indicate that recycling centers are crime facilitators. They cite Sutton (1995), who examined the role of pawn shops with non-metal theft and stated, “The question remains as to whether the existence of a market for stolen goods is merely a downstream consequence of crime, or whether it feeds back to provide motivation for thefts and to influence what is actually stolen” (p. 400).

The link between recycling centers and metal theft is apparent. Thieves need to sell their stolen material and recycling centers either knowingly or unknowing provide the outlet for such sales. However, the role and the extent to which recycling centers influence thieves remain unknown. The study by Whiteacre and Howes (2009) represents the only published

examination within current literature. Despite this lack of knowledge, significant legislation has been aimed at controlling recycling centers, which may negatively affect businesses, as well as legal customers, while it is unlikely that these controls over recycling centers reduce the rate of metal theft (Bennett, 2008b).

Spatial Analysis Conclusion. The findings from the available empirical research tend to support the hypothesis that metal theft is more likely to occur in specific places when high quantity and high quality is combined with decreased guardianship. Moreover, the likelihood of metal theft is enhanced when acquiring metal can be accomplished without great effort. Further, it appears as though the factors that are attractive to metal thieves: ease of access, quantity and quality of metal and lack of guardianship, often coalesce in specific places and create high probabilities of crime. For example, abandoned buildings provide easy access, a large supply of quality metal (e.g., copper), and provide a shield between the outside world and the criminals (reducing guardianship).

Similarly, churches are other places which are, generally, infrequently occupied (low guardianship), with easily accessible air conditioners, which contain a significant amount of valuable copper, thus they are also frequently victims of metal theft. In fact, Whiteacre et al. (2008) discovered that churches in Indianapolis, Indiana were disproportionately victims of metal theft compared to other types of structures. Moreover, the Ecclesiastical Insurance Group (2014) of the United Kingdom, providers of insurance to religious institutions, reported over 11,000 insurance claims related to metal theft between 2007 and 2013. It would appear that when places possess the qualities discussed in this section and are in close proximity to a recycling center the instances of metal theft may rise. Unfortunately, research also demonstrates that once a place has been the victim of metal theft it is likely to suffer a repeat-victimization within 12 weeks (Ashby et al., 2014).

Literature Review Conclusion

Only five empirical articles regarding metal theft have been published in academic journals (Ashby et al., 2014; Posick et al., 2012; Sidebottom et al., 2011; Sidebottom et al., 2014; Whiteacre and Howes, 2009). The remaining information on metal theft is a patchwork collection of government and industry publications, anecdotal stories and news reports. However, the literature discussed thus far does demonstrate an emerging crime trend that has a significant impact on society. Yet, the lack of details related to the prevalence, costs and harms, motivating factors behind metal theft, information on where, when and how metal theft occurs and information on those who are involved has had significant negative impacts on the ability to confront this emerging trend.

Without specific knowledge on the problem including how often it occurs, what the costs and dangers are and details on who is committing the thefts attempts to prevent this crime will continue to fail. Identifying this lack of scholarly research the present study will answer the question of who commits metal thefts, why and how. Surprisingly, access to national, regional and local data remains largely unavailable, yet access to scrappers and metal thieves at local recycling centers presents a possibility to learn directly from the thieves themselves. Therefore, the present study will conduct an ethnographic study of scrappers and metal thieves to enhance the available literature with an understanding of who is involved, how, where and why.

III - RESEARCH METHODOLOGY

This study employs an ethnographic research plan involving participant observation and interviews of scrappers and metal thieves. Data for the study includes 1) unstructured interviews; 2) semi-structured interviews through email; 3) participant observation and 4) limited artifacts germane to the study and individuals interviewed. The goal is to provide a unique contribution to the field of Criminal Justice by defining characteristics, developing understanding, describing places and events and enhancing the meanings, concepts and definitions of metal thieves (see Tewksbury, 2009). The following chapter outlines the details of the research plan including research questions, data collection, operationally defined concepts and data analysis.

Research Questions

Since there is little empirical knowledge of scrappers or metal thieves, any data on these individuals will prove useful. The information and understanding gained in the present study will distinguish scrappers from metal thieves and thus provide a basis from which to evaluate metal theft. Developing research questions will guide the researcher toward a framework of knowledge regarding metal thieves that will ensure the data collected is useful in the formation of a conceptual framework. To that end, a number of broad questions are addressed in this research, including the following:

- 1) What taxonomy and subculture characteristics differentiate scrappers from metal thieves?

- 2) How should metal theft be defined, who are the metal thieves, what is their motivation?
- 3) What are the methods and techniques used by metal thieves and how are they learned?
- 4) What social controls influence metal thieves and how do metal thieves respond to these social controls

The first task when studying any social phenomenon is to determine the focus of the study.

Unfortunately, scrappers and metal thieves have rarely been studied, moreover, little is known about them, their characteristics, habits, culture or activities.

Therefore, the first research question serves to identify those who are involved in scrapping, focusing on their general characteristics, motivations, experiences, relationships with other scrappers, norms and codes. This inquiry follows a similar focus of other research on delinquent populations (see Copes and Tewksbury, 2011). A taxonomy of scrappers is developed and the scrapping subculture is explored. Taxonomies are an identification and presentation of particular categories or types of persons, which can be identified by characteristics that define a particular group and differentiates them from each other (Tewksbury, 2009). Once taxonomy is developed, an evaluation of the scrapping subculture reveals norms, codes and social structures that define the scrapping community. This effort is vital to understanding how individuals function and how they view themselves and others within the subculture. This area of study sees a divergence between legal (e.g., scrappers) and illegal (e.g., metal thieves) activities. In other words, the characteristics, motivations, experiences, norms, codes and relationships of scrappers are not the same as those who steal metal.

Once the differences between scrappers and metal thieves have been established, the next step is to develop a richer understanding of metal thieves. Research question two establishes what metal theft is and who is involved in metal theft. After metal theft has been defined, the general characteristics of metal thieves interviewed for the present study are

discussed. The motivations of individuals who steal metal are evaluated, including, how metal thieves drift into crime, neutralization techniques, enjoyment of criminal activity and the impact of drug usage. This is followed by an analysis of how metal thieves spend their criminal profits. This question also examines metal thieves' perceptions of the effect that the selling price for metal has on their activities. This chapter provides a richer understanding of who metal thieves are and what motivates them.

Thirdly, the researcher seeks to understand the methods and techniques of metal thieves. This question seeks to understand what factors thieves consider when identifying, locating, acquiring and selling stolen metal. Specifically, the role of places as crime attractors and generators, as well as factors related to guardianship is discussed. Once an understanding of the methods and techniques of metal theft has been distinguished, an evaluation of how metal thieves seek to avoid detection, and how they relate to and work together to commit crime is evaluated in light of opportunistic and calculated behavior. Finally, this chapter provides a detailed analysis of how metal thieves learn these methods and techniques.

The final research question examines social controls, which are describe an internal means of control, such as values, norms, relationships, moral codes, beliefs and commitments that encourage individuals not to violate the law (Nye, 1958). An individual's actions are often based on the effectiveness of these controls in three primary areas: direct social control, indirect social control and internal social control. This question identifies and describes the social controls that may influence metal thieves and examines how metal thieves respond to these social controls.

Research Methods

Qualitative research is the exploration and examination of social settings and groups or individuals who coalesce within these settings. Qualitative researchers seek to recognize

and understand individual behavior within society by focusing on the meanings, traits, people, locations, interactions and experiences (Tewksbury, 2009). These efforts allow researchers to share in the understandings and perceptions of others and to explore how people define, structure and give meaning to their daily lives (Berg, 2007; Tewksbury, 2009; Tewksbury & Gagné, 1997). Scrappers are part of an un-researched subculture with uncertain connections to metal thieves. Examining this group through qualitative methods, primarily through ethnographic work, is a necessary first step in identifying and developing an understanding of a subculture.

Ethnography has been practiced for many years and may be defined as, “A research method that places researchers in the midst of whatever it is they study. From this vantage, researchers can examine various phenomena as perceived by participants and represent these observations as accounts” (Berg & Lune, 2012, p. 225). Ethnographic techniques have been successfully utilized in other difficult to reach, delinquent or criminal populations (see Agar, 1973; Copes & Tewksbury, 2011; Gagné, 1992, 1996; Gagné & Tewksbury, 1996; Johnson et al., 1985; Peble & Casey, 1969; Tewksbury, 1990, 1993)

Theory Development. Prior to conducting any academic or field research, it is important for the researcher to identify an appropriate sociological or criminological theory to guide the research. In other words, the theory typically comes before (*a priori*) empirical research is conducted in order to provide a framework to guide the researcher.

Unfortunately, there has yet to be an empirical study which examines the motives, behaviors and beliefs of those involved in metal theft, thus, a theory has not be posited to guide the preset study.

Routine activities theory and rational choice theory have been utilized in several studies of metal theft (see Posick et al., 2012; Sidebottom et al., 2011, 2014; Whiteacre &

Howes, 2009). However, routine activities and rational choice are best suited to explain metal theft on an aggregate level. In other words, these theories are helpful in understanding the broad nature of prevalence, the role of the places, economic factors that influence theft, and other macro concepts. However, routine activities and rational choice theory assume the offender is motivated, and therefore are ill suited to explore the complex nature of individual metal thief's behaviors, and beliefs.

While no specific research has been discovered that specifically address metal thieves; several related studies on general theft and burglary have posited theories and typologies that should be considered for use in the present study. One of the more well-known is Edwin Sutherland's (1937) findings presented in *The Professional Thief*. In this book, Sutherland extensively interviews a professional thief in Chicago and develops an understanding of how thieves operate, think, and interact socially, the techniques they use to commit their crimes and more. While there are likely professional metal thieves who have devoted a majority of their time and abilities to stealing metal, it is unlikely that these thieves are common. Therefore, utilizing the theories presented by Sutherland may not be well suited to guide the present study.

Many other researchers have worked to develop typologies of burglars. Perhaps the most well-known is Walsh's (1997) continuum and typology of most-organized to least-organized burglars, identifying: professional burglars, known burglars, young burglars, juvenile burglars and junkies (drug addicts). Other researchers have developed typologies, often along similar lines, of age, experience, ability and fencing method. (see Cromwell, Olson & Avary, 1991; Goodman, Steffensmeier and Ulmer, 2005; Maguire & Bennett, 1982). However, there are some key differences between burglary or theft and metal theft. These

differences may lessen the effectiveness of these theories and typologies, as they are fairly unique to metal theft.

Some of the primary differences are that of metals' value, and methods of stealing and fencing it. For example, metal has no intrinsic value, in and of itself, to the thief, which means metal must always be sold in order to obtain something else the thief desires. This is in contrast to many other items that are commonly stolen, such as money, electronics and vehicles. Moreover, metal theft is unique in that the items stolen are always sold at recycling centers, alongside legally obtained items and essentially destroyed. In other words stolen metals maintain the same value as legally obtained metals, offer limited fencing opportunities (e.g., sold only to recycling centers) and are destroyed to make new products from them. These characteristics make metal theft very difficult to investigate. These components demonstrate that metal theft is a crime unlike nearly any other observed in society.

Therefore, because metal theft is such a unique crime it may demand a new sociological or criminological theory. Yet, without an initial exploratory study, such as the present study, how would a plausible theory be identified or developed? The answer lays within the research before theory orientation, which will provide information on refinement of existing theory, the creation of a new theory or as the basis to verify past theoretical assumptions.

The present qualitative study is well suited for theory development as, "qualitative research creates the concepts and proposes the theories that are used to launch tests and predictive tools...providing a foundation for theoretical understanding" (Tewksbury, 2009, p. 41-42). Conducting research before theory is often called grounded theory. Grounded theory involves constructing an appropriate sociological or criminological theory through the analysis of data, rather than analyzing data to prove or disprove an existing theory (Glaser &

Strauss, 1967). Since metal thieves have rarely been studied and there are no sociological theories directly applicable to their behavior in the current literature, grounded theory will be employed as the approach to the study and in the analysis of data.

Identification, Location and Sampling. The present study is an exploratory study of two groups: metal thieves and scrappers. Therefore, all those who meet the operational definition of scrappers or metal thieves were included. Currently, no research has examined the number of persons within either group (scrappers and metal thieves). Therefore, the present study makes no effort to be a representative sample and is not necessarily widely generalizable, but rather explores scrappers and metal thieves, “clarifying what, how, when, where and among whom behaviors and processes operate while describing in explicit detail the contours and dynamics of people, places, actions and interactions” (Tewksbury, 2009, p. 50). Moreover, no individual who meets the operationalized definition of scrapper or metal thief was excluded from the present study. However, over time as broad taxonomies of scrappers and their activities were revealed during data collection, certain individuals were sought for increased examination. This technique is often called a purposive sample. A purposive sample occurs when researchers use their special knowledge and expertise about some group to select subjects who represent this population (Small, 2009). Specifically, as the researcher gained knowledge and insight into the behavior and characteristics of scrapping this expertise allowed the researcher to identify and engage those believed to be involved in metal theft. This enhanced the identification, contact and understanding of metal thieves, as they were easier to recognize and engage, with relevant questions targeted to their activities.

Regardless of the type of contacts made during this study, each individual was asked to identify other locations frequented by scrappers and specific individuals who are involved

in metal theft. The goal was for the sample population to “snowball” from a few subjects at several sites to many subjects across multiple sites. A snowball sample implies that each contact may lead to another and so on, thereby expanding participants. Snowballing has been used frequently in the past, with success, to study delinquents, sensitive topics or difficult-to-reach populations, in the past (Gagné, 1992, 1996; Lee, 2000; Tewksbury, 1990, 1993). Attempts to snowball the population were made through verbal requests while in the field, and by distributing business cards requesting individuals to contact the researcher through phone or email.

With any type of research, the researcher must determine the location of the individuals to be studied. In the present study, three locations were identified as probable sources. First, the researcher contacted those who publically advertise their metal recycling services (e.g., junk car removal). These advertisements were commonly found in newspapers, other periodicals, news boards, street signs, painted on the side of a scrapper’s vehicle and on the internet. Second, some scrappers frequently search for metal along the routes in which cities collect bulk waste from homes. The researcher traveled these routes to observe and approach those in public as they search for metal to recycle.

The third method, which provided a location suitable for extended and repeated contact, was at local recycling centers. Each thief collects various types of metal for one exclusive purpose, exchanging it to obtain money. That exchange occurs at a single type of location—recycling centers. Thus, every metal thief, at some point, journeys to a recycling center and mingles with scrappers and staff while selling their metals. This provided the ideal entry point to begin initially making contact with thieves.

The final method utilized to interview individuals is through email. While email interviews were not preferred, they were necessary in some situations. For example,

individuals who were located a significant distance from the researcher, who request to be interviewed by means other than in person or by phone, or individuals who were incarcerated. In these cases, email interviews were conducted for the convenience of the interviewee. Email interviews have drawbacks, they are less personable, and it is difficult to establish an intimate connection or to understand the context and nuances of the conversation as with in-person interviews. Moreover, the delay between email replies makes it difficult to move conversations forward and perspective may be missing or misconstrued. Due to these difficulties and drawbacks, email was only used as a last resort method for contacting and interviewing individuals.

Getting in. Once the locations were established as entry points the next step was *getting in*. *Getting in* often refers to the techniques used to gain access to a setting and the participants that are being observed (Friedman, Bell & Berger, 2003). *Getting in* with difficult to reach and often stigmatized subcultures, such as scrappers and especially metal thieves, can be very problematic for an outsider, as the routines, rituals and argot (specialized language) is unknown. However, gaining entrée into delinquent or criminal populations is certainly possible (see Gagné, 1992, 1996; Hagedorn, 1988; Tewksbury, 1990, 1993; Wright, Decker, Redfern, & Smith, 1992).

To enhance the likelihood of successful ethnographic fieldwork the researcher followed Howell's (1972) suggested observation phases. These initial phases included gaining knowledge by visiting the research sites, establishing rapport and gaining support from gatekeepers. Since, there were very limited academic publications on scrappers to guide the present study it was vital that the researcher develop entry-level knowledge through other means. Thankfully, there are a variety of self-published autobiographies, how-to manuals, informative web sites, online group discussion forums, YouTube videos and even

commercially produced reality TV shows and a documentary movie on scrappers. The researcher used these resources prior to any attempts at *getting in* so he could express a degree of limited knowledge with the interviewees and be better prepared to understand and participate in the unique aspects of this subculture.

Next, the researcher contacted friends, family, co-workers and acquaintances asking for referrals to scrappers. Surprisingly, several came forward indicating they were actively involved or had past involvement as scrappers. Interviews were conducted with these individuals and served to develop knowledge of routines, rituals and argots of the scrapping subculture in a safe and low intensity setting. This, in turn, allowed the researcher to make inquiries without risking offending an interviewee in the field. In conjunction with these short interviews, the researcher observed and documented the activity occurring at recycling centers. These efforts included covert sales of metal to extend familiarity of the process within recycling centers. In addition, the researcher conducted observation of activity within the “yard” of the recycling center from vantage points adjacent to the property. Each of these activities permitted the researcher to gain a cursory knowledge of the norms; argot and procedures of the subculture, which enhanced a comfortable entry into the subculture as an empathetic outsider (see Gagné & Tewksbury, 1996).

Once an entry-level knowledge had been established, a primary research entry point for the present study was selected—recycling centers. However, contacting individuals at a recycling center is challenging. These challenges range from unintentionally annoying or harassing a business’ customers, being seen as an un-trusted outsider, to causing interviewees to be leery of the researcher or mistakenly believing the researcher is a police officer. These significant obstacles must be overcome in order to access the target population.

Therefore, the best method for *getting in* was through cooperation and support of gatekeepers. Gatekeepers are individuals in positions to grant or deny access to a research setting (Feldman et al., 2003; Hagan, 2006; Tewksbury & Gagné, 2010). The gatekeepers within a recycling center are, typically, the owners. These individuals provide opportunities for an insider's perspective through their relationships, background and access to scrappers (which are largely a restricted group). Alternatively, these gatekeepers may seek to thwart the research if support and trust of the researcher is not gained. During the present study, the researcher approached various recycling center owners, presented the purpose of the study and sought permission to contact and interview customers who arrived at the yard to sell metals. Moreover, support of owners served several other important roles, first, by lending their credibility to the researcher's activities as well as becoming or suggesting guides and informants to assist the researcher.

Guides are persons found within the subculture being studied who can assist the researcher in gaining credibility and making contacts (O'Leary, 2005). In the present study, the guides were yard managers or scale operators who handle the day-to-day functions of customer service. These individuals know and understand metals, their value, persons who sell them and other important factors related to scrapping. For these reasons, guides (yard managers or scale operators) were encouraged, and often did, refer the researcher to subjects who were would likely be particularly willing to engage with the researcher. These efforts served to snowball the sample and to locate other participants.

Once *in* the recycling center world, there was little opportunity to operate covertly. The recycling center business revolves around customers coming and going in a frequent and rapid manner. Very little opportunity occurs for extended and personal casual conversation or interviews if the researcher maintained a covert (hidden) agenda. Moreover,

engaging individuals at length to discuss their personal activities without a defined purpose is a socially awkward activity. Additionally, stigmatized populations may be more reluctant to disclose sensitive topics (Tewksbury & Gagné, 2010). Therefore, most individuals were approached and engaged in casual conversation in an effort to establish rapport and reduce trepidation concerning the researcher as an outsider. Once rapport was developed, the researcher briefly described the research and asked the subject if they would be willing to talk confidentially about what they do. Unlike other forays into difficult to reach subcultures where researchers have been seen as experts or already possessing formalized knowledge (see Tewksbury, 1994 & 1995), the researcher in the present study approached interviewees with a request for help in understanding scrappers, often under the purported guise of questioning common public opinion and conjecture. For example, the researcher frequently stated, “most people think scrappers are all thieves and druggies, is that true?”

By maintaining the persona of a somewhat naïve and empathetic outsider who was interested in countering cultural stereotypes and stigmas, scrappers and metal thieves were frequently willing to educate the researcher. The interest in understanding the perceptions, motivations, feelings and attitudes of scrappers and thieves was sincere despite the use of this study to develop policy designed to prevent metal theft. While maintaining empathy for metal thieves can be challenging, very few of the metal thieves were actively involved in theft at the time of the interview and often expressed regret for their actions. Moreover, when asked, most were eager to identify theft prevention techniques. Despite the criminal component of metal thieves, the researcher remained sensitive and genuinely empathic toward their feelings, thoughts and attitudes. With the self-presentation (empathetic outsider) combined with guides (yard managers or scale operators) lending credibility, the

target population was more comfortable with the researcher's presence and more willing to indulge information at greater depth (see Lee, 1993; Tewksbury & Gagné, 1997).

Interview Content and Collection Method. The nature of the current research was enhanced by participation in scrapping. The participant as observer role within social science research allows the researcher to engage in limited activities of a subculture (Howell, 1972). The type of participant observation used in this study is commonly referred to as moderate participation, which seeks to maintain a balance between insider and outsider so that the researcher can remain objective while, moderately involved (DeWalt, DeWalt, & Wayland, 1998; Schwartz & Schwartz, 1955). Throughout the course of this study, the researcher engaged in scrapping activities and sought opportunities to assist scrappers in their routine tasks and observe metal thieves. These opportunities consisted of assisting individuals unloading vehicles at recycling centers, collecting metals along common routes or traveling with individuals in search of metal. This participation enhanced the information flow and provided a deeper understanding of the interactions, techniques, relationships and meanings within the subculture.

However, participation at this level within a deviant subculture is not without risks (Lee, 1993; Tewksbury, 2009 see also: Miller & Tewksbury, 2010). The researcher was presented with opportunities to engage in questionable or dangerous activities (e.g., trespassing, dumpster diving) and presented with the opportunity to participate in criminal acts (e.g., stealing metal, burglary). In each instance of participation, the researcher consistently evaluated the circumstances to ensure that no serious violations of law occurred on the part of the researcher while seeking to maintain rapport with the interviewee (see Tewksbury & Gagné, 1997). For example, the researcher participated in dumpster diving (which in many cities is a violation of city code) and assisted interviewees search for

discarded metal in an open field and along a railway, without permission (which is likely trespassing). However, the researcher did not actively participate in theft, burglary or any other serious crime.

Similarly, observations of law violations or related stories of law violation (on the part of the interviewee), were observed and recoded for the study, but were not reported to law enforcement. For example, interviewee accounts of theft, burglary, trespass and other crimes that did not result in physical injury to another individual were not reported to authorities. Exceptions would have been made for acts that resulted, or would likely result, in physical injury to other persons. These efforts ensured the interviewee that they could, “embark on a risky course of action” (Lee, 1993, p. 123) with the researcher, which enhanced rapport, earned trust and augmented rich data gathering (Tewksbury, 2009).

In addition to participating and interviewing, the researcher also spent extensive time simply observing. Observation is not only the looking at but also the “breaking down of actions and interactions of people” (Tewksbury, 2009, p. 44). As already briefly discussed, the researcher conducted covert observations at various recycling centers by selling metals as a customer and conducting surveillance outside of the centers. The researcher was also involved inside the “yard” of recycling centers, once permission has been established. During this time, the researcher conducted overt observation of the staff, customers and any others who came and went within the confines of the recycling center. During these periods of observation, field notes were recorded through an audio recorder and later transcribed for analysis.

During all phases of research, observation, interview and participation, the researcher utilized the broad research questions outlined above as a rough interview and observation guideline. The interview of scrappers and metal thieves were conducted in an unstructured

style with the persona of an outsider eager to understand the interviewee's experiences and lives. Unstructured interviews (typically) have no predetermined standard wording, order, language or set of questions (Minichiello, Aroni, Timewell, & Alexander, 1990). Rather, unstructured interviews vary according to the social situation and the interaction between the interviewee and the researcher. In this way, open-ended questions were asked of the interviewee that allowed leeway to direct the interview in much the same way as a conversation between acquaintances. Unstructured interview techniques were important in the present study as they are a natural extension of participant observation, are founded on the natural interaction between researcher and interviewee (Patton, 2002), they also provide a depth of understanding, valuable insights and advances in knowledge on the social aspects of metal theft within culturally grounded contexts (Tewksbury, 2009). Based on reflexive listening the researcher provided follow-up questions, constructed new questions, pursued clarification and guided the interviewee toward the targeted knowledge base. Unstructured interviews on grounds the interviewee was comfortable with (frequently the yard) provided an optimal setting for dynamic situations where the interviewee provided details not requested, thus allowing rich details to arise within the conversation.

During each interview, the researcher collected audio recording of the conversation. Researcher field notes and observations were also captured through audio recordings. These audio field notes contained observations gathered prior to engaging the interviewees and general comments, thoughts and observations by the researcher, after the interview was completed. Specifically, these field notes served to record what the researcher observed with his senses, what he experienced, thought and as a method of recording what others explained to him about what was happening and why (see Tewksbury, 2009). These audio recordings were transcribed verbatim and served as the basis for a majority of the.

Transcription was completed by the researcher and a third party independent transcription service. Where possible, or necessary, photos and other artifacts of the metals, tools and locations (but not those involved) were collected and included in the analysis to enhance memory, understanding and application.

Data Collection Activities

The data collected in the present study can be classified into four categories: interviews, email communications, participation and observation, and artifacts. Data collection activities occurred in the fall and winter of 2014 to 2015. The present study represents individuals from seven states including Florida, Indiana, Kentucky, New York, Ohio, Oregon and Tennessee.

Unstructured interviews were conducted with 55 scrappers and metal thieves. The interviews totaled approximately 33 hours. Two of the interviews occurred through email, resulting in 38 pages of written dialogue. In addition to interviews, the researcher spent approximately 100 hours in field observation and participation. The observation and participation occurred at seven recycling centers in Kentucky, Indiana and Oregon. The researcher also spent time interviewing, observing and participating with scrappers while they searched for metal in public areas and on occasion when invited to their home. Finally, several artifacts were collected. These artifacts included scrapping advertisements, photos of vehicles and transportation devices, various metals, locations and buildings, and even personal photos and videos of scrapping activity voluntarily submitted by a thief.

In addition to interviews with scrappers and metal thieves, the researcher interviewed 12 current and retired law enforcement officers who were active or had been active in investigating metal theft. These interviews were unstructured and provided the researcher with knowledge of how metal thieves are commonly viewed by law enforcement as well as

allowing the researcher to identify what knowledge officers had of metal thieves and how they operated.

Data Analysis

While analyzing content the present study employed the social anthropological approach identified by Miles and Huberman (1994). This approach is commonly used to identify and explain the way people operate in particular settings and how they understand, make sense of, respond to and generally function in their day-to-day life. Moreover, this type of analysis is best conducted by researchers who have spent considerable time within a given subculture—or at least with those within the subculture—and have participated (directly or indirectly) within the subculture. This participation and awareness of the subculture provided the researcher a unique perspective on the data collected and on how the individuals interpret their activities, relationships and other sections of society. This enhanced the researcher's ability to code data in a way that allowed conceptual and theoretical frameworks to be developed.

The data for the present study consisted of field notes, transcribed unstructured interviews, semi-structured email interviews and a small number of assorted artifacts. A qualitative content analysis was conducted of these sources. A content analysis is a careful, detailed, systematic examination and interpretation of social communication in an effort to identify patterns, themes in events and persons and meanings, which produce a cohesive representation of the subject (Berg & Latin, 2008; Leedy & Ormrod, 2005; Neuendorf, 2002, Tewksbury, 2009). The present study examined both manifest and latent content within the data. Manifest content consists of data, which is physically present and quantifiable (e.g., written transcripts), whereas, latent content consists of identifying symbolism underlying the

manifest data (e.g., the verbal and physical mannerisms during the interview recorded in field notes) (Berg & Lune, 2012).

Examining the manifest and latent content assisted in the development of what Strauss (1990) identified as *in vivo codes* and *sociological constructs*. *In vivo codes* are the terms used by a subculture (e.g., scrapping, stripping). These codes often represent the behavioral processes within the subculture. Identifying these *in vivo codes* is important, as these common terms and their use have not been previously identified or defined. *Sociological constructs*, on the other hand, are analytic constructions formulated by the researcher, but are not necessarily reflected in the conscious perspective of the subculture (e.g., subsistence scrappers). Both communication components are important to recognize and understand when studying a subculture. Including *in vivo codes* and *sociological constructs*, “add[s] breadth and depth to observations by reaching beyond local meanings and understandings to broader social scientific ones” (Berg & Lune, 2010, p. 357).

Once all the data had been transcribed, the researcher completed a thorough reading of all field notes and interviews. This served to initially identify themes developed during data collection, and to identify new hypotheses and themes previously unrealized. In other words, this process ensured that hypotheses and themes were grounded within the data (Glaser & Strauss, 1967). After the initial reading, the researcher again examined the data in two stages. The first stage is called open coding. Open coding is the process by which researchers thoroughly read, identify and extract themes and topics discovered within data (Strauss, 1990).

As the analysis continued, the data was again meticulously read. The second reading resulted in additional coding and linking of data, and is often referred to as focused coding. Collections of codes containing similar content were grouped together to form concepts.

These recurrent concepts were linked together and coded again to narrow the focus and develop categories that provided details on the subjects and situations studied. Focus coding allowed for a structured, repeated and detailed examination of the data that identified concepts and categories (both latent and manifest) which confirmed, disproved and proposed theories of the subculture studied. Eventually these categories and concepts served to frame further examinations of the data and generate or confirm theory—thus grounding the theory to the data and allowing for taxonomy generation. The researcher used software by Provalis Research called QDA Miner (or Qualitative Data Analysis Miner). This computer software assisted the researcher in coding, annotating, organizing and analyzing the data.

Institutional Review Board and Ethical Considerations.

Institutional Review Boards (IRB's) exist within each College or University as a means to approve, monitor and review research involving human subjects, to ensure, among other things, ethical conduct and treatment of those human subjects. The present study was approved by two IRBs, the University of Louisville and Campbellsville University. The University of Louisville (the researcher's sponsor institution) approved the study on October 1, 2014 through the Expedited Review Procedure, according to 45 CFR 46.110(b) under Category 7. The University of Louisville IRB approval also included a waiver of the requirements for the investigator to obtain signed informed consent forms, since the research presented no more than minimal risk to the subjects and involved no procedures for which written consent is normally required outside of the research context. Campbellsville University (the researcher's employer) chose to conduct a full review and approved the study on October 6, 2014. Campbellsville University did not require the use of signed consent forms either.

Throughout the collection of data, each participant was ensured their conversations and identity would remain confidential. To that end, each participant was assigned an alias (unless they specifically requested otherwise). Moreover, identifying descriptions of the participants, locations, businesses, or other individuals discussed during the interview have also been altered to reduce the likelihood of subject identification and to enhance confidentiality and anonymity. Occasionally, identifying information was provided by the participant or known previously by the researcher. In these situations, the identifying data was maintained in a separate (non-digital) notebook, which served as the only connection between the identity of the participants and their contributions to the study. This information was stored separately and destroyed at the end of the study. The present study produced several forms of data; raw audio files recorded during interviews and while taking field notes, email correspondences and the verbatim transcriptions of field notes and verbal interviews. These materials were stored on a secure, password-protected server at the University of Louisville. Upon completion of the data analysis, the audio files were permanently deleted from this server, whereby no connection between the individuals' comments and their identity remained.

Methodology Conclusion

The analysis of the data collected and the findings are presented in four findings chapters. Each chapter highlights a central theme while providing details of ancillary themes. The first chapter provides a broad understanding of scrappers and the differences between metal thieves with each successive chapter continuing to focus narrowly on the activities and attributes of metal thieves. This process allows for a broad understanding of metal thieves, and of how they operate within society.

The data collection methods and analysis plan presented above provides a comprehensive description of the events, settings and individuals involved in scrapping and metal theft. This enhances current academic literature by providing the first known analysis of this kind on scrappers and, specifically, metal thieves. The qualitative nature of the present study has helped to develop an understanding and provide insight into the sociological organization of metal thieves, including how they operate and interact. Moreover, it provided the building blocks necessary to develop advances in theory, by establishing a foundation for the application of grounded theory, which may lead to theoretical advancement of metal thieves and crime prevention techniques.

IV - TAXONOMY & SUBCULTURE

Unfortunately, scrappers and metal thieves have rarely been researched and therefore little is known about them, their norms, habits, culture or activities. Consequently, when studying a subculture for the first time it is necessary to understand who is being studied and who is not. This chapter will begin by defining who is being studied through operationalizing a definition of scrappers and metal thieves. This will provide the groundwork necessary to move onto examining scrappers and metal thieves with a more detailed analysis, which will produce, for the first time, taxonomy of those involved. Taxonomy will allow researchers to generalize scrappers with broad characteristics, motivations, experiences, relationships with other scrappers and their perceived risks and benefits associated with their activities. This will further enhance the ability for scrappers to be studied and understood. Finally, this chapter will examine scrappers and metal thieves as a subculture seeking to identify and understand their unified norms, values, codes and actions.

Operationalization

Scrappers and metal thieves have rarely been empirically studied. Yet these groups are at the center of significant media, public and government attention. Unfortunately, the absence of sound knowledge has created a void, which has often been filled with unfounded claims and misguided assumptions. Part of the reason for this has been a lack of operationally defined concepts. Scrappers and what they do (scrapping) does not appear to

have been defined in the literature. Similarly, the concept of metal theft has been poorly operationalized, resulting in a definition that is often too inclusive or not inclusive enough. It is therefore necessary to define the concepts within the present study and to provide foundation for the present study, and future research in this area.

Scrapping: “the act of regularly collecting; fragmented, damaged or discarded metal items, which are no longer useful or have not maintained their original value, in order to recycle them for a financial profit”

Metal Theft: “the theft of item(s) for the value of the constituent metals”
(Whiteacre et al., 2014)

Taxonomy

Now that the actions of scrapping and metal theft have been operationally defined, the next step is to identify those who are involved in these activities and examine how they can be grouped for easier study. Developing taxonomy is an important first step in studying any group of people. Classifying those involved in scrapping and metal theft will allow for advanced conceptualization of characteristics, motivations, typical experiences, relationships with others within and without the taxonomy.

Developing taxonomy of scrappers and metal thieves is challenging. This is primarily because there is no typical scrapper. The divisions cannot be made by age, employment, gender, education, race or any commonly attributed external distinction. However, extensive observation of actions and interactions within the setting of recycling centers and while searching for metal, combined with unstructured interviews, make it possible for the present study to distinguish and categorize scrappers and metal thieves. Based on these observations

and conversations five varieties of scrappers and metal thieves are identified². These are labeled the Subsistence Scrapper; Scrapping Professional; Professionals who Scrap; Philanthropic Scrappers and Metal Thieves.

Subsistence Scrapper. Subsistence Scrappers are individuals who scrap in order to earn money for necessities or to supplement a limited income that does not currently meet their needs. These individuals are unique in three important areas, their financial and social status, their scrapping technique and their motivation. Subsistence Scrappers consists of a wide variety of individuals including a broad range of ages, both genders and many races. In fact, one of the only consistent characteristics is the lack of financial means.

A sizable portion of Subsistence Scrappers is homeless. Some are transient and may live in and out of shelters or homeless camps, while the remainder live in substandard housing conditions. Subsistence scrappers are typically disheveled in appearance. This unkempt appearance should not be confused with Scrapping Professionals who are often dirty from engaging in their scrapping work. Rather, Subsistence Scrappers have an unkempt, poor appearance, which is primarily due to a lack of income and resources for personal hygiene.

Subsistence Scrappers locate their metal by searching along roadways, alleys, through public recycling bins, garbage cans, dumpsters and other places near the boundaries of society. Subsistence Scrappers do not have vehicles, as they are too expensive. Rather, they rely on walking or bicycle riding to search for metals. Subsistence Scrappers who walk often use grocery carts, backpacks or other adapted devices to carry larger volumes of metal to the recycling centers. Likewise, Subsistence Scrapers who utilize bicycles often have bags of

² Individuals who occasionally recycle metal are not included in this taxonomy. While this group is large, the infrequent nature of their recycling habits, the low level of knowledge, skill and the lack of involvement or identification within the subculture indicates they should not be included.

metal hung across handlebars or have adapted milk crates or other containers to hold their metals. Subsistence Scrapers are located exclusively within urban environments. This is a necessity as Subsistence Scrapers rely on walking or bicycles to fulfill all their daily needs, including scrapping, purchasing food and other daily chores. Subsistence Scrapers have a detailed knowledge of the area in which they live and scrap, and often have contacts who provide metal for them (e.g., neighbors who save cans for them, businesses which allow them the privilege to get metal from their dumpsters).

Money is an especially important motivating factor for Subsistence Scrapers. This is especially true as all of the Subsistence Scrapers interviewed for the present study were unemployed or disabled. A small minority held erratic part-time jobs, but the majority were unemployed. Consequently, most considered scrapping their work. For example, when discussing scrapping, Subsistence Scrapers frequently used language consistent with those employed full time, “not bad for a day’s work” or “I work every day”. Roughly, half received limited government assistance. For example, many received food stamps, a few received housing assistance or disability income. Very few subsistence scrapers received more than one government assistance benefit, leaving them to make up the difference by scrapping. While nearly all the Subsistence Scrapers discussed their enjoyment of scrapping, the lack of financial funds from work or government assistance substantiates that most Subsistence Scrapers are scrapping out of a true need for money in order to survive.

While Subsistence Scrapers are in significant and consistent need of financial resources to survive (e.g., pay bills, purchase food), the most frequently mentioned motivation for scrapping was cigarettes and alcohol. Coming in next were mentions of bills, followed by food. Lastly, a small portion of Subsistence Scrapers mentioned using or purchasing drugs. While purchasing cigarettes and alcohol were discussed often, a limited

number of Subsistence Scrappers discussed being alcoholics. Rather, alcohol, and especially cigarettes, was more often used as entertainment, enjoyment and for social interaction. Similarly, drugs were mentioned on occasion, but their use was often implied to occur after other needs have been met. Chad, who lived in a dilapidated house and received \$400 a month in retirement, explained scrapping this way, “Yeah, I get cigarette money, cigar money, spice (synthetic marijuana) money, blunt money”. It is important to distinguish between the primary motivation for scrapping in conjunction with alcohol, drugs and tobacco usage. These activities do not drive scrappers to scrap; rather they are often the reward for scrapping. In other words, very few of the Subsistence Scrappers appeared intoxicated while scrapping and none said they scrapped exclusively to support a drug, alcohol or tobacco habit; rather those vices were used afterward for enjoyment, celebration and socialization.

Subsistence Scrappers were the largest group studied, comprising 33 percent (n=18) of those interviewed for the present study, but accounted for the least volume of metal. This is primarily due to limited transportation that prohibits them from acquiring large pieces of metal. Their lack of mobility also means they must compete with each other for the same scarce resources. All the Subsistence Scrappers interviewed expressed a strong distain for metal thieves, often proudly telling the interviewer, “I’m not no thief” and explaining that being known as a thief would limit the contributions others in the neighborhood give them, as well as their access to the recycling centers. Overall, Subsistence Scrappers are struggling to survive financially, are generally homeless and walk or bicycle public areas looking for small amounts of metal (e.g., usually cans), so they can earn a small amount of cash each day. This amount rarely rose above \$10 and was often be used for cigarettes, alcohol or food.

Subsistence Scrappers are rarely involved in theft and have an extensive knowledge and relationship with each other and those in the community.

Scrapping Professionals – *Metal is their business.* Scrapping Professionals are individuals who acquire the majority of their income from scrapping. Scrapping Professionals accounted for 20 percent (n=11) of the present study, but are perhaps the most publicly visible and immediately recognizable of all scrappers. They tend to have vehicles loaded down with the various metals or have signs advertising their services. Once again, there are few physically distinguishing characteristics of this group. The present study observed and interviewed individuals of all age ranges, diverse education and differing backgrounds, races and genders. The only immediately apparent consistency is the tendency to work in teams. Scrapping Professionals are unique in two important ways. First, scrapping occurs on a large scale, utilizing vehicles and extensive tools. Secondly, Scrapping Professionals tend to make the majority of their income from scrapping.

The techniques to locate metal take many forms that are unique to this taxonomy. Frequently, Scrapping Professionals advertise services of junk removal. In these cases, individuals call and contract with a service to clean out junk from a field, garage, basement or other location. Scrapping Professionals may respond and evaluate the quantity and quality of metal. If satisfactory, the Scrapping Professionals will charge a fee to remove the materials, dispose of non-metal items and then scrap the remaining metal. Other techniques include advertising junk car removal. Each car removed to a recycling center can bring between \$300 and \$700 dollars depending on vehicle weight and the price of metal.

Scrapping Professionals also drive routes searching for metal items set out for public waste collection. Many cities no longer publish bulk waste pick-up dates due to Scrapping Professionals who flock to the area, are seen as an annoyance and reduce the recycling

income for the city. However, Scrapping Professionals typically know the days and locations of bulk waste collection in their town and have a detailed understanding of when is the best time to scrap. Some Scrapping Professionals would also collect non-metal items for resale at consignment, flea markets or by other means.

Nearly all the Scrapping Professionals interviewed discussed having partnerships with local businesses to supply them metal. These businesses would call or set aside metal for Scrapping Professionals to pick-up on a regular schedule. While this technique was not often discussed in any detail, it appeared to be the source of a substantial portion of income for Scrapping Professionals.

This taxonomy of scrappers also has a detailed knowledge of the streets and byways of their community. Moreover, these individuals may operate in urban and rural areas since they possess transportation (e.g., pickup trucks), which allows them to search quickly and efficiently for larger metal items. Scrapping Professionals are also unique in the degree to which they process metals. Many of them have a detailed process of separating each type of metal so the maximum price is gained. For example, several Scrapping Professionals interviewed bring metal items back to their house in order to break them down by metal type. Once the metals are completely separated and their storage space is near capacity they will then take individual types of metal to the recycling center. However, not all Scrapping Professionals operated this way. Some merely piled scrap metal (e.g., bed frames, couch springs, washing machines) onto their truck and sold the metals mixed together for a bulk price.

Scrapping Professionals maintained a strong social awareness of each other; many of them communicating at the recycling center and communicating off the yard, often through cell phones. These relationships were often friendly relationships or rivalries and Scrapping

Professionals were quick to assist other Scrapping Professionals when the need arose. Unlike the other taxonomies, Scrapping Professionals relied nearly entirely on their skills as scrappers to earn an income. Therefore, they had to be skilled at scrapping to succeed. This involved the knowledge of how to scrap, adequate transportation and tools along with contacts. Many Scrapping Professionals skills, abilities, knowledge and transportation represent the highest achievement in the scrapping subculture and were frequently envied by other scrappers.

Professionals who Scrap – *In the course of business.* Professionals who Scrap are individuals who collect and recycle metal during the course of their regular employment, and made up 15 percent (n=9) of the present study. Examples include plumbers, electricians, window or siding installers, HVAC workers, construction laborers, general maintenance employees and auto mechanics. This category does not include individuals who simply place a dumpster on their property to collect scrap metal for wholesale to a recycling center on a monthly contract. Rather, Professionals who Scrap are individuals who put forth a concerted and purposeful effort to locate, identify and remove valuable metal during the course of their work. Examples may include a plumber who carefully collects the remaining copper piping parts until the end of the workweek, or a construction laborer who sells excess rebar after a job is completed.

Many of these individuals' gender, age and race are similarly reflected by the population of those who are commonly employed in these fields. Thus, this category tends to include younger white males, but is not exclusive to these individuals. Moreover, the diversity of employment circumstances and metal materials observed in this category are extensive. Many professionals who scrapped visited the recycling center on a regular basis. Others would come as soon as they had an adequate load of metals to recycle. This varied

extensively based on the type of metals being collected. For example, electricians often collect small amounts wire over time and frequently visited once a week or so, whereas a siding installer may come after each siding job.

The type of metal sold varied according to the field the individuals work in and may include copper, aluminum, steel, brass, iron, lead and other rare metals. While Professionals who Scrap usually only bring in the metals they have available at work, occasionally they also bring metals they discover in the course of their job. For example, an HVAC installer may observe a refrigerator on the side of the road while on the way to a job and include the refrigerator with the other metal he collected from old HVAC equipment. On occasion Professionals who Scrap work as a team and split the money earned, but more often than not function as individual scrappers. The funds earned by these individuals often augment their existing income and is frequently seen as *fun money*, spent on food, alcohol or other luxuries.

Other than thieves, this group shared the least similarities with the others. Some of the Professionals who Scrap claimed to have been a Subsistence Scrapper or a Scrapping Professional prior to being hired in their current employment status. However, once employed full-time none scrapped extensively outside of work. Conversely, many scrappers in other taxonomies learned the value of metals by being a Professional who Scraps, and transitioning into another category when employment was lost.

Professionals who Scrap are highly valued customers at recycling centers. They are seen as trustworthy frequent customers. Their status as professionals in an industry removes a significant portion of suspicion and stigma that is associated with other types of scrappers and thieves. This trust may or may not be warranted, as Professionals who Scrap tend to move within the taxonomy dependent on employment and have significant opportunities for

theft and dishonest activities when working with metal for a customer. Professionals who scrap are difficult to study, as they tend to stop at yards only between jobs, have little time for interviews and are not as social within the scrapping subculture as are others.

Philanthropic Scrappers. Philanthropic Scrappers are individuals who scrap, primarily, for philanthropic purposes. Included within this category are individuals who raise money for charities, utilize the funds earned from scrapping for humanitarian efforts or collect metal to give to others; often Subsistence Scrappers, to help them earn a living. Philanthropic Scrappers tended to be older and male; however, this was not always the case. This was by far the smallest category observed during the present study, accounting for only 8 percent (n=4), yet unique enough to garner its own distinction.

The distinction between philanthropic scrappers and other types of scrappers is only in how the funds are used. Philanthropic scrappers exclusively use the funds on behalf of others, rarely, if ever, keeping any of the profits for themselves. These individuals may scrap in the course of their work, actively search for metal on a routine basis or collect metals from friends and family. Regardless of their collection methods, the goal was singularly to help others. For example, one individual, who, prior to retirement was a Professional who Scrapped, organized individuals within his church to help him search for discarded metal as a fundraiser for a new building addition. He and a team of church members sought, collected, processed and sold metal totaling over \$35,000 in four years. Another Philanthropic Scrapper collected metal in the course of his work as a maintenance employee and used the funds to purchase materials used for a religious course he taught at the local addiction and homeless shelter. Several other collected cans to contribute to groups conducting can drives as fundraisers (e.g., Boy Scouts) and others assisted Subsistence Scrappers by collecting metal

for them, and even providing a vehicle and ID if a Subsistence Scrapper needed assistance moving and selling metal.

Regardless of the method of collection or designation of the profit, Philanthropic Scappers were actively involved within the general subculture of scappers. Each of the Philanthropic Scappers knew others who scrapped across the other taxonomies³ and understood the norms, values and codes of scrapping. Nearly every Philanthropic Scrapper engaged other individuals in scrapping, either encouraging or suggesting the activity among their acquaintances or teaching others how to scrap. Philanthropic Scappers are unique to scrapping only in their use of the funds after scrapping, which is to better others.

Metal Thieves. Metal Thieves are individuals who take metal which they have no legal right to possess and recycle it for personal gain. Specifically, for inclusion in this taxonomy the individual either admitted to or hinted at a history of metal theft. Several scappers in other taxonomies discussed a single incident of theft or shared an experience they did not consider theft, but would likely have met the legal definition of theft. However, the metal theft taxonomy is wholly for individuals who often or exclusively engage in theft to obtain metals. Twenty-four percent (n=13) of those involved in the present study were metal thieves.

This taxonomy again defies the standard level of inclusion or exclusion as Metal Thieves vary in race, sex, age and education. However, there are certain similarities that help to describe typical metal thieves. Nearly all Metal Thieves operate in groups, at least for the majority of their crimes. This group is usually developed from longstanding friendships, family or due to romantic relationships. Occasionally, Metal Thieves will operate individually

³ An exception to this was metal thieves. No Philanthropic Scrapper admitted to knowing a metal thief.

outside of the group; however, the majority of thefts occur in pairs or larger groups. While the relationships within the group are fairly stable the relationships between other Metal Thieves is often a negative one. For example, thieves may steal metal from other metal thieves or engage in physical altercations over territory.

Nearly all metal thieves are employed full time. Many of them are employed in well-paying jobs requiring specialized skills or licenses. A majority of thieves are employed in a trade skill (e.g., electrician, HVAC, general maintenance or contracting). This employment provides several important aspects for metal thieves. First, their background and expertise provides technical skills, knowledge and often the tools necessary to carry out large, extensive and technically challenging amounts of metal theft (e.g., removing miles of copper wire from energized electrical stations). Second, their regular employment often exposes them to areas with high quantities of valuable metals that are frequently unguarded. Thirdly, Metal Thieves frequent employment status in an industry that often deals with metal, can be used as a cover for their theft activities or serves as a convenient excuse to be in possession of large amounts of metal.

Beyond the skills and knowledge developed through their employment many Metal Thieves began scrapping legally, prior to drifting into criminality. The reasons for the drift into criminal behavior vary among thieves but commonly involve the ease of theft, high financial incentive and low risk, often coupled with an initial perceived financial need. However, most Metal Thieves, unlike all the other taxonomies do not enjoy collecting metal. Whereas, most scrappers express an enjoyment and even an addiction and excitement to scrapping most Metal Thieves do not receive similar gratification for their actions. In fact, many expressed guilt and remorse for their actions or justify their behavior. Moreover, Metal Thieves do not function within the subculture of scrappers after they begin stealing. Rather,

they know and work with each other and no longer hold to the general norms, beliefs, mores and codes of scrappers.

The motivation for metal theft, as with many types of crime, is money. Interestingly, very few of the Metal Thieves interviewed were in need of money to meet basic necessities. Rather, many utilized the money to augment their regular employment and spent the additional funds for pleasurable activities, to assist relatives who were in financial need or, in a minority of cases, to purchase drugs. Each Metal Thief who discussed drug usage as a factor identified maintaining a high or not being sick (e.g., coming down from a drug induced high) as a motivating factor for metal theft. However, none of the Metal Thieves who were drug users exclusively used the profits for drug pursuits. Often drugs were a factor, but money for bills and other needs also were involved in the theft.

Some metal thieves were caught stealing while others were arrested on unrelated charges and sent to prison. The majority of Metal Thieves advised that they could not stop stealing metal until after a long bout in prison or jail. Overall, Metal Thieves are unique from scrappers and share very few similarities, other than recycling metal. Their thought processes, motives, skills, abilities and techniques are largely different.

Scrappers as a Subculture

Regardless of where a scrapper falls in the taxonomy of subsistence scrapper, scrapping professional, philanthropic or professionals who scrap, the scrappers researched for the present study shared certain beliefs and behaviors which were different from the dominate culture. To varying degrees, scrappers functioned in and remained a part of the dominate culture, yet their behaviors and beliefs created a variance between themselves and conventional society, thus creating a subculture. Subcultures can be defined as, "A separate reality through a distinct set of norms, values, mores and attitudes that contrast with those of

a larger and more dominate culture” (Miller, Schreck, & Tewksbury, 2008, p. 115). These differences often manifest themselves in a subculture’s actions, norms and codes.

Scrapper’s Code. To understand the norms and codes of scrappers it is first necessary to understand the nature of scrapping. In other words, an appreciation for the methods, techniques, limited availability of metals, and how scrappers function is necessary to establish prior to describing the various codes. Therefore, the following section will establish whom, why, how and where scrappers search for metal and the potential issues surrounding those activities. Once this general knowledge has been established, the norms and codes that guide scrappers’ actions will be identified and discussed in various settings and situations.

Scrapers are constantly searching for metal. In some ways, the search never seems to end and is often a daily task necessary for financial support or because the activity is addictive and enjoyable. Regardless of the reason, the constant search for metal serves to enhance the divide between scrappers and conventional society. For example, Mrs. Jackson, whose only source of income is scrapping, stated, “I do this all the time...I got to always look for [new] cans. That is how I make money”, whereas Cody and Amber also said they search, “all the time”, yet when asked if scrapping was how they made their living they exclaimed in unison, “No!” laughing while they explained they both held jobs outside of scrapping. Regardless of the reason, nearly all of the scrappers interviewed indicated that they scrapped on a regular basis with just over half indicating something similar to Dustin, “I scrap every day because I need the money”.

In addition to the need to be constantly searching for metal, the number of persons who are scrapping has also increased dramatically. Leo recollected his experience scrapping during the late 2000s, saying,

Everyone knows about it now. You know this whole scrap thing started with the way the economy was going, you know, and once the recession hit that's when everybody started doing the scrapping thing and now it's this big, big thing.

Moreover, during a covert participation the researcher visited a recycling center on a Saturday before Christmas and found the scrapping crowd so large it took over an hour in line to reach one of two scales, each of which was operating with a team of employees to assist in the unloading, separating and weighing process. After the metal was weighed, the researcher was then issued a check because the onsite ATM, which normally distributed payment, had been depleted of cash after only a few hours of operation. While this experience was atypical for the researcher, many of the recycling center employees frequently reminisced of times in recent memory when similar long lines were the norm. Cory mentioned how busy the yard was when he began working in 2008, saying, "...we had people lined up outside the fence and everything".

The amount of metal available to be scavenged by scrappers is, to some degree, finite. In other words, while metal products are always being discarded and replaced (e.g., appliances, aluminum cans, construction materials) the volume of these discarded materials may not increase at the same rate or in the same place as those seeking to scrap them. This is especially true as the economic recession in the late 2000s led to a reduction in consumer purchases and decreases in construction projects. This reduction in available scrap metal coupled with an increase of individuals turning to scrapping as a way to augment a declining or nonexistent income has significantly increased competition for scarce sources of quality metal. Carlos, a scrapping professional pointed out, "...now there are a lot of people doing it, cause so many people are out of work. A lot of people are doing it now", and then

explained that he does not scrap as often as he used to back in the '80s and '90s because the competition is so intense.

The potential for conflicts between scrappers while searching for, and acquiring, scarce resources, or the theft of metals, seems probable. Especially since scrappers, as a subculture, are generally marginalized by society, function outside the traditional physical boundaries of society (e.g., alleyways, trash bins) and frequently operate within questionable limitations of legality (e.g., trespassing, collecting metal from marked recycling bins). Therefore, it is doubtful that traditional means to establish norms or settle disputes, such as law enforcement or conventional societal mores would be available or applicable to scrappers. The present study revealed that scrappers have developed their own subcultural norms, values and mores or what may be described as a *scrapper's code*, which specifies acceptable behavior within the scrapping subculture. This concept was never directly identified as such, nor was aspects of it directly explained by any individual scrappers. Rather, throughout the present study consistent themes and concepts appeared during the course of interviews, observations and participation, allowing the researcher to identify a common scrapper's code.

Territorial Issues. Locating the metal is perhaps the most obvious sphere of potential strain and an area where norms and codes of behavior must be defined in order for harmony within the scrapping subculture. The general methods and techniques for locating metal tend to be unique within the taxonomies and rarely cross. For example, subsistence scrappers tend to dumpster dive or search along alleyways for small and easily carried metals, while scrapping professionals tend to use vehicles to search for larger items or receive requests to remove large volumes of metal from customers. Professionals who scrap in the course of their business locate metal while conducting their work and thieves usually locate

metal where few others tend to tread—abandoned buildings or on private property. These separate techniques, which remain steadfastly within the taxonomies, reduce the likelihood of territorial disputes crossing taxonomy boundaries.

However, within the taxonomies the competition to find and acquire metal is strong. For example, while searching for metal with Spoons, a subsistence scrapper, I asked him how much competition there was. Spoons perked up, lowering his head slightly as his eyes widened and he said in a very grave tone, “a bunch!” He went on to estimate that there were approximately 30 scrapping teams who scrapped in the small area of town where he typically scrapped. Despite the significant number of scrappers searching for the same resource the present study revealed very few reports of arguments or other conflicts, surrounding scrapping territory. It was not that scrappers did not have routes or territories that they quasi-claimed first right to, rather, scrappers tended to operate on the axiom of *first come, first serve*, or as James proposed, “I mean [the] early bird gets the worm”. Jared, who has been scrapping for over two decades, explained the unspoken code this way,

Researcher: Is there a certain route that you go?

Jared: Yeah, I've got a route that I do every day. There are other people that hit it too.

Researcher: Do you get along with them?

Jared: Oh yea! Street people are all brothers. Now if I come down this street and I see a guy over here picking up cans, I will take a different route or the other side of the street. We have respect for each other.

Researcher: So you kinda avoid each other?

Jared: Well, not really, if I see he has that, I will let him have that. I show him a little respect and I hope he does the same thing for me.

Researcher: And for the most part that happens?

Jared: Yeah!

Jared's beliefs were shared by most scrappers the researcher spoke with, including David. When David was asked how he would respond, "if someone was in [your territory]" David echoed Jared and many others, simply saying scrappers, "respect each other", which typically means letting the first one in the area collect the metal unmolested, even if that is a part of your typical route or a favorite place.

However, not all territorial encounters were solved uneventfully. Gary shared an argument he recently had with another scrapper,

Gary: I get along with everybody, but one man. Because he thinks that he is the only one that can go in this certain dumpster. I mean, when you go in the dumpster, whoever comes first that's who...you know if I go somewhere and someone is already doing it, I ain't going to mess with them. [You] supposed to move on when you see somebody else. But, this one man he comes to me yesterday hollering, 'you can't get in this dumpster. Man you better get on your way, I know the owner of this dumpster and he already told me I can go in there.'

Researcher: So you cannot claim it unless you are there.

Gary: Yeah, it's who was there first. But if I am there I'm not going to quit cause he walked up.

This situation was resolved by Gary continuing to search for metal while the other scrapper yelled and cursed, eventually departing to search elsewhere. Based on the present study it would seem territorial disputes are rare. However, in cases where a conflict does arise the perceived norm violator, the one claiming territory, is simply told what Jennings said to another scrapper who had attempted to claim territory, "I told them first come, first

serve...you don't own this [place], it's not yours, you don't have your name on it, and you can't tell me what to do”.

While infrequent territorial disputes did occur, it was far more common for scrappers to share territory or even to recommend locations for other scrappers to search for metal. However, sharing territory or location secrets carried with it certain norms, as well. For example, Shane said he and his scrapping partner, “shared locations, but only [with] the ones that helped us out, as well”. Moreover, James, a professional scrapper, indicated he shares location secrets with other scrappers, but expects them not to visit those locations without him present,

Like for instance, say I know several scrappers and sometimes they roll with me or I roll with them, and they know certain places to go, and I know certain places to go, and you know when you find them at your place one day and you all ain't [scrapping] together. Okay, some get mad [and think] you should only come here with me.

Likewise, Nicole, also a professional scrapper said,

Nicole: I found a few people will share information but it is very competitive. A lot of people won't share information. So, if for example you say, yeah I know here and here... The next thing you know they will be there trying to pick it up’.

Interviewer: So you can share too much, right?

Nicole: Exactly, like it’s competitive!

Despite the heavy competition among scrappers to find places with consistent quantities of metal, very few scrappers experienced conflict with each other during this process. This is primarily due to several codes of conduct commonly held within the scrapping subculture, such as *first come, first serve* and *showing respect*. These codes, which generally entail conflict avoidance, ordinarily prevent or dissipate a potentially negative

situation of a territorial dispute. When the norms are violated by fellow scrappers, the aggrieved scrapper is quick to remind the other of the codes governing territory claims. Finally, scrapping is a competitive process, and while productive territory is often, kept secret, limited information can be exchanged under certain circumstances, typically in a *quid pro quo* manner.

Not a Thief. With rising competition among scrappers, the increasing value of scrap metal and a decrease in the supply of easily accessible sources of metal it seems probable that instances of theft would increase among scrappers. After all, as the subculture already often lives and operates in the marginalized parts of society (e.g., back roads, slums, abandoned properties) it is likely little missing from the areas would be noticed, fewer items would be reported to law enforcement and even less would be successfully prosecuted. However, each time the researcher discussed metal theft within the scrapper subculture nearly all denied ever stealing. In fact, many expressed an extreme dislike for metal thieves.

Nearly every scrapper interviewed for the present study was asked directly if he or she had ever stolen metal. The most common reply was, “I’m not a thief!” Many respond to the researcher incredulously. A few, like Chad, went on to tell the researcher exactly what he thought of thieves, “I see the motherfuckers stealing. I don't like thieves.” It is important to understand that many scrappers agreed that the possibility for theft was often present, but almost none of them admitted to stealing. Consider Jared’s comments, which generally represent a fair number of scrappers interviewed,

Jared: I ran into a guy one time who said, ‘I know where we can get some copper. But we got to wait until it’s dark.’ I said I don’t want nothing to do with it.

Researcher: Now, why is that? What keeps you from going and stealing it?

Jared: Because I'm not no crook. And I don't want it to come back on me. Because, you know I like to do my shit legal.

Other scrappers cited ethics, character, honesty or faith, indicating they would not steal for one or all of these reasons. For example, Chad claimed his Native American heritage prevented him from stealing,

I am Native American and I think it's very un-Native American to go around doing illegal shit...I mean look how hard I go out and work for the shit I need, so why do I want to take something out of someone else hands. I can't do that shit. I have to live with myself. I can live with that old stinky beer smell on my hands better than I can that fucking guilt of stealing off people.

Similarly, when the researcher asked Jennings what kept him from being tempted to steal, he replied, "God, He knows everything I do, I was raised in a Christian home, so he knows everything I do...People work hard and earned dollars for the shit they've got...I [make] honest money".

A few others mentioned their past work in security and their honest nature as preventing them from considering theft or even trespassing. For example, when the researcher asked what kept Craig from stealing he said, "Hell! I was 20 years security office, anti-theft. I wouldn't even dream like that. I would not even walk in a man's yard, unless he said I could". Likewise, Cowboy said,

That is something I will not do, I will not steal nothing from nobody, I'll ask for it...I've been that way all of my life, I was a security officer over at Churchill Downs, and I've just got it bred in my system to be honest with people.

While the majority of scrappers cited personal convictions, honesty or faith as reasons for not stealing a minority mentioned concern for being caught. Chris said,

Chris: You know I almost brought a fucking sign; you know one of those signs that says no left turn. It fell as I was coming up [the street], it fell right in the middle of the street.

Interviewer: So why didn't you bring it?

Chris: Cause I would probably get in trouble. You know it. Probably get in trouble for that. I can't sell something that belongs to the state. You know.

Similarly, Frank commented,

Frank: ...You see people stripping houses. I wouldn't do that cause I am not going to jail.

Interviewer: Ok, so you don't do it because you don't want to go to jail, any other reason?

Frank: Cause it's not legal. If it was legal, none of these houses would have copper in them.

Interviewer: Is it ever tempting?

Frank: Honestly, yes it is! Cause you know you are walking past an abandoned house and you know there is like \$400 in that basement just sitting there. But, I can't do it, cause I am not criminal minded like that. I'm not going to risk \$400 for two years when I can make \$400 in a week at [work].

Another question asked of nearly all the scrappers in the present study was, "How do you know what is free for the taking and what belongs to someone". This question was designed to elicit the evaluation process of the scrapper, and his or her ability to distinguish between items, which should and should not be taken. To the researcher's surprise, there was great consistency in the responses, again demonstrating the norms and values that characterize scrappers. The most commonly cited method concerned situations where items

in question were in a dumpster, trashcan or set out on the curb. For example, Frank said, “But I don't take nothing unless I ask the person or it's by the trash can, you know what I am saying? If it's by the trash can it's fair game”. Next, the item, “if it's broke” or appeared used also signaled many scrappers that the item was free to take. The third most common description of items scrappers considered free for the taking were items left in an alley.

Antonio explained it, saying,

Well that's, I guess, that is a personal call for an individual. If it's in the alley and there is a bunch of stuff laying around. Most people don't leave their stuff in an alley, you know what I mean? If it's in the front yard laying around, obviously it's somebody else's. But, if it's in the back alley and laying there either someone else took it and dumped it or somebody dumped it. **If's in the alley, it counts as fair game.** (emphasis added).

When pressed further about distinguishing items “up for grabs” and items that are not, a common code of *ask first* was continuously discussed by scrappers. For example, Frank shared a story to demonstrate the code, “I came across some copper pieces. Man, some nice copper, #1 copper! I seen it and asked the guy (property owner), hey, can I have this since you are going to throw it away? He was like yeah.” Several scrappers suggested they *asked first*, so not to harm a relationship with the property owners who allow them to scrap on their property. Sean pointed out, “But sometimes, you know you can go around to different places and ask people and they give you stuff”, and Chad discussed his fear of being cut off from a source saying,

I don't steal no cans man, I pick them up, you know what I mean? You can steal fucking cans, but it would be stupid. If I took a bunch of cans without asking, as soon as everyone finds out they won't give me none no more.

Scrapers were split on if an attempt to ask counted as permission. For example, if the resident was not at home the scraper had to make a choice to take the item in question or leave it. Craig implied that if he were not given express permission, he would not take the items because he would consider himself a thief,

Researcher: Ok, so do you ask? Like if you see something do you go to the door and ask?

Craig: I have before. But if they don't answer I'm not gonna. That is bad business. A thief is a thief. You know I mean that is why they steal; they are a thief. And, they are always looking for something like that.

Samantha, who also trained her cousin to scrap, was less clear about the necessity of *ask first*, I told him you got to be careful. I have told him you can't be going on nobody's property or anything like that. He knows, when he goes scrapping or when he goes through the alleys. I told him, you got to you know, **if you got enough energy** go up to the house and ask the guys, can you have the refrigerators in the alley, sitting there. You know it's ready to get rid of, but go ask. See if they care to get rid of it, obviously it's just sitting there and no one's [been able] to get rid of it. (Emphasis added).

Regardless, a strong majority of scrapers discussed *asking first*. This was suggested not only to avoid situations where taking an item could be claimed as theft, but also because, "it's what you're supposed to do" or as, Jerome said, "I don't [scrap] in someone's yard or nothing. No, I ain't no thief". Even when the item is clearly set for trash Nicole said, "...sometimes I even go up to the house, ring the doorbell and ask cause it's something that I can't believe that they are throwing away".

It appeared clear through interviews with scrappers that none of them openly supported theft. Moreover, many of them outright condemned the practice, and most of them righteously claimed, “I’m not a thief!” While the reasons for not stealing varied, the majority centered on some type of ethical reasoning, prior work experience or a concern for being caught. However, one thing seemed clear, scrappers, as a whole, claim they do not steal and do not like people who do. These subcultural mores ran strong throughout all taxonomies, with the exception of the thieves. Moreover, when the researcher asked to be referred to those who are engaged in stealing, nearly unanimously scrappers commented they did not know of any. A few mentioned they knew of several thieves, but not well enough to know details, such as a phone number or name. It would appear that scrappers, for the most part, have little to do with metal thieves and have adopted a code amongst themselves of, *no theft*.

In addition to the consistent distaste for metal theft, many scrappers had a well-formed understanding of what was available for taking and what was not. Clear boundaries of what is available where, and when, appeared to be established across most taxonomies and in all locations of the present study. Moreover, the code of *ask first* was purportedly commonly adhered to within the scrapping subculture. Whenever doubt existed or even if something seemed too good to be true, *ask first* as a code of behavior was commonly cited as a method to keep from stealing or being accused, either of which harmed the scrappers’ image within the scrapper community and types of those who may provide metal to individuals.

A Cohesive Community. The scrapping subculture also maintains a fellowship within itself and a surprising degree of loyalty and helpfulness toward one another. In other words, most scrappers are acquainted with one another and maintain those friendships while

scrapping. Moreover, in situations where assistance is needed to collect metal or a scrapper is in need of personal assistance, scrappers tend to step forward and assist each other. This community cohesion and helpful atmosphere among scrappers further substantiates that scrappers operate within a subculture, which not only has shared experiences, but also maintains certain values and behavioral expectations.

At the Yard. Since most scrappers operate individually or in small teams and are dispersed across a wide area searching for metal the primary time and location to develop relationships occurs at the recycling center or *yard*. It is during the time spent together at the yards that scrappers tend to develop relationships with each other, as well as with the recycling center staff. While each recycling center is unique in its layout, procedures and processes, the yards visited during the present study functioned much the same, and scrappers' experiences can be broadly divided into four stages. Each of these stages possesses an opportunity for scrappers to engage in conversation with each other.

During the first stage, scrappers arrive on foot, bicycle or in a vehicle and unloaded their metal onto the carts or into containers provided by the recycling center. This process may be time consuming, especially when the scrapper has a large volume of metal. During this stage, the researcher occasionally observed scrappers assisting each other to unload large items, sharing tools, or providing suggestions and insight on separating certain types of metals. When the yards are not busy employees often assisted in this process, and also engaged each scrapper in conversation and provided guidance on separating metals. During this stage the researcher met Ray who brought in buckets of rusted and mud covered metal, much of which was unidentifiable. As the yard staff helped him unload the metal Ray explained how his son, who does remodeling work, called him and suggested he come by the house he was working on to get some metal from a flooded basement. Ray asked his son, "Is

it worth my gas?” and his son said, “Yes”. Ray looked at the researcher and the other scrappers gathered around, pointed at the unidentifiable brown colored metal and said in desperation, “And look at what I got! I told him, ‘Man, you are kidding me!’”.

Stage two begins as soon as the metal is unloaded and the carts and containers are wheeled by the scrapper to the scale. While waiting for their turn at the scale, many scrappers carry on general conversations or briefly comment on what they or other scrappers had brought in especially if it was a “big score”, a “good lick” or an unusual metal. While waiting in line for the scale during covert participation the researcher was engaged in conversation by Robert. As the conversation continued the researcher pointed out the others talking and asked about relationships at the yard. Robert indicated most people talk with each other saying, “If there's a long line I'll sit here and bullshit, like I'm doing with you.”

Once at the scale, the metal is separated and weighed according to type (e.g., brass, aluminum, copper). During this time, the demeanor of most scrappers' changes, the lighthearted social conversations that occurred moments prior tended to pause while scrappers intently watch their metal being evaluated, separated and weighed by yard staff. Throughout observation, the researcher witnessed many scrappers subconsciously demonstrate signs of tension or anxiety during the latter part of this stage. Scrappers might tightly wring their gloves, nervously tug at clothing, purse their lips together or impatiently sway on the balls of their feet. Most scrapper's eyes rapidly dart back-and-forth between the scale weight display and the metals being sorted by employees. This occurred for Ray too. During the weighing process, he intently observed the yard staff and the scale weight, eagerly waiting to learn if his efforts would pay off. While some scrappers remain fairly silent during the weighing process, others anxiously engaged in superficial or nervous conversation with the staff and occasionally other scrappers.

After the metal is weighed, stage three involves collecting payment. Conversations during stage three typically occurred while scrappers were waiting in line to receive payment from a cashier or an ATM. Conversations during this time are usually more lighthearted and included topics beyond metal. Depending on how satisfied the scrapper is with the results their attitude could vary from relief and enthusiasm to frustration and pessimism. Regardless of the outcome, however, scrappers tended to casually discuss their triumph or disappointment with other scrappers. For instance, Ray's mud covered metal produced a surprising amount:

Staff: \$12.26, Ray. (Ray's eyes widen as he began to laugh, looking at each person standing nearby, waiving his claim ticket.)

Ray: Thank you!

Researcher: Are you happy?

Ray: Yeah! That's my gas money AND a pack of cigarettes! I'm going to enjoy this!
(As Ray walked away, he shook his head in disbelief while giggling and saying to himself)

Ray: Twelve dollars, I ain't never!

After payment had been received, scrappers moved on to an optional, stage four. It was at this time that some scrappers chose to linger around the yard for a short time to socialize with fellow scrappers. For example, after receiving payment, Robert sought the researcher, flagging him down as he was driving away. Robert and the researcher continued to engage in conversation, this time about things other than metal. After a short time, phone numbers were exchanged and Robert even offered to share his recently acquired marijuana, proudly pulling it from his pocket and presenting it to the researcher to inspect its quality. While some scrappers frequently spent time in stage four talking amongst themselves, other

scrappers were quick to leave. To some degree, this stage and its length were dependent on the time of day. If a scrapper had found enough metal requiring a journey to the scrap yard before the day's end they were often quicker to leave in an effort to locate more metal and return before the yard closed. Whereas, the later in the day the scrapper arrived the more likely they were to engage in conversation during stage four, as they did not plan to venture out again to search for metal.

These recycling center, or *yard*, relationships appear to be the basis for many of the friendships observed during the present study. For example, when the researcher asked scrappers about their relationships with other scrappers, many said something similar to Cowboy, "Oh yes! I've got several friends of mine out at the junk yard where I go at". The yard provides the physical location needed to meet other scrappers and grants crucial time during each stage of the yard process to develop relationships.

On the Streets. While the yard may function to kick off a relationship or strengthen a previously established friendship, it is evident that some relationships are established prior to contact at the yard. In other cases, relationships continued beyond the yard and into the search for metal. Either way, strong bonds seemed to be forged within the scrapping community. An extreme example would be the relationship Cowboy and his scrapping companions maintained. While discussing scrapping relationships with Cowboy, he said, "As a matter of fact, [I scrap with my wife and] my wife's ex-husband". Apparently, at some point in the scrapping team's history, Cowboy's wife was married to his scrapping partner, whom she divorced to marry Cowboy. Despite this spouse exchange, the group continues to maintain a strong relationship, centered on the pursuit of scrap metal. While this type of relationship may be inconceivable for most of society, as well as most scrappers, Cowboy indicated as long as everyone was focused on metal it was not an issue.

Cowboy's was not the only familial relationship encountered in the present study. Sean and Travis is a father and son team, Mrs. Williams scraps with her daughter, Cody and Amber are dating and Gary and Frank are brothers. Frank helps Gary walk his metal down to the yard at the end of each day, and uses his ID to make the transaction because Gary does not have an ID (which is required by law). During an interview Frank commented,

Frank: I just help him bring it down here. But, I don't really do the scrapping. He does most of it.

Interviewer: So he finds it; you just help him bring it down here? That is awfully nice of you for a brother.

Frank: Ha, (he says chuckling) It is!

Interviewer: Sometimes it ain't worth it I bet.

Frank: No! Especially with the attitude he has. But, I just look over it. Go on and do what I have to do and let it be.

Frank is not the only scrapper who helps family. Samantha, a professional who scraps in the course of her business, helped establish her cousin as a professional scrapper several decades prior,

Samantha: I had a cousin that bought him a truck scrapping. He didn't have no education and you know, no High school education or nothing. And I got him into scrapping. He bought him a little truck scrapping and then he started riding around and that is all he does. He still does it.

Researcher: So you taught him how to scrap and he has been doing it for a couple years?

Samantha: Well, he has been doing it since '86. I showed him in '86 how to scrap. He used to live; he was in the dumpsters, anyway getting cans and stuff. But, you

know I showed him how to get junk. He would ride around with me and we would go junking.

Even scrappers who were not related discussed their friendship when they crossed paths searching for metal. When the researcher asked scrappers, “Do you get along with everyone else who’s a scrapper?” the majority responded something similar to Jen saying, “Yes I do!” or like Gary who eagerly added, “I get along with everybody”. Frank stated he had, “At least four other [friends] who scrap. I get along with them very well. There are a whole lot of people who scrap”.

While only several examples have been included within the present study there were many examples of the friendships and pleasant acquaintances that were established due to scrapping. It is probable that scrappers are around one another frequently and thus likely to develop relationships. Moreover, the negative stereotypes which conventional society may apply to those who belong within a subculture that involves rifling through what many in society may consider waste, serves to forge stronger bonds between scrappers than with other members of society.

When in Need. This strong bond, which scrappers share, is further demonstrated by the frequency and diverse ways in which scrappers assist each other. This type of collaboration occurs at many levels including, but not limited to, locating metal, acquiring metal and providing tools or instruction on how to separate metals. For example, Samantha discussed some elderly or disabled scrappers she knows saying,

There are a couple of them that call me now, because they are like, ‘I cannot do this no more, I can't scrap no more’, their back is bad and, ‘I can't do it, so, if I find anything I will call you, let you know and you can come and get it’, you know. I said,

‘ok, keep me in mind’. And if I can't, I know someone else that will go get it, like [my cousin], I will call him first.

In fact, this is one of the most common partnerships, when a subsistence scrapper needs a vehicle to transport metal. Often another scrapping friend or acquaintance who has a vehicle is called and assistance is requested. Frank explained how this works for him, saying,

Frank: Right now, I have a bike. My plan is to have a Ford Fusion. But I do have [scrapping] friends that have a truck, so whenever I scrap and I got a pile I call and I am like, ‘Hey I need you to come pick this pile up for me real quick’”.

Interviewer: What do they charge you for that?

Frank: Just a few bucks for gas, cause they are friends.

By the same token, Brett, a philanthropic scrapper talked about his friends, who are subsistence scrappers. He said, “There are a couple of times he (a scrapping friend) has big loads and I take him over there (the recycling center) cause he can't drive, so I take him”. Similarly, Samantha said she had a scrapping, “Friend of mine that is re-doing a house and stuff and I am helping him take stuff out. I got a truck and he don't, so he give me a little bit of something [when I help].” As demonstrated, here money is often exchanged for vehicle assistance. However, most commonly, the money was insignificant and primarily used to cover vehicle expenses.

Scrappers also tended to assist each other when they were having an unsuccessful day of scrapping. Spoons mentioned, “The days I can't find nothing scrappers come by and help me...cause they know they got their truck load down and they know I ain't got nothing”. Likewise, Chad shared,

Some days it nasty weather, and some days it's the nicest days on earth, and I work my ass off and ain't finding much and someone (indicating a fellow scrapper) will say, 'Hey you want some cans', and I will say, 'Yes please', you know.

David shared, "You know, when times are rough, we try to find scrap [together]. Everybody is doing it" referring to the occasional and impromptu partnership he has with scrappers when he is struggling to make it.

Samantha who is a scrapper and maintenance worker for a local government apartment complex described how she proposed and instituted a division wide policy designating a location where maintenance workers can leave unwanted metal parts and appliances in order to help those who are trying to make a living off scrapping,

Well, we have a pad where I work. And, whatever the contractors we have that come in and tear stuff out leave, [we put] the scrap and stuff on the pad. The pad is open for these guys that ride around in trucks and stuff, and it keeps us from having to get rid of it. So, we call them to come and get it. And, they can make them a little money or whatever.

Despite the competition to locate and secure metal as a means of income, scrappers are frequently willing to place helping each other above their own pursuits. Whether that assistance is driving another scrapper and their metal to the yard, or giving a down-on-his-luck scrapper a little metal, scrappers demonstrate a strong bond and commitment to help each other. As Dustin put it, "We made sure each other got what they needed".

No Honor Among Thieves. As has been identified, scrappers tend to function as a subculture sharing similar actions, behavioral norms, values and codes. These common subcultural attributes appeared robustly across all locations and by most individuals who participated in the present study. However, thieves are an exception to the scrapping

subculture. Practically all of those who were involved in stealing metal did not act or think as most other scrappers. Nor was there a cohesive concept of values, norms and codes presented by thieves. Therefore, while nearly all thieves called their activities scrapping and many self-identified as scrappers, their thoughts, behaviors and values were clearly not aligned with the majority of scrappers in the other taxonomies, nor did the taxonomy have clearly defined values and beliefs.

While, in general, thieves and scrappers had different values, norms and codes, there were a few similarities. The most common aspect of the scrapping subculture, which was found among most thieves, was how thieves got their start in metal. Most explained that they began to scrap legally or as Dustin said, “We did it for about a year legally”.

A few other thieves admitted that they often scrapped legally, but admitted when they saw something they wanted; they would come back and steal it. David, who has an extensive network of metal theft friends, explained it by saying, “A lot of old boys do it legal, you know, but if it's something that they can't just take (implying stealing) they'll be back. They'll group up, they'll put a plan together, and they'll be back”. Moreover, John provided the clearest example when he related the story of how he and his scrapping partner searched for metal on his family farm, but then drifted into theft,

We [were] just [on] the family [farm], was hauling scrap one day, we rode past that field (a neighbors), and it had a bunch of tobacco frames in it. Next thing you know I don't know really which one thought it up. We thought about it, and we had just kind of ran out of scrap one day, and [when we did scrap] were coming out with about \$20[each]. So we just kind of pulled in over there with the truck, and just kind hooked up to the tobacco frame, and took it over there and got like \$80 something, and I was like dude! Then we got to the point we was hauling one or two a day.

Another common difference between the subculture of scrappers and metal thieves were their beliefs, norms and codes relating to territorial disputes. While scrappers tended to *show respect* to each other and operate under a code of *first come first serve*, metal thieves were territorial, with no established code of conduct. For example, Dustin described several instances where there were conflicts between other metal thieves who were also stripping abandoned homes which he had “already spoken for,” whereby he considered it claimed. He went on to explain, “If someone else was getting our metals, there were a couple of fist fights.... [we] just pretty [much] told them to fuck off”.

Dustin went on to explain, “There were some [thieves] you just hated because they would steal your stuff”. He was not the only thief who mentioned this. Several thieves discussed how it was common to steal from another thief. This could occur at the thief’s home, like at David’s house, “While I was in jail they cut all of the wiring out of my shop and took my pump off the well...all of my brass fittings off of the faucets...just about everything that wasn't nailed down”. Theft of a thief’s metal even occurs at a theft site. Leo, a thief who conducted highly organized repeated thefts of copper from abandoned buildings discussed how other thieves would steal the material he was stealing,

Leo: There was one time I actually was going in there, and I'm walking up the hill, and I see these two guys, and when they see us they ran off into the woods. So I just figured they were just there doing something [that] they weren't supposed to do, so I ended up going into the building. [Later in the day] I went outside and one of the guys was running up the hill and I told, him ‘man listen you don't have to, I'm not a cop. You don't have to run, whatever you want to do, go ahead and do it. There's plenty for all of us’. I had about two thousand dollars' worth of copper on the floor ready to go, and he said, ‘you guys can't be here scrapping, my uncle is the caretaker’.

So at that point, you get scared and you just pack up your stuff and leave. Well, we came back the next night and all of our stuff was gone. They pretty much just said that to get what we already took.

Interviewer: So they got one over on you?

Leo: Yeah they got one over on us...and that's happened a couple of times where we left stuff in the building, and went to pick it up that night and the stuff was gone.

Unlike scrappers, who maintained a level of trust with each other, most metal thieves did not trust each other. Jennings shared, "I've trusted people in the past and they've screwed me". Chris explained that working with other thieves was troublesome because, "They are like, oh I helped you, I helped pull this out and I helped do this, where is my half at?" Moreover, thieves were even more unlikely to share territory than scrappers were. Jessica revealed, "But you did not discuss what you done cause you didn't want them to know where you done went".

Another sticking difference between metal thieves and scrappers is the company they keep. While most scrappers appeared legitimately hard-pressed to identify known metal thieves, the metal thieves seemed to know each other. For example, David said of his acquaintances that are metal thieves, "A dozen would be a light number there's probably 12 to 20 and there's not a one of them that won't steal". Similarly, Dustin estimated he knows, "20 people legit and about 15-20 that stole".

Similar to the scrapping subculture, some of these theft acquaintances or friendships were made at the scrap yards. Dustin explained how he met other thieves saying,

Dustin: At the scrap yard or going into properties

Interviewer: You talked about meeting other scrappers that stole at scrap yards, how did you know them as stealing or did you just start taking and find out later?

Dustin: Most found out later but when you see certain things come in you know they are stolen.

As Dustin mentioned, some relationships with other thieves were forged when meeting while stealing or burglarizing a building and “trying to get the same stuff”. However, a few other thieves mentioned “meet[ing] through the drug world” or through other criminal relationships.

Regardless of how thieves met, they were unlikely to help each other, unless they were in an established partnership. Chris, talking about working with other thieves, said, [I] just prefer to do it alone. I ain't trying to split something with nobody. It's not that I am fucking being a dick. I'm not being greedy. I don't have nothing. So the more of what I can get the better.

Chris's comments were fairly common across thieves. There was a general lack of trust of one another. For example, Michael described his relationships with his partner saying “Who knows, he might not have even given back equal splits because the yard we used didn't usually even give a receipt”. Finally, the few times any assistance was given to another thief it was only to, “the ones that helped us out as well”.

The scrapping community functions as a largely cohesive subculture. There are established norms and codes, which shape the relationships between scrappers. However, most of these values, beliefs and behaviors are largely absent from thieves, and in a few instances appeared contradictory to the scrappers' code. Overall, metal thieves were territorial, suspicious of each other, tended not assist one another and often knew many other thieves. The majority of metal thieves were not simply scrappers who stole, but rather functioned separately and outside of the subculture of scrappers.

V - METAL THIEVES

As has been demonstrated in the findings related to taxonomy and the scrapping subculture, metal thieves are unlike scrappers in many ways. Metal thieves do not share the same values, codes, norms and beliefs as scrappers. Therefore, it is important to distinguish who metal thieves are. In order to do that it, is necessary to first define what metal theft is. Once a thorough understanding has been established of what metal theft is and whom metal thieves are, this chapter will examine the motivations for committing theft to provide a deeper understanding of metal thieves and their behaviors.

Defining Metal Theft

Metal theft has rarely been defined in literature. Rather, what research has been conducted tends to assume an unwritten definition or relies on a local or state ordinance to define metal theft. However, there are three significant problems with this method. First, is local ordinances and state laws may vary significantly thus making metal theft difficult to define, track and study across varying geological boundaries.

Second, some definitions fail to encompass the scope needed to understand all the components of metal theft. For example, some definitions and legislation on metal theft often uses the language, scrap metal. However, scrap metal typically means metal that has come to the end of its useful working life. Therefore, some definitions and laws related to metal theft only include metal that is no longer useful. These definitions fail to consider

metal theft of new copper pipes, vehicles in drivable condition, copper wires currently in use or any other metal item that is still performing its intended function.

The third problem with metal theft's definition is exactly the opposite. In this case, the definition may be too ambiguous or broad in scope. For example, some cities have ordinances that stipulate that any waste set out at the curb for recycling or solid waste collection becomes the property of the city. In other words, the city becomes the owner of trash or waste when it is moved to the curb by the owner. Therefore, any unauthorized removal of the waste, metal or otherwise, is a criminal offense. Strict application of this definition would result in defining nearly all Subsistence Scrappers and Professional Scrappers as criminals and metal thieves. Clearly, defining metal theft this broadly unnecessarily widens the scope of metal theft and alters the focus of prevention efforts.

Due to these complexities, developing a definition, which encompasses all the necessary components of metal theft without being too inclusive, is difficult. For the purposes of the present study, a definition of metal theft used by Whiteacre et al. (2014) will be used:

Metal Theft: “the theft of item(s) for the value of the constituent metals”

However, an important caveat will be the exclusion of those who may technically be committing theft when they acquire metal items that have been set at the curb for disposal. These items set out for trash collection have historically been considered free to take by both the previous owner and the individual collecting the items, and is not the focus of the present study. This exclusion will enhance the ability to concentrate on metal thieves who acquire metal from individuals who maintain affirmative possession of their metals.

Who are the Metal Thieves?

The sample size and geographic location of metal thieves in the present study is not robust enough to provide generalizable demographics for all metal thieves. Moreover, a few of those interviewed declined to provide personal information (e.g., age, education) citing privacy concerns. However, based on the demographic data available the metal thieves in the present study tended to be male (92%) and younger than scrappers with the most common age range of 30 years old followed equally by those in their 20's and 40's. Moreover, while blacks and Hispanics were represented, the majority of the metal thieves were white (85%). Interestingly, of those who agreed to answer questions about education, 54% of metal thieves had some level of college experience. This exceeds the 10% of scrappers who advised they had college experience; however, is consistent with the national average of 59% of persons age 25 and older who have some college experience (U.S. Census Bureau, 2015).

The over representation of college experience among metal thieves compared to scrappers may be a result of employment and advanced technical training among many metal thieves. The majority of metal thieves (69%) were employed full-time while stealing. Moreover, all of those employed had past or current work experience in an industry that granted access to, training in, and valid justifications to possess, metals. For example, metal thieves' work experience ranged from employment at a recycling center, as an electrician, an HVAC installer, working in general maintenance or contracting and even as a car salesman who specialized in taking junk cars on a trade, which were then recycled. Due to the high frequency of employment, along with college experience, it is not surprising that less than 15% of metal thieves in the present study were homeless. Moreover, drug usage was a factor discussed in only about 30% of the metal thieves interviews.

These findings stand in stark contrast to the common opinion among law enforcement, which is typified by an interview with Detective Lopez, who is a field detective frequently investigating metal theft on the West Coast:

Detective Lopez: Most of the people that I deal with in reference to metal theft; they are methamphetamine or heroin users, [with] very little to no education at all. That is something that intrigued me when I got into the metal theft investigation aspect of it, was the highest level of education of the people that are arrested is 7th or 8th grade. Most of the people that violate the metal theft laws are male but you have a high number of females who are stealing it now for the simple fact that it's easy money... Usually, for the most part, the typical scrapper the typical metal theft thieves are going to be homeless people between the ages of 35 and 55.

Interviewer: Okay, well these are pretty specific numbers. Is this something you said you thought about this before and looked at it?

Detective Lopez: Yeah, I am actually interested in developing maybe a company largely to study metal theft and how to help prevent it so I've done a lot of research⁴. Because of all of the metal thieves that [I know] those are the [factors] that I've found to be the most common.

It is challenging to identify the reasons experiences of Detective Lopez and many others in law enforcement contradict the findings in the present study. The differences may be due to location; while seven states are represented in the present study, only one metal thief was interviewed from the West Coast. More likely, the discrepancy may exist between individuals who are often captured by law enforcement while stealing. Only about half (53%) of the

⁴ This research consisted of tracking his personal interactions with metal thieves and reading periodicals about metal theft.

metal thieves in the present study had been arrested for metal theft. Therefore, the difference between common perceptions of law enforcement and the findings in the present study may indicate that metal thieves with college experience, who do not use drugs and who are employed are less likely to be caught than other thieves who lack education, are homeless and are drug users.

Motivation for Theft

After establishing general demographics of metal thieves within the present study, it is important to evaluate motives. Understanding how and why individuals began to commit theft, why they continue stealing and especially why metal is targeted over other items is an important and rarely examined issue. Gaining a firm appreciation of the motivations of metal thieves will assist in understanding why and how they operate and what techniques can be utilized to prevent metal theft.

Scrapers Drifting into Theft. Kevin Whiteacre, Assistant Professor and Director of the Indianapolis Metal Theft Project, posited that the majority of thieves begin honestly scrapping, but are drawn into a gray area and begin to break the law (Whiteacre, 2014). Whiteacre's comments are supported in the present study, which found that nearly all of the metal thieves began scrapping legally prior to engaging in theft. Very few began recycling by stealing; rather, they tended to drift into metal theft. A criminal drifting into crime is not an entirely new theory. David Matza (1964) developed the theory that criminals drift out of conventional behavior temporarily setting aside common moral norms, values and codes. The drift into metal theft tended to occur in one of two ways.

The first, and most common, were when a friend or acquaintance brought a scrapper along to steal metal. During this first venture into metal theft, the once legal scrapper realizes the ease and significant amount of money involved in metal theft. Eric described the first

few weeks he was involved with metal theft after a lifelong friend, who had been stealing metal for years, sought him as a partner, “You know honestly you almost got hooked on it like a dog on drug or something because...honestly to me it was like thrilling easy money!”

Similarly, Leo summarized how he began his foray in to metal theft,

I was doing it legally and then a friend of mine told me about, you know, abandoned buildings, you know, copper and stuff like that and it sure was worth a lot of money! I didn't believe him but I did it the first time and made a substantial amount of money, and I was like, what the, and it kind of went from there. The first time I think it was like three grand! Three thousand dollars!

Comparably, Matt, who is a licensed apprentice journeyman and installs air conditioners for a local company, had been a professional who scrapped in the course of business for years prior. He described his first experience with air conditioner thefts,

Matt: I can remember the first time I did it. I was scared to death, but I needed the money, I needed the money bad. And, my partner at the time, [an] older gentleman, he had, I mean it was nothing, and he had done it for years. He said, ‘the same way we put them down is the same way we take them out! Man you go back there, we are going to pop the line set, you are going to cut the box, there's two wires and if there is a disconnect box you gonna pull the disconnect, cut the hot, yank it out, cut the line, if it ain't bolted down, we out of there’.

Interviewer: So he helped teach you.

Matt: He helped me get the courage; cause I was like (demonstrates a facial expression of concern while shaking his head).

The second most common drift into theft involves an individual who begins to cross the boundary from legal into illegal while scrapping a little at a time. David explained how

easy it is to cross the line from legal scrapping into theft, commenting, “It’s the temptation of ease; it’s how it presents itself. People set themselves up to have it done because for some reason they don’t guard themselves”. Other metal thieves also discussed the temptation to steal items while scrapping, such as Zach who said, “I see someone with a nice metal lawn set, nobody is around and I can run out there and grab that and it's gone! You know, the temptation is there”. Similarly, James, who was a professional scrapper, explained his entry into theft this way,

Yeah, I stole scrap before. I know where they was sitting out some rims one day, they was going in the dumpster anyway, they didn’t want people to get in there, there was a no trespassing [sign]. But at nighttime, you can come through, well, what the hell you know?

Likewise, John, who was a professional who scrapped while working on a farm, became frustrated with the limited availability of metal, and the significant work involved in procuring it, and drifted into crime when he and his partner observed an easy target: tobacco frames made of steel, on an adjacent farm,

Basically, because we enjoyed the money we was getting from the scrap from stuff out of the woods and everything [from] the family’s farm and...we ran out of scrap. And, we just looked at it (the tobacco frames), oh, that would be easy to get, that would be good money! Eighty-seven dollars (the amount each stolen tobacco frame was sold for) is hard to come by when you’re getting little nit wit stuff out of the woods. You have to work 4 or 5 hours to get a trailer load...and you only have \$60 or \$70 dollars’ worth. So, we just liked the spare money and we didn’t really think it through...we just kind of pulled in there and just took them.

Nearly all of the metal thieves in the present study were scrapping prior to stealing metal and most described situations where they drifted into criminality. On occasion, this happened gradually, over time as temptations and frustration with current metal supply or personal financial struggles grew. At some point, the struggles mounted until the once legal scrapper succumbed to the ease and temptation by drifting into metal theft. At other times, the drift occurred more quickly and usually involved a friend, family member or acquaintance who took the individual with them while stealing metal. Individuals who accompanied another person to steal metal often expressed doubt and concern at the idea of theft, but drifted into metal theft activities themselves when they experienced the ease and profits of theft. These findings tend to support the theory posited by Whiteacre (2014) that metal thieves are often scrappers who drift into criminality.

Criminal Enjoyment. Nearly one quarter of all metal thieves spoke of metal theft in positive terms, describing how they enjoyed stealing or were addicted to it. When the interviewer asked how stealing metal made metal thieves feel, Dustin replied, “I liked it” and Leo said, “Technically [it’s] an adrenaline rush, you know? I got addicted to it because it was exciting and it was a rush, but scary at the same time”. Similarly, Chris discussed his enjoyment of metal theft as he proudly led the interviewer through the interior of the abandoned building where he lives as a vagrant and strips the building’s metal contents, saying,

There is a whole upstairs! (Chris, excitedly, takes the interviewers up the stairs and gazes, longingly, at the attic area, some 15 feet above the floor). There is wire right there. I just got to figure out how to get to it, *sotto voce*. That’s the fun part! If I could get to it, I would have it. It’s just climbing up there to get it.

Other metal thieves commented that stealing metal is addictive and shared stories of how they receive a rush from the theft. Jessica described what it felt like when she committed burglary of a residence in order to steal metal, saying,

Well you would get a rush...especially if the wiring hadn't already been took out.

You know, especially, because the older the house the more copper you are going to find in it. Like...there are a lot of trailers, old trailers and a lot of the water lines are still copper. So, you can get under there and take out all the water lines. It would be a rush to see what you can find!

Dustin, who scrapped partially to support his drug habit and has been arrested for metal theft several times, compared his rush and addiction to the excitement and risks that metal theft provided,

Dustin: I was addicted to it, and it did serve a purpose as well, best of both worlds!

Interviewer: Would getting a big find give you a rush?

Dustin: Yes, every time I did it I got a rush, the bigger the score the bigger the rush!

Interviewer: Did you enjoy it?

Dustin: Yes.

Interviewer: Leaving your drug addiction aside, could you have stopped scrapping if you wanted to?

Dustin: I don't think I could of left it alone. I'm an adrenaline junkie and I love the rush no matter how I get it. I do extreme things all the time.

Interviewer: Did you always need the money or did you scrap sometimes cause you enjoyed it?

Dustin: No, I didn't always need the money I did it out of habit and [for] the rush sometimes.

Jessica, too explained that she doubted she could stop scrapping, even if she had enough money, exclaiming,

Jessica: Well, yeah! Cause it's addictive! (Her eyes widening with excitement)

Interviewer: What is addictive about it?

Jessica: Just to see what you can find and how much you can get out of it.

Interviewer: Regardless of if, you're high or not, it's just fun to do?

Jessica: Yeah!

While Jessica and Dustin stole metal, partially, due to a drug addiction, other metal thieves explained how metal theft was addictive. For example, Michael and Eric, who were partners, described their experiences in metal theft this way,

Interviewer: What was it like the first time?

Michael: From that day forth, my goal was to scrap anything we could find. I thought I was on top of the world from scrapping.

Interviewer: Did it give you a rush, were you addicted to it, and was it scary to do it?

Michael: It was scary taking it in for sure. It would have been a rush and a bigger deal if we [were] stealing it like a robber or something, but the way it worked at [the energy company, it] was just a common occurrence. We didn't try to hide it or anything.

Interviewer: Could you have stopped if you had wanted to?

Michael: At the time I couldn't stop. It was just too easy. A few times when I was on vacation or away from work, I remember guys texting me and telling me how much money I was missing out on, and I would freak and couldn't wait to get back to get more.

In the same way, Eric also described the excitement, pleasure and addiction he experienced from theft, indicating it was so strong that he could not stop even when they believed they were under investigation. When the interviewer asked Eric, “could you have stopped if you wanted to”, Eric replied as if he had never even considered the question,

I don't know if I could have stopped, quite honestly, I can't say for sure that I could've stopped. (long pause) I mean I could not say that, I mean the only reason we stopped was because the heat was on, we slowed down. Even when the heat was on, we still tried to get a little here and there, so I guess that's certain (with a disappointed tone), no we weren't going to stop.

Leo also discussed how, “It was gratifying...we did this in two days and I just got like \$2,400 bucks...for two days of work, that's great! Yeah you get excited. You definitely are kind of happy about it”.

Despite a number of metal thieves citing their enjoyment and gratification from stealing and describing how it provided a high that they sought, others discussed how they did not enjoy stealing or expressed conflicting emotions about their activities. For example, when Matt was asked if he enjoyed stealing air conditioners and burglarizing homes and businesses for metal he said, “Sometimes, sometimes it was fun. Most of the time, no, it was just to get that money to party, to get that drug”. Others, like John, described the adrenaline rush they received, but explained in regretful tones,

Interviewer: [You mentioned an] adrenaline rush. Did you kind of like that; was it fun to do it?

John: Not necessarily, I think it was just ignorance, you know, like when you do something, you didn't think [it through], and then you say you should have thought about it? You do something and it was kind of a spur of the moment type of

deal...we seen how easy the money was and just kind of (let out a long sigh) and figured we was the only one that knew about it.

Interviewer: You were just kind of doing it for money, not the excitement?

John: Yeah, I love money!

Other thieves were more ambivalent in their responses, as when David was asked if he enjoyed stealing, "I didn't really, no, I didn't enjoy it. I didn't dislike it, but no I didn't enjoy it, no", or James who said, "Actually, no, I don't enjoy it, but I know a dollar has got to be made today or bills won't get paid when they need to be paid". In the same way, even Leo expressed regret for his thefts saying, "It's not something that I wanted to do. It was something that needed to be done to survive, to pay the bills. How did I feel about doing it, not too good, but better when I had the money."

Finally, Chris expressed exasperation and disappointment at his current state of living and the crimes he has committed to stay alive and feed his drug habit. After completing the tour of the abandoned building he was stripping and living in, the interviewer asked him,

Interviewer: And so your plan when this one dries up is to move on to another one?

Chris: (He replies in a disillusioned, but very nonchalant tone) Yeah, probably.

(After a long pause, a deep drag on a cigarette and glancing at the bucket he uses as a restroom) That or get my shit straight. You know what I am saying? That way I am not living like this (slowly rotating around the room with both arms out and then letting them drop to his side in an expression of disillusionment). I am sick of it! It's hard (he says in a very serious voice).

Interviewer: So if you woke up tomorrow and had a whole bunch of money, would you still do scrapping?

Chris: No! (Responding nearly before the interviewer finished the question). No, sure wouldn't!

A small number of thieves expressed outright distain for their actions. However, the majority of metal thieves fell somewhere in the middle, often vacillating back and forth between enjoyment and displeasure. They often expressed enjoyment at the challenge, excitement from the high of a big find or the pleasure of being paid, yet they also expressed dissatisfaction with what they were doing. However, some metal thieves enjoyed the excitement and rush that metal theft provided and did not appear to think often or care about the consequences of their actions. To some degree, the rewards, both monetarily and emotionally, may be enough to encourage metal thieves to continue despite the risks of capture, and feelings of guilt, such as with Eric and Michael. When the addictive enjoyment is combined with the neutralization discussed above, it may be very difficult to dissuade metal thieves.

Metal Theft Profits. While to varying degrees, metal thieves enjoy stealing, nearly all identified money as the reason they stole. In fact, a few even described how they had actually come to view metal as money. “I see money, I see money in that dumpster still, and here’s some,” James said excitedly as he reached in and pulled out a badly damaged toy doll stroller with a metal frame. While, money may be a common denominator for metal theft it is important to understand how the money is being used. The three most common uses: paying for bills or other living expenses, fun money and, lastly, for drugs.

General Expenses & Bills. The most common response from metal thieves as to what they did with the profits from their thefts was to spend the money to eat, pay bills or some other type of regular expenditure seen as necessary to survive. Several, like David, cited a lack of work and thus the necessity to steal, because they had no income to buy necessities,

Guys [are] doing this to feed their families and maybe they've been out of work forever... You know, but I still got to, it doesn't buy toilet paper or toothpaste and stuff like that, you know, when you ain't got no money.

In the same way, Chris, also mentioned being laid off, and explained how he had to steal to survive and buy food saying “Yep, I got laid off a week ago... It's [stealing metal] not something that I do all the time, but here lately it's been rough”.

For others stealing metal appeared to them as the only option to survive. James explained, “I have to... this is the only way I have to make money. I do it because I know I've got bills to pay”. Similarly, while in line at a recycling center, the interviewer met Robert. Robert related the reason he began stealing metal when he was 17 years old,

Robert: Everyone in the house (both sets of grandparents, mother and father) either died or committed suicide in two years' time and I was stuck in the house at age 17 by myself, no parents no nothing, nothing. I was trying to live; it was rough man (he says with wide eyes, shaking his head back and forth). I was a kid after they, you know, passed away. I did anything I could to come up with money then, you know?

Interviewer: So your family all passed away and you're out scrapping to survive?

Robert: Pretty much!

Robert continued his story through to the present day. He is now in his mid-twenties, a successful mechanic, making \$22 an hour and continues to recycle,

Interviewer: So, why are you recycling today?

Robert: I don't get paid until Monday, so if I get the shit I might as well go get an extra couple of dollars, but I don't do this for a living... when I get a little something, something, I'll bring it down here just to make a little extra few dollars. I don't do this shit every day or live to do it.

Interestingly, Robert had metal items to recycle from his work as a mechanic, yet earlier in the conversation when asked about stealing metal from work he emphatically explained, “My company, they’ll fire you for that shit”. When the interviewer inquired as to where he got the metal he had, he began to justify how what he had taken was not theft. It seemed that despite overcoming his difficult childhood he continued to steal to meet his immediate needs.

Similar to Robert, a few metal thieves explained that they stole in order to supplement their regular income and in order to pay bills. Like Michael who said, “I did use a lot of it just for bills and such”. In at least two cases, metal thieves adjusted how much they stole and their frequency of theft based on the bills that were due. For example, Dustin discussed how he and his metal theft partner would actually, “Set a goal every day, each day it was different depending on if we had bills to pay”. Moreover, while isolated, Leo explained that he stole metal and used the profits to help his family and friends pay their bills and meet needs. Even indicating that he would steal more when his family and friends were in need of money, saying,

I paid bills with it, I helped my family, and friends out, you know. Oh, my [sibling] needs a \$1,000 for this, \$500 hundred for this, you know, for [their] kids and stuff, you know, I would give it to [my sibling] and just do another job to replace that money.

Obtaining money to pay bills and general living expenses for themselves, and on occasion, others, was the most commonly mentioned use of the profits from theft. The specific reasons varied from unemployment, large bills coming due, and having no food, to a family member in need. Regardless of when or how a perceived financial need presented itself, thieves often stole to meet the need.

Drugs, Alcohol & Tobacco. As described previously, drug usage was only mentioned as a personal factor related to metal theft in about 30% of the cases in the present study. Several thieves openly admitted to using drugs, however, only a few identified addictions as the salient factor in their thefts. For example, Matt described why he steals metal saying, “Mainly to buy drugs. It was just to get that money to party, to get that drug.”

In the same way, Chris said, “I am doing it so I can go and get me some spice (synthetic marijuana) ...Just to support my little cigarettes and stuff, just enough to get me a little bag of spice, to make it through the day”. Further, Dustin described how his drug usage led him to drift from legal scrapping to theft, describing,

Dustin: I started scrapping [legally] in 2006, then as I started using drugs [and] I started taking things. I used cocaine in 2006 to current, I got...started on painkillers and that went on to heroin.

Interviewer: Were the drugs driving you to commit crimes to get more?

Dustin: Yes, I was committing crimes to use.

Interviewer: How often did you scrap?

Dustin: I scrapped every day because I needed money every day for drugs and you can never have enough, because there were some days that you would only make \$20-\$30, and most of the time I split that in half with my partner.

While Matt, Chris and Dustin discussed how they were driven to metal theft as a means to satisfy a drug addiction, the remaining metal thieves who discussed drugs did not identify addiction as the major motivator for theft. In other words, very few metal thieves stole principally to feed a drug habit. Instead, drugs were more often used in a recreational manner for many metal thieves who also used drugs.

Many other thieves mentioned using the proceeds from metal theft to purchase alcohol or tobacco. For instance, Daniel, who explained he suffered from bipolar disorder, stated,

Daniel: I got my money for the day, get me a pack of cigarettes and something else...and you know (he trailed off and danced a little).

Interviewer: And what?

Daniel: I only scrapped metal cause it paid for my cigarettes and a little bit of bulldog (alcohol) and I don't do dope. I ain't been doing dope out there, but I've been on them cigarettes and stuff.

Michael explained, “In the beginning I remember just being happy with making extra beer money”.

Drug usage does play a factor in metal theft. However, it does not appear, with in the present study, to be a significant factor. Nearly two thirds of the metal thieves interviewed said drugs were not a factor whatsoever in their thefts. Of the remaining third who discussed drug usage, only a small portion discussed drugs motivating them to steal metal. Rather, when drugs or alcohol and tobacco products were mentioned they were usually discussed in a casual manner, similar to the way many discuss looking forward to having a drink on Friday after a long week of work.

Play Money. Perhaps the rarest use for the money earned from metal theft was what some described as “play money” or money that could use for anything, typically something the thief considered a fun luxury, and was not designated to a certain expense. Jessica said she used her profit for “both” living money and playing around money. Leo described his excess funds after paying expenses and helping family as, “being able to live

comfortably for a month”. Whereas, Eric, who was employed full time while he stole described his motivation this way,

Interviewer: Did you do this because you had to have the money or was this just kind of extra play money?

Eric: Extra play money.

Interviewer: So this was just extra money for extra things?

Eric: Yeah it was extra money and really I spent it on my kids, my [children] that’s what I did I gave them things that they might not be able to get, that I wouldn’t be able to justify buying. You know, I do okay, and I live decent, and my kids get plenty, but you know, you would buy the stupid things that you would never buy on your own income.

Eric’s partner, Michael made similar statements,

Can you imagine getting paid 75k a year and then getting handed an extra \$200-500 bucks a week in cash? I didn’t have a worry in the world. I didn’t flaunt my money by any means but every Disney video that came out and every new toy my [children] wanted, I bought it.

John was less specific, but conveyed that the money he earned was, “Just having spare money basically because we enjoyed the money... [for] play money whatever I needed it for”.

Profit Conclusion. Three metal thieves explained that their addiction to drugs was the motivating factor behind metal theft. However, most metal thieves usually listed multiple uses for their profits from metal theft. While some areas were emphasized more, such as living expenses, bills, alcohol, cigarettes or providing play money, these uses were often not exclusive categories. In fact, most metal thieves mentioned several ways they used the profits

from their crimes, making comments similar to David, describing how he uses his metal theft profits, “Gas, cigarettes, you know my own personal needs...just stuff like that. Alcohol.”

The Price-Theft Hypothesis as a Motivator. Currently, the majority of research on the topic of metal theft has been composed of evaluations of the connection between the price of metal (on a commodity market) and rates of theft. A plethora of government agencies, nongovernment organizations and researchers has examined the connection (especially between copper and theft rates). The price-theft hypothesis has been statistically validated by several empirical studies and across local, national, and international areas (see Posick et al., 2012; Sidebottom et al., 2011, 2014). This correlation remains strong despite significant monthly fluctuations in the value of metal. However, the question remains, what are metal thieves’ perceptions of the effect that the selling price for metal has on their activities? This section will serve to provide insight into the thoughts and actions of thieves in relation to that price.

The metal thieves interviewed for the present study were fairly split on how the price of metal affects their behavior. About one-third of those who discussed the price of metals indicated that they do not pay attention or care if the price of metal is high or low. Rather they simply stole when they had a need, and their frequency or volume of theft was not dependent on the price they could receive. Some thieves, like Leo, who sold masses of stolen copper valued between \$2,000 and \$6,000 on a regular basis said, very casually, “It didn't really affect when I went [to steal]...you know, it fluctuates, it goes down 10 to 20 cents, it will go up 10 to 20 cents, so it's really not a big, big difference”.

While Leo is able to calmly discuss the fluctuating price of metal, and not be concerned with the price disparity of a few cents a pound, other thieves disagreed. Another

third of the thieves unequivocally discussed how prices affected their motivation for theft. For example, David said, “Absolutely, you care, because it’s hard work, there’s nothing easy about, if you know what I mean!” David’s comments are in line with the way some other thieves considered metal theft, as work. Many of the thieves who advised that price influenced them talked of stealing in a similar way as many in larger society discuss having reputable jobs. Therefore, it makes sense that these thieves would be affected by the price of metals, particularly as they may subconsciously consider metal theft a job.

A few other thieves discussed how the price motivated them to steal in greater volume and with frequency compared to what they normally stole. Zach, for example, discussed his friends who are also metal thieves saying, “There’s a base, but [we] kick in to overdrive. [We] take a lot more risk for it”. Zach’s comments were echoed by several scrappers (non-thieves) who discussed how higher prices motivated them to look for metal. Based on these conversations, it appears that metal thieves may put forth a fairly consistent effort to locate and collect metal. However, when the price of metal increases, thieves’ motivations increase, so their income may also increase. Some thieves also suggested that their discretion was lowered and they were more willing to take risks when the prices were higher.

The remainder of metal thieves gave conflicting messages about how the price motivated them to steal. In other words, they were often aware of the changes in price and discussed how it would affect their behavior. However, a few moments later, they often contradicted their statements. Consider a conversation with Dustin on how the price influenced how much he stole, “Yes, we would keep track of prices...but we never held on to anything more than two days. We did the same everyday...go hard or go home!” While Dustin claimed to keep track of the prices, his admitted behavior in this short vignette does

not demonstrate that he actually acted on this knowledge. This was common with many metal thieves. Many discussed the price of metal, but few expressed identifiable changes in behavior that coincided with this influence.

It is difficult to say with certainty how the price affects the motivations of metal thieves. Clearly, some in the present study identified the price as influencing them; others said it did not and still others made affirmative comments, but did not appear to follow through, based on what they communicated. Over all, these findings are inconclusive. Clearly, there is an effect on a portion of the metal thieves, but the magnitude of the effect is unknown. Moreover, the affect may not be as clear with seasoned metal thieves, which a majority of the thieves in the present study is. Specifically, it is unclear from the present study how the increased price might attract new thieves, and thus account for a portion of the increases seen in other studies.

Metal Thieves Conclusion

This chapter began by defining metal theft, which can be a surprisingly difficult task. Next, it examined the characteristics of metal thieves who were interviewed for the present study. After a deeper understanding of who is involved in metal theft, the motivations of thieves were explored. The drift from legal scrapping into criminality was identified and discussed. Next, an exploration of how the profits from metal theft are used revealed expenses and bills, play money and drugs are the most common uses of the profits. Finally, an examination of how the price of metal motivates thieves proved inconclusive.

This chapter has provided a unique and detailed prospective of metal thieves. It has not only described the broad range of demographics and characteristics of the thieves interviewed for the present study, but portrayed their motivations and thoughts about their illegal activities. The present study was unable to corroborate the price-theft hypothesis.

However, it failed to substantiate the commonly believed connection between drug usage and metal theft, finding only around 30% of metal thieves involved in drug usage. This chapter has provided the depth and understanding necessary to continue examining metal thieves, how they learn, and techniques of locating, stealing and selling metal.

VI - TECHNIQUES & METHODS OF METAL THIEVES

This chapter will allow for a better understanding of the factors thieves consider when identifying, locating, acquiring and selling stolen metal. Specifically, the methods and techniques related to each stage of metal theft; locating metal, taking the metal and exchanging the metal will be identified and discussed. This includes a general discussion of places, including how places influence theft, as well as some of the techniques thieves use to avoid detection. After a discussion of places, the chapter will focus on criminal partnerships including how partnerships form and function. Finally, this chapter will provide a detailed analysis of how metal thieves learn these methods and techniques.

Methods & Techniques of Metal Theft

Three unique stages are involved in metal theft. They are identifying a place with metal, gaining access and actually taking the metal and finally, selling the metal to another so profit can be enjoyed. While these three stages are not entirely unique from other types of theft the activities which occur within each stage are important to study. For example, the third stage, selling stolen metal to legally operating recycling centers, is a substantially different disposition from most other forms of theft. Therefore, breaking metal theft down into these three stages allows for a more detailed understanding of the techniques and methods as well as the opportunities to prevent theft at each stage.

The Place. The built environment significantly factors into the place of metal theft. This is because metal theft is typically a crime of place. Items stolen tend to be structures or part of a structure of some type, and frequently only have extrinsic value to the thief. Places, that attract metal thieves, tend to have three common characteristics. They have a tendency to have reduced guardianship (e.g., abandoned buildings), have a high quantity of metal (e.g., electrical substation) and a high quality of metals (e.g., copper). When these three factors coalesce, metal thieves are frequently enticed to these places. The process by which metal thieves identify these places is examined here. Two primary activities occur at this stage. The first is identifying targets and the second is casing and planning the theft.

Identifying Targets. The most common kinds of place targeted by thieves in the present study were abandoned structures. These included abandoned residential homes, as well as abandoned business and industrial sites. These places often contained a significant amount of quality metals and had very low guardianship. Both urban and rural metal thieves often knew which businesses and homes were abandoned because they were familiar with the neighborhood. For example, Matt described how he and his partners would identify abandoned homes saying, “You just knew they were abandoned; no movement for weeks or months. Everybody in the [neighborhood] knew what was abandoned.” Similarly, Jessica who stole in a rural environment explained how her group of metal thieves operated, “We knew when a house was coming empty. Cause like I say, we were such a small town, everyone knew everyone and we knew someone who had lived there and just moved.” This demonstrates that many metal thieves operated within an area with which they were familiar and comfortable. Moreover, their knowledge of the area provided the information they needed to identify abandoned homes, sometimes, as in Jessica’s case, immediately after someone moved out and before a new tenant moved in.

While some metal thieves have an intimate knowledge of the area they stole from, others did not. If a metal thief did not have a well-developed knowledge of the area and of which buildings and houses were abandoned the information would have to come from somewhere else. Chris, for example, was not originally from the area in which he was stealing, and therefore worked with an individual, who purportedly owned abandoned buildings and allowed him to strip them, explaining, "I got a guy, here in [the city]. He's got 12 vacant homes and they are getting ready to tear them down. They are all vacant, abandoned...so he just lets me go through and [strip them]". However, the researcher was invited by Chris to visit the building he is currently stripping and his story is dubious. The building was a commercial structure, not residential as described and appeared to have recently been under construction with new rooms partitioned and new electrical and plumbing recently installed.

Leo's technique for locating abandoned properties was unique to the present study. However, given that he disclosed profiting nearly \$250,000 by stripping 10 abandoned buildings within three years it is important to include. Leo explained how he would,

Go on google and put in abandoned buildings and [the state] and a bunch of places would pop up. Then you can go on YouTube and watch videos because people will go inside the buildings and make videos, and you can go and watch the video to see if you can see any copper in the building before we go.

This was not, however, how Leo began locating abandoned buildings. Originally, Leo had knowledge of a few abandoned buildings nearby his home and work. However, when those had been depleted of copper he began to search out places online and would travel up to 50 miles away to steal metal.

The second most common kind of place identified were those that had specific locational characteristics and contained air conditioners. Air conditioners located in areas with reduced visibility from the public, were in multiples and were larger units were more likely to be targeted by metal thieves. Air conditioners are frequently sought after by most metal thieves. However, two thieves in the present study specifically targeted them. Matt, who worked as an HVAC technician described how he would target the areas he was working in to steal, saying, “We would do (install) a unit, [then] scope out the neighborhood and snatch theirs. We would snatch three or four in a day, easy”. On occasion Matt even returned to where he knew he had installed large units, which were worth more money, and steal those. “We actually put those three up, and about two weeks later, we were back there snatching them”. Similarly, Dustin often targeted places with multiple air conditioner units, like apartment complexes where he had worked in the past and described how the place, “had to be concealed somehow by trees or behind a building”. However, he would never steal from somewhere where he was actively employed, saying “don’t scrap where you eat”. Moreover, if the apartments were not available, Dustin would also target shopping centers, which had multiple air conditioner units in an infrequently traveled place, lined up behind the stores.

Businesses that had significant amounts of metal on hand were also frequent targets. The thefts nearly always occurred after businesses were closed, the employees were gone and once it was dark. The most common businesses stolen from were auto related, such as, vehicle junk yards and auto body shops that had valuable metals stored outside. These places were chosen due to the valuable materials such as aluminum wheels, catalytic converters and batteries. However, other businesses were also targeted. For example, Zach relayed a story of being arrested while his partner, “threw street signs over the fence into his truck” from a

company which manufactured them. While some businesses were commonly targeted, it seems any businesses that had large amounts of metal on hand were particularly likely targets.

Finally, farms and other rural areas, such as forests were common places to target. These places tended to have large quantities of metal available, in the form of equipment, vehicles, or other metal structures with little to no guardianship. Additionally, the thief rarely wandered around looking for metal at these places. It was common for the thief to have had a previous legitimate reason to be on the property and have identified something to come back for. For instance, David described the logging equipment he was aware of replying,

...logging operations, they left the old equipment sitting there, there's a lot of old equipment sitting out, it's been sitting there forever. I am talking like huge, bulldozers or something. Bulldozers or booms, you know, the big logging trucks for dragging logs up the canyons, you know. I could probably take you to a 10 mile radius right now, I could probably take you to (three or four hundred) tons of nothing but leftover logging equipment just sitting there looking at you.

While many of the metal thieves indicated that finding places from which to steal metal was easy, a few discussed how difficult it was to find places with as much metal as when they began stealing years prior. This also coincided with comments by many scrappers. Several metal thieves discussed how competition is getting fierce and places are becoming scarce. Leo explained it this way,

Leo: It's pretty simple to do but like I said towards the end it was getting a little harder to do, not going into the place and scouting, but actually finding a place.

That's actually, I would have to say, that's the hardest part is actually finding a place.

Interviewer: Okay, and why do you think it's getting more difficult?

Leo: Because there's so many people doing it, so you'll find a place and just everything will be gone. Once a place goes abandoned and people hear about it, it's like a free for all, you know.

Regardless of how easy or difficult it is to identify and locate a likely location, that is only half the task of locating metal.

Casing & Planning. After a place was identified, nearly all the metal thieves took steps to case the location and plan a method to accomplish the theft. Sometimes casing was as simple as checking to ensure the residents were sleeping prior to stealing an air conditioner or looking for dogs and cameras. Other times, casing the place was extensive and included planning methods to affect the theft.

Typically, when entering a structure to steal metal, increased surveillance and planning occurred. Planning a burglary to acquire metal often involved entering the building prior to stealing to ensure there was metal present. As Chris explained he would, "Just go in and find out...if there is wire [and] shit in there". Chris was not alone in the tactic, as several thieves discussed similar activities. While talking with Jessica, the interviewer pointed out an abandoned building in the distance and asked how she would approach it. She disclosed,

So what we would do is keep an eye on it for two or three days, to make sure no one went in and out. Scoped out to make sure there were no security cameras. And then, say like the neighborhoods, we would watch the neighbors to see how late they stayed up, how much company they had, shit like that. So that way you could get a time frame to go in there to strip it out. It's a process.

The only common exception to casing and planning a burglary seemed to be when a thief already had a working knowledge of the building. For instance, a home where the thief had

been before, such as a friend's house; in those situations, they were more likely to enter without casing the building.

Metal thefts that occurred outdoors, such as stealing logging equipment, taking air conditioners or removing catalytic converters from vehicles involved much less planning. The majority of these situations involved only a cursory glance to ensure no one was watching and often occurred at night. The reduced planning occurred for several reasons. One of which involves the speed with which many of these types of crimes can occur. For example, it takes only a few moments to remove an air conditioner. Another reason reduced casing and planning occurs is due to the less serious nature of the possible charges. Metal theft involving abandoned buildings could result in charges of burglary, a felony, with likely jail time, compared to trespassing and theft. Metal thieves understood the gravity of burglary charges and tended to take entering abandoned buildings more seriously. As a result, burglaries tended to be well planned, and the places cased, prior to committing the theft, whereas theft occurring outside of buildings tended to be less planned.

The Theft. Once a place, which contains a likely supply of metal, is identified, and, if necessary, casing and planning have been completed the second stage is to steal the metal. The methods and techniques used to accomplish the theft are largely dependent on the place, type, amount of metal and, often, the skill of the thief. These factors not only play a role in the techniques (e.g., tools, tactics, transportation) that a metal thief employs, but also the methods (e.g., time of theft, frequency, repeated thefts). This section will examine these issues, identifying the issues related to theft techniques and methods.

Frequency & Time of Day. The frequency of theft varies, primarily, based on the financial need of the thief. Some thieves, like Chris, stole small amounts of metal each day so they could live. However, the majority steal once or twice a week. Moreover, a few thieves

like Leo, steal less frequently; once a month or so. In nearly all circumstances, thieves described stealing to meet a financial need they had. Leo even described the large, abandoned buildings he stole from as banks, saying, “Once you’re starting to run low on money you know just go back to that building and get another \$4,000 or \$5,000”. Further, Dustin explained, “At the end I was scrapping every day, both legal and illegal”.

Metal thieves were evenly split on when they stole metal, night verses day. To a large degree, the time of day when thieves stole was dependent on the place. For example, if thieves were targeting a business with an outdoor supply of metal they would always go at night, after the business had closed. Conversely, most thieves who stole from rural areas, such as farms or forests, often went during the day. This was not only so they could see what they were doing, but also because it was less suspicious. John, for example discussed stealing items from a farm during the day, saying, “we did it during the day [and] if anybody just asked us any questions we just told them that it was our tobacco frames or this and that or told them we was getting it for someone else or whatever”.

Air conditioner thefts present an interesting time of day paradox. For example, Matt would often steal air conditioners right after work (during the day), while he was still in his company uniform and truck, thus reducing the questions some might ask if he was questioned at night. Conversely, Dustin who lacked as strong of a cover for his activities said about scrapping, “all day if legal, all night if illegal,” and specifically when he stole air conditioners, saying, “No [we] did it at night if it (a residence) was occupied, when they were asleep”. Working at night provided Dustin with the cover of darkness and reduced traffic so he could steal air conditioners from occupied homes and apartments. In all, those who stole air conditioners were split on when they stole; some during the day and others at night.

Most burglary related metal thefts also occurred during the day. This was primarily so thieves could see, and so that it would not be as obvious to anyone who might pass by the structure that there were people inside. Leo described his logic well, which encompasses much of what others described about burglary during the day, saying, “Because you can see [in the day] and at night if you’re in there, and you have to use a flashlight, and if people see the light inside the building, people can call the cops.”

Repeat Victimization. A study of metal theft in the UK found that the incidences of repeated victimization involving metal theft was more frequent and longer lasting than for most other types of crimes (Ashby et al., 2014). The present study’s findings support the claim that thieves often return to steal more metal and may do so for long periods. Nearly all the metal thieves interviewed described incidents where they would return to gather more metal. Of those interviewed for the present study, repeat thefts from the same place typically occurred for one of two reasons. First, the metal may be available on a repeated basis. This can occur because the metal item was replaced, such as a replacement air conditioner and thus with a successful place for theft the metal thief may return looking for the replaced metal.

Secondly, there may be so much metal the thieves cannot steal it all at once. This was often the case when thieves burglarized a building. Even a smaller home would often require several thieves’ hours if not several days to remove all the copper pipes and wires. Therefore, some thieves would take what they could in one night and wait to come back at another time. Each time they returned they would take more until the supply was depleted. Moreover, in situations where there is this much material the work is difficult. Leo explained, “It takes a lot of work and a lot of energy, at the end of the day I’m so tired it’s not even funny. My body hurts tremendously.” Due to the hard work that is involved in stripping a

large structure and the income that is produced (e.g., several thousand dollars), Leo, usually only stole metal once a month and would then return to the same place.

While most thieves did not make thousands of dollars from a single instance of theft, they often made several hundred. The amount of profit also factors into how often thieves return to the same place. Many thieves, as already mentioned, are motivated to commit theft when they needed funds. Therefore, when they have enough money they are less likely to be out stealing. However, when a need arises thieves often returned to areas that had the preferred criteria for metal theft, a secluded area with limited guardianship, high quality and quantities of metal. In other words, some places were repeatedly frequented by metal thieves due to their physical characteristics.

Lastly, some thieves who had collaborated might split up, and return individually to steal metal. John's partner, for example, returned several times without him to steal additional metal tobacco frames. It is likely that when a large amount of metal is found some of the group may return individually, before the others. This serves to increase the frequency with which metal is stolen from a particular place.

Tactics, Tools & Transportation. When metal thieves are actively employed in an industry that often deals with metal, it often provides operational cover for their theft activities and serves as an excuse to be in possession of large amounts of metal. Dustin also used his employment to conceal his nefarious activities. For example, Dustin explained that if someone approached he and his partner while they were scoping out an area or actively taking an air conditioner they, "Acted like we were maintenance people", which indeed they were.

However, beyond using work as a cover or to locate metal, much of the technical knowledge necessary to quickly complete metal theft was also gained while at work. For

example, Jessica said, “I worked at scrap yard,” when asked how she learned to identify which metals were more valuable. Moreover, Matt’s training as an HVAC technician and licensed journeyman gave him the knowledge to steal an air conditioner within about four minutes. Matt also used the tools from work to complete the theft, too, saying, “Freon gauges and valves...I had it all the whole nine”.

Not everyone had advanced tools like gauges and valves from work. Most metal thieves had a basic assortment of tools to complete the theft, similar to what Leo described, “Bolt cutters for one, bolt cutters can cut small copper pipe and wire and it will cut through cable. Hack saws, screwdrivers: flat head and Philips, little pipe cutters, them little pipe cutters, lots and lots of duct tape.” While stealing metal it was common for a metal thief to wear gloves, as Dustin described, “[to reduce] finger prints and also...so [I] didn’t get cut as easy”.

Once the metal was stolen, it had to be removed from the place and taken to a recycling center. This was nearly always done by vehicle. There was no consistency in vehicles and everything from shopping carts to cars, vans and work trucks were discussed. The type of vehicle usually depended on what was available and what was large enough to contain the metal. For example, pulling large tobacco frames required a truck while an air conditioner could be put in the back of a medium sized SUV. Interestingly, loading the vehicle and driving to the recycling center were often spoken of as the tensest times. Eric explained how he would transport over a ton of metal in a Ford Escort saying,

I was always a little concerned. I would always make sure about the weight that was in the car, you could easily tell something was in there. Well I always made sure that my tires weren’t swayed real low, you know, I wasn’t going to start driving and not

try to be the most prepared I could be to make sure that this car was going to be fine.

Eric's primary concern was that he would break down or get a flat tire, and law enforcement would arrive. His fears were founded, as Leo and his partner were captured with two tons of copper on the way to a recycling center after their pick-up truck had a flat tire.

The Exchange. The third and last stage necessary for metal theft is exchanging metal for profit. This usually occurs at a recycling center and is one of the unique aspects of metal theft. There are almost no circumstances when thieves kept stolen metal. Moreover, recycling centers purchase metal from the public and therefore, may purchase legally obtained metals as well as stolen metals. Unfortunately, most metals do not have unique identifying marks (e.g., serial numbers) and have often been altered, which makes it difficult to identify. Therefore, identifying which metals are stolen can be difficult. Especially, when metals are sold in a large lot and have been highly processed (all the different types of metals separated). Regardless, recycling centers are the primary focus of the majority of laws and regulations and even many law enforcement investigations (Burnett et al., 2014). It is the belief by many that recycling centers knowingly accept stolen metal or are at the least, complicit in the theft of stolen material (Whiteacre, 2014). While the present study did not collect information to determine if recycling centers generate metal related thefts and burglary nearby (see Whiteacre et al., 2009), it does provide information helpful in establishing the role of the recycling centers concerning metal theft.

Criminal Exchange. Only one metal thief, Eric, in the present study, appeared to have an affirmative criminal relationship with a recycling center. Eric's partner was Michael, who was stealing industrial sized electrical cable (e.g., with a copper diameter of over one inch) from work. Eric would strip the protective rubber coating, melt the lead off the cable

and take 1,000 to 1,200 pounds of the copper cable to the same the recycling center each Friday. This went on for years before Eric and Michael were both arrested. Eric described his perceptions of what the recycling center knew, how it operated and even how it shielded him from law enforcement,

Eric: My perception is they knew darn good and well it was hot. Yeah they knew; they knew I was a good customer. They took care of me. I mean I was in line at the recycling center some days it would be backed up...and there would be some police in there or something like that just looking for catalytic converters or something. There would always be a guy from the recycling center...walk out...to let me know that there was police. They'd say, 'just sit tight, they're just looking for some stolen catalytic converters', but they would always let me know.

Interviewer: So that's something they wouldn't do to everybody else, just picking you out that they were concerned about?

Eric: Right, as far as I know, yeah I think I was one of the few that they did, and I was actually having cell phone contact to make sure everything was cool before I brought the stuff over and things like that.

Interviewer: Who did you have contact with?

Eric: A couple of different workers. One guy, he was a worker, but he might have been a little bit above some of the other guys, you know. I never really knew what you would call him (as in his work tittle)...but he would always pay me, too. There has been times too where the big wigs up in the office, they would come down. They were fine with it. They would shake my hand and thank me for my business.

Interviewer...did [the recycling company] know that it was coming from [the electrical company]? Does that make sense?

Eric: Yeah it makes sense what you're saying. Honestly, I'm not sure about that. I mean I don't know. I assume they had to assume it was coming from a big [job], I mean...these were big pieces of cable, very big pieces of wire. If they did know (where it was coming from), they never let on. They never led me to believe, I mean I went in there just to get in and get out. It was like unspoken; lets don't talk about it. As Eric stated, he believed the recycling center knew the metal he was bringing in was stolen, but did not seem to care. In fact, according to Michael, Eric's partner, the recycling center encouraged both of them by warning him of a police presence and even providing sports tickets and other items to entice him to return. Eventually, this recycling company was criminally charged when the theft group that Eric and Michael were a part of was discovered. However, ultimately the company avoided conviction.

Surreptitious Exchanges. While it seems clear that the recycling center used by Eric knew, or at least should have known, the metal it was purchasing was stolen, it is not always that easy to identify stolen metal or metal thieves. In fact, nearly all the thieves interviewed advised that they took steps to avoid detection at the yards. Many of the thieves mentioned traveling out of the county in which the theft occurred to sell their stolen goods because, as Jessica revealed, "It's harder to get caught up like that". Moreover, Leo explained that taking metal to a recycling center out of the county where it was stolen was, "a standing rule".

Another common tactic was, as Matt said, "You shop around!" indicating that he would distribute parts of stolen metal across many different yards. This was the second most frequently mentioned method. This occurred in two ways. First, a thief may separate his metals into different types and sell smaller amounts to different recycling centers. For example, after stripping a house a thief may sell a few pounds worth of copper pipes at

several different yards throughout the day. Alternatively, thieves may sell all of their stolen metal at once but then not return to that recycling center for several weeks or months. Both of these methods were chosen to reduce the suspicions of the recycling center. Leo described how he commonly sold several tons of stolen copper once or twice a month,

Leo: Various scrap yards...we would mix it up a little bit you know. We did take it to various scrap yards around the area.

Interviewer: Why did you mix it up; was there a particular reason?

Leo: Not really, honestly, just being cautious, you know. I mean we didn't want them to see our faces too much, you know, what I mean and then they start asking questions like, 'where are you guys getting all of this stuff?' I really don't think the scrap yards care because they're making crazy money on this stuff...It was just for our piece of mind.

Another method thieves used was to alter the identity or severely damage the item. This occurred when thieves damaged an item and therefore, presented the recycling center with a reasonable reason to scrap the whole object. For example, John explained how he and his partner would steal tobacco frames, take a sledgehammer, "And we would take them and mess them up like they weren't good anymore". This provided a logical explanation to the inquiring recycling center, as he would tell them, "We bought brand new tobacco frames and these was kinda old and bent and all that kinda stuff and we just want to scrap them because we [don't] have anything else to do with them". This technique was also one frequently mentioned by recycling center employees. Many of whom had humorous stories of ill-conceived attempts to show an item had been damaged and was therefore worthless. In those circumstances, all of the recycling center employees who shared such stories with the interviewer called law enforcement. Paradoxically, this is how John was arrested. His partner

began stealing tobacco frames without him and doing a poor job of damaging the frames. John explained, “He was starting to take ones that were brand new... that don’t have nothing wrong with it but maybe a sliced tire that he sliced right before he pulled in, they’re going to know something’s up”. This aroused the suspicion of the recycling center, which notified law enforcement and resulted in the arrest of both men.

An alternative technique for selling stolen metal at recycling centers was to include it in a large volume of legally obtained metal. This technique often also involved damaging or cutting up the stolen metal and then mingling it in with other metals. David did this often, describing comingling stolen and legal metal saying, “If you get stuff cut up and bunch [it together] it all looks like stuff cut up mix” adding, “and those cops aren’t going to go out there and look through that”. While a few thieves did utilize this technique, it only worked when they already possessed a large supply of legally obtained metal, which, most thieves did not.

However, if a thief did not have the needed volume of legal metal he could contact a fence. A fence is a person who purchases stolen metal and then sells it grouped together with obtained legally metal, acting as an intermediary in the sale of metal. The present study was unable to locate and interview a fence, but their activities were discussed several times. For example, Michael discussed his contact with a metal theft fence this way,

We never used him, but I talked to some of the guys that did and they said he would show up in an old, beat up truck and put a portable scale on the ground and weigh it all and load it and pay cash right on the spot. He didn’t ask questions and didn’t give receipts either. We all know what the deal was there! I do know he didn’t give as good as price as the yards did. Maybe he could be considered a middleman. I do

know he gave out a business card that had a name of a recycle center on it. I don't remember that name though.

Another example of fencing metal came from Jen, who is a subsistence scrapper living and scrapping in the government housing projects. Jen described how drug dealers are beginning to scrap, even stealing metal items from her, and use a fence to sell their metal exclaiming:

Jen: The dope dealers in my community are now selling scrap!

Interviewer: Now the people who are slinging the dope and are scrapping, are they doing it (referred to collecting scrap) the same way you are doing it?

Jen: Well, like I told you, the maintenance people give me stuff. And when they see the maintenance truck give me something [the drug dealers] tell me, 'I am in they way' and 'they want it'. They are not getting in the dumpsters and all like I do.

Interviewer: So are they bringing it down here, too?

Jen: What they were doing that day is getting somebody else who scraps and giving it to them so he could pay them.

Interviewer: So dope dealers see stuff, call somebody they know who is a scrapper and say I will take \$5 for this AC unit and the person will bring it down here and get \$10.

Jen: Yes! Yes! Exactly! Right now that is what they are doing.

As the laws restricting what can be sold at scrap yards and the rules and regulations expand (e.g., photo ID, required pictures of scrap being sold), it is likely that fencing metal will increase as well. As has been seen in these two examples the practice may already be in place and common knowledge. For example, when the interviewer asked Zach what to do with stolen metal he said, "calls the guys [who list their phone numbers in the papers]; they will come to you and buy anything". Zach and Jen were referring to those who are identified

as Professional Scrappers in Chapter 4. According to several thieves and scrappers, some Professional Scrappers are knowingly purchasing stolen material and therefore operating as a fence. Unfortunately, individuals who scrap and purchase stolen metal to mix with their load of legal metal are very difficult to differentiate and it is doubtful that recycling centers are aware when this activity occurs.

Trusted Sales. The final technique some metal thieves use to sell stolen metal items to the recycling center was to do so in the course of their regular business activities. In other words, criminals would present themselves as recycling metals legitimately gained in the course of work. Most recycling centers tended to trust these individuals and had little suspicion of their material since they were employees of another company (e.g., electricians, plumbers). Trusted sales were accomplished, primarily, in two ways. The first is similar to others who intersperse stolen metals in with legal metals. However, the distinction is that the thief works for a place where he or she has legitimate access to metals. For example, Matt worked in the family HVAC business and described how he,

Would mix the [stolen] scrap that I had in with that [legal] scrap... Sometimes after a big job, like we did a big job for [a local university] and the library... [I'd take it] (his stolen metal). Cause they (the yard) knew me. They knew, ahhh that is Billy's son. I worked for Miller Heat and Air. But nobody really knew I was doing that. The only guys that knew were the ones I was running around... that was it. Everybody else, didn't nobody know, nobody knew. They (the yard employees) did not have a clue!

A few metal thieves appear to sell stolen metal outright, without attempting to hide its origin or mix it in with other legal metal. This is the second way that metal thieves sell metal in the course of their business, without skepticism from recycling center employees. Simply by working for a company that has valid and justifiable reasons to possess metal, they

are able to pass in and out of recycling centers with material that may be stolen. These included licensed plumbers, HVAC workers, electricians and those who were employed replacing windows, siding, and even general contracting. While conducting observation at several recycling centers the researcher observed individuals arrive near the end of the day in work vehicles often with new items to recycle. For example, several, who appeared to be electricians, would sell new boxes of electrical wire. None of these individuals would engage the researcher in conversation, but came and left very quickly. It was unknown if the wire was stolen, too much was ordered for a job, a customer had paid for it but did not receive it, or if it was illegally taken from the employer. However, the electricians appeared to function with impunity within the recycling center.

Moreover, observations at the recycling centers revealed many regulars who were employed in fields with access to metal. These individuals never received the same level of suspicion or questions as those who did not have a valid electrical or plumbing license, were not employed by a business with access to metal or unknown to recycling center employees. During one discussion with a recycling center manager on the techniques he uses to identify stolen metal the researcher summarized the tactics of individuals who use work as a cover when recycling stolen material. After explaining the technique the manager stopped what he was doing, stared out into the yard, appearing to look at nothing in particular, yet with a facial expression somewhere between alarm and thoughtfulness. Then, slowly turning to the researcher with his eyes widening and his facial expression changing to concern he said, in pensive incredulity, "Those are the guys that I trust!" Clearly, the manager had never considered how individuals with legitimate access to metal may be selling stolen material and was distressed over the idea.

Exchange Conclusion. It is difficult to know just how often recycling centers are complicit in criminal activity. Ultimately, most thieves said they believed many of the recycling centers knew what they brought in was stolen. They also said there were recycling centers that were known to take stolen metal. However, with one exception (e.g., Eric), the thieves behavior suggested otherwise. Nearly all the thieves attempted to avoid detection at the yard. Clearly, recycling centers play a role in metal theft, as they are the ultimate purchaser of the material. However, with the techniques metal thieves use to successfully mislead recycling centers it is difficult to know to what degree they are culpable.

Metal Theft Partnerships

A majority of thieves in the present study worked in teams to accomplish thefts. These teams or partnerships ranged from just two individuals to groups of five or more. However, the most common was a group of two individuals who worked closely together to steal metal. Often these partnerships were formed outside of, or prior to, metal theft. For example, Michael and Eric were high school friends; Jessica was romantically involved with her theft partner; John, and Matt each were co-workers with their respected co-conspirators, and Dustin partnered with his brother. These partnerships appeared to be strong and lasting, likely due to the robust relationship which existed prior to metal theft. Moreover, unlike casual relationships with other metal thieves, which were often not positive, partners usually remained loyal to one another.

Despite it being common to have partners, not everyone in the present study worked as a team. Consider, Daniel, who preferred to work alone, was homeless, had no metal related experience, and despite supplementing his scrapping with metal theft struggled to earn enough to eat. When discussing partnerships, Daniel talked about the many times he felt jaded after a partnership when profits were split and he did not receive what he

considered a fair portion. Due to this he explained his preference to work alone, saying, “I don't really trust nobody” and “It's just people who are homeless, you know, they will fight you for a fucking sandwich”. Daniel was a regular contact with the researcher until he was arrested on metal related burglary and theft charges. Daniel had entered a major metropolitan city’s police headquarters through a door, which was ajar, and stolen radios, computer wires and other small metal items. While visiting Daniel in jail, shortly after his arrest, he explained,

Daniel: I went down the police headquarters and got some scrap parts and I scrapped it. I don't know what the hell I was thinking.

Interviewer: What did you take?

Daniel: Just some computer parts and stuff and [I]scrapped it. That ain't right, I know. Now I am looking at burglary three!

Interviewer: So what prompted you to do that?

Daniel: I don't know man I got tired of living on the streets.

Daniel was not alone in his haphazard and opportunistic approach to metal theft or his desire to work individually, due to not trusting others because of issues related to profit sharing. Chris, who is also homeless and struggling to eat despite his metal theft income, also expressed frustration when he tried to collaborate with others, saying,

Cause, everybody wants something for something. Somebody helps me do this and I don't do it by myself, they are like, oh I helped you; I helped pull this out and I helped do this, where is my half at?

Working without a partner is normally by choice, according to the thieves interviewed.

Moreover, those who functioned individually seemed to commit more opportunistic metal thefts (e.g., Daniel and Chris), be unskilled (e.g., no previous employment as a plumber or

electrician), were generally less effective thieves, were more often questioned and arrested by the police and distrusted others.

Two of the primary concerns between those who prefer to work individually related to disputes in profit sharing and a lack of trust; however, those who worked in teams rarely reported having such issues. Moreover, those who functioned in partnerships tended to keep their partnerships for extended periods without serious dispute. In fact, in the present study, disputes between established partners seemed rare, even over money. This was perhaps due to the extensive relationships that tended to exist prior to stealing, because teams seemed to be more effective and the profits greater or due to the routine processes of evenly splitting profits. Regardless of the reasons, disputes were rare and nearly all teams split the profits evenly, unless there was theft related expenditure by one of the members (e.g., one member provided the vehicle). Other teams functioned so efficiently it resembled a business operation, paying expenses related to the theft before splitting profits, and having arrangements for how the profits were split. For example, Leo described his relationship with his partner replying,

Leo: I always [stole metal] with me and another guy, you know so it was just the two of us. If we made \$5,000, we would [each get] \$2,500 dollars apiece, after we put more gas in the truck and [bought] more duct tape and stuff like that.

Interviewer: Okay, so you all treated this, as a business, right?

Leo: Yeah, pretty much, we made sure the truck had gas, if there was anything wrong with the truck we would make sure to get it fixed and make sure we buy new hacksaw blades, new tools, you know what I mean, that all comes off the top and then we split the rest.

When disputes did occur within partnerships, they often surrounded the arrest of one of the partners. These incidents seemed to stress the relationships and caused fissures, some of which were permanent, while others were temporary. For example, Dustin shared an incident when he and his partner (his sibling) were charged with metal theft. While they were stealing an air conditioner, the police suddenly arrived. Dustin was able to get away, but his brother was caught. Dustin explained what happened after he stole enough metal to bail his brother out of jail the following day and learned his brother had told the police he was involved declaring,

My own brother snitched on me and that hurt me the most! He said he did it because the cops were stomping on his head. It should not have mattered, but he did what he did. I got so mad he seen the anger in me, he turned so white, I started to go after him (physically) and my wife and his wife stopped me and he ended up urinating on himself, but we got through that and things just went the same. And yes, I did dirt with him again. It's just a brother's love I guess.

The partnerships that were established prior to involvement in theft or on a more intimate level, such as siblings or longtime friends, were more likely to be resilient than partnerships established other ways. For instance, John and Michael established a criminal partnership with people they worked with, and both blamed their partners for talking to law enforcement, which lead to their arrest. Neither of those relationships recovered. Actually, Michael was so angry with one of his partners he received an additional charge because he was found to have threatened his former partner,

My boss and that so-called friend did no prison time. My friend was the first one to go in and admit to everything. So when I found out about it, I wrote on Facebook that he would 'get his in the end', meaning karma. Guess what? The next day 6 [law

enforcement officers] arrested me for intimidation of a government witness. They gave me an extra year because of that.

Notwithstanding the limited instances of partners turning on each other during law enforcement investigations, partners usually remained loyal to one another. This loyalty and positive relationship appeared to remain throughout the course of the criminal partnership and even beyond. Moreover, the partnerships discussed in the present study did not appear to have internal hierarchy. While not especially addressed in the questioning none of the thieves who had collaborates expressed or indicated there was one or the other who led the team or was in charge. In fact, there were often stories indicating leadership roles would change depending on availability of vehicles and, more importantly, knowledge of places with available metal.

How Thieves Learn

This chapter has examined the techniques and methods metal thieves use to commit theft. These methods and techniques primarily revolve around three important stages of metal theft: identifying places that contain available metal, techniques used to steal the metals and the procedures utilized to exchange the metals for money. What has not been discussed is how thieves learn these techniques. Based on the present study's findings, thieves learn to steal through three methods: each other, while at work or through trial and error. These methods of learning are not exclusive to one another, many metal thieves learned by more than one method during their thefts. For example, one thief may have initially learned how to steal metal from a friend who stole, but later discussed how he learned to steal certain metals from specific places by trial and error. However, they are presented here as separate methods for ease of comprehension.

From Each Other. The overwhelming majority of metal thieves learned to steal from another thief. This should not come as a surprise, as the present study has demonstrated the tendency to work in partnership with one another in metal theft is very common. Typically, a relationship was formed prior to criminal activity. Then at some point, usually due to a financial need, the relationships transformed into a metal theft partnership. For example, when Chris and his girlfriend exhausted their finances, his girlfriend suggested he steal metal with her brother telling him, “You can go scrapping copper and stuff like that”. Chris explained that his girlfriend’s brother stole metal, “all the time,” and taught him how to steal.

Similarly, Jessica described how she began dating a man who stole metal with a group of other individuals. Her initial participation was as the driver saying, “That is mainly how I got involved...I would sit in the truck and wait on them”. While Jessica was the only licensed driver with a vehicle in the group, over time she progressed from being the driver to learning more about metal theft by, “Just being around the guys” and began to actively engage in burglary and trespassing to commit metal theft.

Jessica spent years stealing metal with her boyfriend and ‘the guys,’ learning a significant number of techniques and methods. Due to these experiences, she learned how to be a successful thief and was able to produce, “\$70 and some days we might make \$300” with little time commitment. However, Chris’ relationships with his girlfriend, and therefore her brother, were short lived and he did not learn as much as other thieves. For example, despite squatting in an abandoned house and stripping its metal contents Chris struggled to, “put \$10 in my pocket today”.

Based on the information gathered in the present study, the best method for learning to be a successful metal thief appears to involve extensive time with other, experienced

thieves. A quick theft here and there or brief instruction by another thief is typically not sufficient to teach thieves how to be an effective metal thief. On the contrary, a longer relationship, often centered on a partnership with another experienced metal thief is usually necessary for a new metal thief to proficiently learn the techniques and methods and be successful at metal theft.

Some of the thieves interviewed in the present study also discussed teaching other thieves the methods and techniques of metal theft. This exclusively occurred when new partners were selected. For example, when Michael became concerned that his repeated appearance at recycling centers would tip off law enforcement he brought in Eric as a partner and taught him how to strip wires. Similarly, Leo was faced with a difficult decision when his longtime partner was arrested and sent to prison. Rather than stop stealing, Leo taught a new partner, sharing the story this way,

I had my best friend. We were doing it for a while and then he ended up going to prison for unrelated issues. I ended up meeting up with this other guy that I became friends with and I showed him how to do it, you know, and we were doing it and then when he got out of prison we ended up picking back up, per se.

At Work. In the present study, the most successful metal thieves also had training and experience gained from work. As described previously, nearly all metal thieves were currently or had previously been employed in a field related to working with metal (e.g., construction, employment at a recycling center). This employment provided the necessary background and expertise needed to successfully steal metal. Specifically, it allowed metal thieves the opportunity to gain technical skills, increase knowledge of certain types of metals and often provided the tools necessary to carry out large, extensive and technically challenging amounts of metal theft. Additionally, regular employment in a metal related

industry, often exposes metal thieves to places with high quantities of valuable metals. However, it is important to distinguish learning how to steal and learning about metals which enables individuals to steal. Both types of learning occur among metal thieves.

Some metal thieves experienced circumstances at work where they were actually taught to steal by a co-worker. For instance, Matt's co-worker taught him how to quickly steal an air conditioner. Matt's co-worker even took him along on several thefts to demonstrate and further teach the techniques. Comparably, Michael explained how he was taught to steal electrical cable by his co-workers and boss on the first day of work,

From day one, we were told that (recycling cable) was one of the benefits of working [at the company]. At the end of the job, our lead man, who would later become a boss, said, 'We're gonna take it (the cable they replaced) to another coworker's house and burn the lead off of it' and then he would cash everything in and split it between the seven of us. We each got around \$700 for it! I was like, wow, this is awesome!

However, not everyone was taught while at work how to steal. Work also helped metal thieves learn to steal by simply educating them on the value of metal and the process of how to recycle it. This was the most commonly spoken of way that metal thieves were introduced to recycling, in general; they learned from employment which metals had more value and how to process them. For example, James explained how he learned to recycle, saying, "Actually...I worked roofing and when we [tore] off some of the metal from the roof we knew it was copper or aluminum so I learned it [that way], you know what I mean?" Similarly, Zach initially learned about metals when he worked for his father's automobile junkyard.

While a few individuals learned to steal metal from co-workers, the majority utilized the skills, knowledge or tools gained at work to locate, steal and exchange the metals. In each

case, having been employed in a field related to, or exposing an individual to, metal enhanced the metal thieves' awareness of metal's value and knowledge of the methods necessary to obtain it. Moreover, those who were employed in the field tended to yield higher quantities and qualities of metal when stealing. Current and past employment clearly is a factor in metal theft.

Trial & Error. Trial and error were also commonly spoken of amongst metal thieves. Some learned exclusively through this method and had little work experience or effective guides to teach them. Leo explained that he had legally scrapped a few times, but had never stolen metal until he learned about it from news coverage. He explained,

Leo: I actually kind of learned it on my own. I was watching the news one day [and] this guy got arrested. He stole millions, and millions of dollars; it was ridiculous, for stealing copper out of an abandoned building. I said well I'm going to look into this a little further and I did, you know, and I ended up just starting to do it. The first time I did, it was scary, but you know I wasn't really good at it, but over the years I got really, really good at it.

Interviewer: How did you learn?

Leo: Actually, that was trial and error. That type of thing. The first time I did it I just kind of brought everything to the scrap yard and the scrap yard was like, 'oh you know you can get more money if you do this' and I was like, 'oh really' so now that's why we start cleaning it and stuff.

Leo went on to explain how he learned different techniques and methods for effectively stealing metal. He was not alone in this regard. Many of the thieves interviewed explained or described how they continued to learn or refine techniques for stealing metal through trial and error. Dustin explained how he and his brother learned to scrap and eventually to steal

more efficiently, saying, “We just learned from our mistakes and we learned real quick what was worth more money, so we look[ed] for them items first, but whatever was worth money we took”.

Another method of learning by trial and error occurs prior to exchanging the metal for money. Many thieves shared experiences of learning how to separate metals better to get a higher price. For example, stripping the plastic coating from electrical wires or removing soldered connections off copper pipes can double their value. Sometimes this occurred exclusively by trial and error, such as when thieves received a lower price for a bucket of electrical wire with the coating on it, compared to a bucket of wire that had been stripped of the coating. Other times, a recycling center employee would make suggestions or take time to teach them how to effectively process their metals so they could earn higher profit. Regardless of the methods by which thieves learned to process metals better the result was a higher price and thus encouragement to continue stealing more. For example, Daniel, who was attempting to clean a load of purportedly legally acquired metals at the recycling center, explained,

They had to learn me; for real, they taught me a lot. Yeah, they taught me a lot, like to break the shit down all the way. When I wasn't making no money. You know how you get frustrated being out here all day and not making no money. (Turning to an employee, he said) Is that aluminum? Sir, please...I just need help learning!

The instruction that Daniel received from the recycling center employees each time he arrived allowed him to earn more money from the metal he collected and stole, as well as encouraged him to continue collecting metal.

However, it should not be misconstrued that recycling center employees know they are assisting metal thieves who are learning to be more effective. Rather, during observation

the researcher observed recycling center employees frequently offering advice and teaching customers how they could increase their profits by processing the metals better. This appeared to be common practice at most recycling centers, and was a way many thieves learned to increase their profits.

Learning Conclusion. The three methods of learning discussed here are not mutually exclusive. Some thieves were exposed to metal's value while at work but did not learn the techniques specific to theft until they developed a friendship with a thief. Other thieves learned through trial and error. Some thieves were brought into a partnership and taught the methods, but continued to learn to become better through trial and error. Still others were taught how to steal by co-workers. Regardless of how thieves initially began, each of these learning processes was often present, to one degree or another, and continued for some time. In addition to learning to steal, a few metal thieves discussed teaching others to commit metal theft too. Consequently, the cycle of thieves teaching others how to steal, combined with continued learning by way of trial and error, means thieves will continue to create more metal thieves who will continue to possess better-honed methods and techniques.

VII - SOCIAL CONTROLS OF METAL THIEVES

The previous chapter examined the methods and techniques by which thieves commit theft, as well as how they learn those techniques. This chapter identifies social controls that may influence metal thieves and examines how metal thieves respond to these social controls. According to F. Evan Nye (1958), social control describes an internal means of control, such as values, norms, relationships, moral codes, beliefs and commitments that encourage individuals not to violate the law. Nye proposed that social control is expressed in three primary areas: direct social control, indirect social control and internal social control. This chapter will address each of Nye's proposed areas of social control, providing an understanding of how social controls are experienced and influence a thief's behavior.

Direct Control

Direct control is the process by which punishment or rewards are given to an individual based on their behavior. Typically, this occurs when individuals deviate from accepted norms and are punished (e.g., receive jail time for a theft), or when individuals meet society's expected norms and are rewarded (e.g., receiving a bonus at work for excellent performance). However, metal theft is a deviation of societal norms and therefore most metal thieves are concerned about the punishment they may receive if they are caught. For example, most metal thieves stated they did not tell other family or friends about their metal theft behavior. Therefore, the majority of direct control comes in the form fear of law enforcement and jail or prison. This fear of being investigated, arrested or punished by law

enforcement was evident in several ways, including concern for cameras, dogs and, primarily, witnesses to the crime.

Most metal thieves discussed dogs and the deterrence effect they had on their behavior. For instance, when asking Dustin, who stole hundreds of air conditioners from occupied homes, how dogs affected his behavior he whimsically said they are, “Too loud. I was crazy, but not stupid!” In fact, the presence of a dog, above cameras and even nearby witnesses, is a nearly universal deciding factor against a theft. The consensus was that dogs, either at the theft location (e.g., junkyard dog) or at a neighboring location were reasons not to steal because they might alert someone to their presence. Jessica explained why she avoided dogs, saying, “Oh yeah, cause that would've [woken] somebody up. Cause it's (a dog) usually [at] someone's house next to a place like that.”

In addition to dogs, several metal thieves discussed cameras; however, cameras had a rather mixed effect on thieves. Nearly half of the metal thieves mentioned cameras as a factor that influenced their decision to steal metal; however, while all stated they looked for cameras, some said they would steal even if one was present. For example, Dustin explained he, “Didn't care about cameras [because we] wore face masks” and Matt said he, “Eventually would have snatched [the air conditioner]”. In contrast, many metal thieves said something similar to Leo when he said, “Yes, definitely” cameras would prevent him from stealing.

However, another aspect of the controlling effect of cameras was whether the cameras were visible. Several metal thieves noted that if there was a sign indicating that a camera was in operation they would look for a camera. However, if they were unable to identify a camera they assumed the sign was false and would often continue in the theft. Jessica disclosed,

Interviewer: If you saw a sign that says ‘cameras in use’, would that have kept you from stealing?

Jessica: No, we would have just hung out looking to see if we could spot them.

Interviewer: You would just hang out, and if you couldn't see them you would just assume it was not there and say, oh well?

Jessica: Yep!

In the case of metal theft, it appears that cameras are less effective social controllers than dogs. Moreover, to be effective they needed to be seen by the thief. However, even in situations where the cameras are seen some thieves still take precautions (e.g., masks), to hide their identity, and will steal regardless of the presence of a camera.

While dogs and cameras were discussed by many metal thieves, the most common direct control was a concern of other individuals. Regardless of who might see the theft, metal thieves were very concerned about other people observing their actions and notifying law enforcement. In particular, regardless of the place and type of metal stolen, neighbors were nearly always mentioned as a factor, especially as Jessica put it, “nosey neighbors”.

While Jessica looked for “nosey neighbors”, many other metal thieves described active or observant neighbors as a factor that would often cause them to alter or abandon their plans of theft completely. For example, Matt explained how he evaluated the presence of neighbors, and how busy and observant they were, even their gender affected how and when he stole air conditioners, claiming,

We would scope out the house, we knew when [the neighbors] was gone, when they were home, if they were [often] outside or in the house, single mother next door just with some kids or something. If no man around, you know.

Moreover, even if a residence were occupied, some metal thieves would continue with the theft. However, they would take extra precautions so they would not be discovered. For instance, Dustin described how even if an air conditioner was two feet from a window he would still steal it. However, he explained that air conditioner units at occupied homes have to be, “In the open (not surrounded by a fence), [yet] concealed somehow, by trees or behind the building”. Moreover, he also described how the presence of a potential witness or victim would cause him to alter the plans he had, stating he would return, “At night...when they were asleep”.

While metal thieves were cautious not to be discovered, many thieves often had a story or excuse ready for neighbors or others who might observe and question their activities. This most frequently developed story revolved around presenting himself or herself as a maintenance, construction or HVAC installer completing a job. For example, Matt said, “We could pose as a Heat and Air person, like we back there fixing the air”, similarly, Leo had construction company logos on his truck to reduce suspicion.

While thieves were concerned with dogs, cameras and other people who may observe their activities they were most concerned about law enforcement and specifically the possible penalty of arrest. Approximately one-half of those in the present study were arrested for metal theft at some time. In most circumstances, the arrest followed an investigation that began on a partner and culminated when a detective showed up at their home. For instance, Eric, Michael and John described how police, “showed up at my door” while investigating a metal theft incident. In a few other instances, thieves were caught while stealing. For example, Zach was caught stealing from a sign shop when police responded to a motion alarm. In addition, Leo was caught when his truck had a flat tire and the police officer stopping to help observed over, “\$6,000 worth of copper in the back of my truck”.

While some metal thieves were arrested, not all the contacts with law enforcement resulted in an arrest, or even suspicion. Some contact with law enforcement had little to do with metal theft and was merely routine (e.g., traffic stops) in which their illegal activities were either not uncovered or were explained away. For example, Dustin described when he was stopped while driving late at night with a stolen air conditioner in the back of his vehicle, answering,

I got stopped with [an] A/C unit. I was coming home from [stealing] it and I told them I took it from work, [because] it was bad. So, they called a number I gave them and a maintenance guy told them, yes, it was ok. The [maintenance guy] was my father in law, he did work for an apartment complex, but not the one I [stole] it from. I was stopped cause it was late. That's all, routine... [the cop was] just doing his job.

Moreover, other times law enforcement did not observe the theft. For example, Leo mentioned there were several times police officers pulled into the parking lot of a building he was stripping, but never observed him. He described one situation where his truck was on site and he had finished stripping, "About three or four thousand dollars' worth of copper" when a police officer pulled into the lot of the abandoned building,

[The cop] went in the back (of the abandoned building Leo was in), he walked his dog and he was just sitting there in the parking lot watching for speeders. Had nothing to do with us, but we got so paranoid at that point, we just kind of hid in the building for a little while... So, I'm in this building smoking cigarettes like crazy, looking out the window of the top floor of this building, staring at this cop for hours in December, freezing my butt off, waiting for him to leave.

Metal thieves were constantly concerned about contacts with law enforcement and many took great care to avoid detection. This involved concealing items while transporting them, damaging items to lessen their apparent value and developing a cover for possession of metals. For example, Michael had an explanation in the event he was questioned by law enforcement due to having over a ton of stolen industrial sized copper wire, describing,

We always had stories made up just in case. We had one guy's business card that actually gutted out old buildings and he told us if we [were questioned by] the police [we could] call and he would cover for us.

For most metal thieves direct control is centered on law enforcement and the potential for arrest. In an effort to avoid this punishment, most thieves take certain precautions. These often involve avoiding dogs in nearly all situations and typically avoiding cameras when they are visible. In nearly all circumstances, other people were avoided by seeking abandoned properties, or operating a night when the occupants were sleeping. Moreover, if confronted many thieves had stories or justifications prepared to escape suspicion.

Despite frequent contacts with law enforcement, approximately half were arrested for metal theft and several others were incarcerated for unrelated charges. Nearly all of those who had been arrested described that experience as a factor that would prevent them from stealing in the future. In fact, several of the individuals interviewed for the present study were involved in metal theft years prior, and described how after an arrest and subsequent imprisonment they had not returned to metal theft, despite being released. In other words, the constant fear of being discovered and the effects of arrest did seem to have a controlling effect on the individuals in the present study.

Indirect Control

Indirect social control refers to the relationships individuals have that positively or negatively influence their behavior. In other words, these relationships either encourage conformity to social norms, or may encourage individuals to engage in deviance and crime. The most common indirect social control relationships discussed by metal thieves involved other metal thieves and family.

As established in Chapter 4, metal thieves tend to know other metal thieves. In fact, this knowledge of other metal thieves occurs more frequently within the taxonomy of metal thieves than any other scrapper taxonomy. This means that it is far more common for a metal thief to have peers who are also committing metal theft, and therefore, are less likely to experience positive indirect social control. Rather, a metal thief's violation of societal and scrapper norms, values and codes may actually be encouraged due to their peers.

This concept is magnified during criminal partnerships, which occur often, as demonstrated in Chapter 6. The significant influence partnerships have on indirect social controls is primarily due to the increased contact and influence. Especially since many partnerships are formed through romantic relationships, between siblings or emerged from long-standing friendships. These intimate relationships combined with criminal partnerships enhance indirect control, encouraging criminal behavior.

The second common form of indirect social control is other family members and close friends who are not involved in metal theft. In general, family members and close friends, other than those involved in a criminal partnership, tended to have a positive indirect social impact on metal thieves. For example, Leo described why he quit stealing metal, stating,

Leo: You know I met this girl and we got engaged and stuff, so at that point it was scary so that's why we had to get out of the business, and go out and get regular jobs...

Interviewer: Is it still tempting to you?

Leo: Oh yeah definitely! Driving down the road you see a building, oh man that's a gold mine right there, you know, but I just can't do that to her (his fiancé). I want to be fair to her.

Similarly, Shane, a subsistence scrapper described why he does not steal, saying, "Oh No! Cause it's in my name and I don't steal. Plus, my momma told me she would beat my fucking ass, and she died of cancer, and is in heaven looking down on me."

Conversely, a lack of family and close friends may also demonstrate the reduced indirect social controls available to some thieves. Chris, Daniel, David and Robert described losing all or most of their close family members through death or because of being shunned. When discussing his family Chris said in exasperation, "My dad's dead, my mom's dead, my family's dead, all of them!" Similarly, David described how, "My family that is here has nothing to do with me, and the rest of them are dead, and my children right now don't have anything to do with me".

Most thieves who did have family and close friends withheld their criminal activities from them, presumably, to avoid shame and indirect social control. For instance, James said about his family's knowledge, "They don't really know, I mean it's just me and her (his wife) and we don't [tell] anybody". In the same way, John told his family about scrapping, but, "nothing on the tobacco frames" he stole.

Clearly, indirect social control of close friends and family can have negative and positive impacts on the lives of metal thieves. They may experience indirect social norms,

values and codes influencing their lives in a positive way or may be encouraged to ignore those values. However, indirect control of family and friends is not the only way thieves are influenced; they are also influenced by internal control.

Internal Control

Internal social control refers to the beliefs, norms and codes, or a sense of right and wrong, which a criminal possesses internally, and influences their behavior. It is believed that if individuals internalize societal norms and values they will be less likely to commit crime. However, when individuals fail to internalize these norms, crime may occur. Chapter 4 discussed the common norms, values and codes for scrappers. Further, it identified that the majority of metal thieves were once scrappers who likely internalized these social controls yet, as current metal thieves, failed to comply with these internal controls. Chapter 5 demonstrated that many metal thieves drift into criminal activity and often claim to enjoy metal theft. If metal thieves internalize societal, and especially scrapping, codes, values and norms prior to theft how do they drift into metal theft and enjoy the activity? One method commonly used by criminals who avoid the internal social controls of their own conscience may be to neutralize their behavior.

Working under the theory and assumption of social control, Matza and Sykes (1957) developed the theory of neutralization to explain how criminals are able to commit crime. The theory of neutralization argues that moral codes are not replaced when crime occurs, but rather criminals drift from legal to illegal activities while justifying, denying or neutralizing their behavior. Neutralization theory appears to be supported by the present study in several ways.

First, while the subculture of scrappers appears to have clearly defined values, beliefs and codes under which they operate, metal thieves do not demonstrate a cohesive concept

of values, norms and codes. However, rather than creating new codes, values and norms, they tend to suspend the norms and codes that had previously been a part of their life when they were scrappers and not metal thieves. For example, John who scrapped legally, suspended his norms, values and codes when, “seeing tobacco frames and seen[ing] how they’ve been sitting there for a few years and wasn’t being used” he decided to take the frames. When stealing the tobacco frames he set aside the scrapping codes of *no theft* and *ask first*, which are common among most scrappers.

Secondly, many metal thieves justify or deny their criminal behavior in an attempt to neutralize their behavior. For example, Dustin denied any injury when stealing air conditioners from apartment complexes, citing insurance absorbing the costs and justified other thefts from “the richer parts”, indicating he believed the wealthy could afford the theft of an air-conditioner when he disclosed,

I didn’t mind taking from apartment buildings because the insurance company would take care of the replacement of the items. I never went into the hood and took anything, just from the richer parts; my thought process was I wasn’t hurting the hood.

Moreover, Chris, who is homeless, denied responsibility and simply blamed his thefts on the government for failing to give him financial assistance and forcing him into the situation saying,

Chris: If I got a disability check I wouldn't be doing none of this.

Interviewer: You don't think so? (Implying the burglary and metal theft he had just committed)

Chris: Nah, I'd be all right at \$800 a month!

Chris was not the only one who blamed the government, or as Daniel referred to it, “the system”. Leo represents several thieves who indicated the reasons they began stealing metal was due to a criminal history that made gaining employment difficult,

You know...being a convicted felon, it's really hard for me to find a job. I'm not saying that it's not possible, but you know at that time I didn't want to work a 9 or 10 hour job and make \$50 or \$60 bucks a day, really. It just wasn't worth it to me.

Leo, who estimated he earned over \$200,000 in stolen copper sales within three years prior to his arrest, went on to explain how he justified stealing, by denying his actions injured others and condemning other metal thieves who, in his eyes, were worse than he,

Leo: A lot of scrappers they go to the foreclosed homes and stuff like that and they get stuff like that out of abandoned buildings. I never went to homes or anything like that. I was kind of like, you know *I'm not a thief*. What I used to do is I would find places that had burnt down, like big industrial hotels or a insane asylum, that were closed down, that they were just going to tear down anyway, and so I would go in there and take that and I always wondered who is going to miss that? *It's still illegal*, you get in trouble for it, [but] you get in more trouble going into a home, and stealing copper than you would a big industrial abandoned building.

Interviewer: Okay, so is part of the reason that you chose the industrial sites is because you didn't want to get in trouble or did you have some type of personal, moral issue with the homes?

Leo: It was for the fact that I wouldn't get into as much trouble, [and] it was also a moral thing, you know. I'm a firm believer in karma, you know. If you scrap a house that is foreclosed the bank can't sell the house for the money that they want because all of the plumbing is gone out of it. So, whatever I've displaced has to come out of

their pocket...it's kind of wrong to do that. But, to scrap a building that's going to be torn down in a year or two, who's really going to miss it you know? I never stole anything from anyone that it would hurt their livelihood, you understand what I'm saying? I wouldn't go into a store and rob someone, I wouldn't rob a bank or a person, per se, because you're taking away from their livelihood, you know, so I do have a conscience. (Emphasis added)

Leo had developed an extensive system of denials of injury and neutralization that he internalized to justify his actions. While his thought process may appear to contradict itself, Leo seemed perfectly at ease with his explanation and justification for his actions indicating he had neutralized any negative feelings of guilt that he may have initially felt.

Leo was not alone in his complex justification and neutralizations. Many of the same concepts were echoed by Eric, who was a member in a large theft ring that stole used wire from a major electrical corporation, earning the group over half a million dollars,

I would always try to make it seem like you know we're not doing a bad thing. All this is doing (the metal he stole) is going back to a giant corporation to a CEO who is getting all the money, and it's just a little man trying to make a buck. I was just trying to justify what was going on in my own head.

The third method of neutralization involved a handful of metal thieves appealing to higher loyalties, in most cases to the virtues of recycling. For example, as James reached into a dumpster in the alleyway behind a business he said, "It's going to the dumpster anyway, you just don't want us to have it" criticizing individuals who throw things away and try to prohibit him from taking them. In addition, Leo commented, "So pretty much I'm recycling", and finally, Dustin mentioned, "You're also helping the environment", when discussing metal theft. This neutralization often came when metal thieves were taking metal

items they believed were going to be discarded anyways, such as from abandoned buildings, constructions sites or dumpsters. They tended to believe that as long as they did not see a continued use or purpose for the metal item it should be, or actually was, free for them to take. Sometimes this was little more than taking something from a dumpster, as James did while the interviewer talked with him. Other times the virtues of recycling were used to justify theft.

These three common neutralization techniques are difficult for those not involved in metal theft to understand and may appear contradictory. However, most of the thieves interviewed never appeared to notice the contradictions in their own statements. For example, at no point did Leo appear to identify, consider or believe that the owner of an abandoned building, from which he pillaged for tens of thousands of dollars stands to be at a financial loss just as much, if not more, than the owner of an abandoned residence that another thief stripped of its copper. Rather, Leo and most other thieves justified their actions, denied the injury metal theft caused, and some even appealed to the higher virtues of recycling. In this way, they were able to neutralize the moral and ethical trepidation they had when violating the scrappers' codes and norms, which most of them had established prior to steeling.

Social Control Conclusion

There are three primary areas of social control: direct social control, indirect social control and internal social control. Metal thieves may be influenced by all three kinds of controls. Direct controls are the external risks associated with stealing metal. Most often, the direct controls thieves are influenced by are dogs, cameras, witnesses and law enforcement. These factors tend to influence how, when and if a metal thief commits a crime. Secondly, indirect social controls influence a thief's behavior, largely, based on the relationships a thief

has with others. This can be a positive influence, such as a condemning family member or an encouraging influence, because metal thieves tend to work in partnerships and know other thieves. Finally, social controls take the form of indirect controls that often involve a sense of guilt. The present study found that many metal thieves are able to neutralize any feelings of guilt thus lessening the impact of indirect control.

Clearly social controls influence the activities of metal thieves. However, due to neutralization techniques, and the limited family and friend knowledge of metal thieves' illegal behavior, the most important social control aspect is the fear of punishment -- direct control. This is the area where prevention techniques can be easily applied. For instance, increasing guardianship, including dogs, witnesses, police presences and cameras will have an impact on the activity of metal thieves.

VIII - SUMMARY AND IMPLICATIONS

Within the last decade, the rates of metal theft in the U.S. have increased dramatically causing significant damage to the built environment, individuals, businesses and governments. Unfortunately, very few empirical examinations of metal theft have occurred; therefore, the precise frequency and impact of metal theft is largely unknown. Moreover, to date, there is no known examination of metal thieves. This lack of data and understanding has been largely filled with anecdotal stories and media reports, which tend to highlight extreme cases of metal theft. Regrettably, there is little to no understanding of who is committing metal theft, why and how. The lack of data, combined with media driven hysteria, hampers any attempt to regulate, investigate or reduce metal theft crimes.

The present study provides the first known, qualitative examination of scrappers and metal thieves. By examining scrappers and metal thieves through observation, participation and interviews, the present study has developed a rich understanding of metal thieves, their demographics, motivations, methods of learning, partnerships, and theft methods and techniques. These findings contribute to the limited body of knowledge on scrappers and, more specifically, provide a deep comprehension of metal thieves; providing guidance on future metal theft research and prevention techniques. More specifically, the present study provided important contributions to the literature in the following ways.

Scrappers v. Metal Thieves. One the first difficulties in conducting an exploratory study of a population are identifying whom is to be studied. In the present case, the

researcher was unable to locate literature that provided comprehensive examination of the individuals involved in metal recycling. In fact, the colloquialism, “scrapper,” had never been defined. Moreover, a connection between scrappers and metal thieves was largely unknown.

The present study provides the first known definition of scrapper. By operationalizing the definition of scrapper and examining the data collected, the researcher identified five taxonomies including Subsistence Scrapper; Scrapping Professional; Professionals who Scrap; Philanthropic Scrappers and Metal Thieves. This revealed that not only are there distinctive types of scrappers, but that metal thieves, generally, function through unique methods that precludes their inclusion into other categories of scrappers. Therefore, delineating scrappers separately from metal thieves is not only appropriate, it is necessary in order to establish the focus of any study on metal theft.

The research also revealed a well-established subculture amongst most scrappers that had not been identified in previous research. This subculture contains well-developed norms, values, codes and behaviors commonly shared across each of the four types of scrappers. Moreover, the scrapping subculture displays a significant cohesiveness when searching for metal, while at the yard and in times of need. The study revealed that most metal thieves were, at one point, legal scrappers but had since abandoned the codes, norms and values of scrappers when they began stealing.

Defining and describing a subculture as well as providing taxonomy for those involved represent a significant contribution to the limited literature on scrappers and metal thieves. Moreover, delineating the differences and historical similarities between scrappers and metal thieves allows for a robust understanding of who is involved in metal theft and supports the findings of previous literature describing criminal drift, in this case scrappers drifting into metal theft.

Metal Thieves and Motivation. The present study reveals that metal thieves commonly drift from scrapping to theft, leaving behind many aspects of the scrapping subculture, and therefore, should be considered two separate groups. Consequently, it is important to identify the demographics of metal thieves and understand what their motivations are, apart from scrappers.

The majority of what is presumed in the literature about metal thieves is based on news reports and individuals, commonly law enforcement, anecdotal experiences and perceptions. However, based on the present study, many of these perceptions appear to be spurious. The metal theft population in the present study tended to be white, male and young adult. However, several unusual demographics emerged. First, nearly 55% of the sample had some college experience. Second, approximately 70% of metal thieves were employed full-time while stealing metal. These numbers are significantly higher than the averages for scrappers. They also indicate that metal thieves are more educated than most other criminal populations and may be motivated to commit metal theft for different reasons.

There are several studies claiming motivation for metal thieves is connected with the increasing value of metals. This price-theft hypothesis has been empirically validated several times; however, the present study's findings were inconclusive. A portion of the metal thieves (approximately one-third) claimed to be effected by the price; however, the magnitude of the effect and their actual behavior is unknown. A few thieves did not believe the price affected their theft habits. However, the majority gave conflicting responses.

Drug usage and addiction has also been frequently cited in popular media and other official documents as a motivator for metal theft. While this theory has wide appeal among government officials, no empirical studies have evaluated the connection. The present study

found drug usage does not appear to be a significant factor in metal theft. Of the one-third who discussed using drugs, only a small portion indicated they were motivated to steal to support a drug habit.

The common stereotypes of metal thieves as homeless, uneducated and drug addicted, which is common in media and government reports, has not been sustained in the present study. Rather, metal thieves may be the exact opposite and steal simply because they enjoy the excitement or desire increased money. These findings are important as the popular stereotypes of metal thieves may inaccurate and may negatively affect the ability of law enforcement, legislatures and recycling centers to develop prevention efforts.

Metal Thieves' Techniques & Methods. Very few studies have examined the techniques and methods metal thieves use to locate, identify and steal metal. The limited studies that have indicate metal theft is more likely to occur in places containing large amounts of valuable metal when there is decreased guardianship. Moreover, research also demonstrates a high likelihood of repeat-victimization. Finally, some researchers have concluded that metal thieves operate in a calculated manner while other researchers claim metal thefts are opportunist. In order to evaluate these claims and other factors related to metal theft the researcher examined the data and developed three distinct stages of any metal theft: identifying a place, committing the theft, and selling the metal. By developing these stages, it allows the present study, and future evaluations of metal theft, to analyze metal theft in a clear and temporal order.

The present study confirmed literature findings that point to the built environment as an important factor in metal theft. Specifically, places with low guardianship, such as abandoned buildings were primary attractors for metal thieves in the present study.

Moreover, if metal supplies were high thieves tended to return to the same place repeatedly to steal metal.

The techniques and methods used to accomplish the thefts varied to a great degree often depending on the place of the theft, type and quantity of metal and skill of the thief. Moreover, the present study found most metal thieves work together in a partnership and often case a place to ensure the presence of metal and evaluate risks of detection prior to the theft. These activities clearly indicate that metal thieves most often function in a calculated manner. This is not to say that some metal thieves will not steal when the occasion presents, but that nearly all of the metal thieves in the present study made calculated efforts to locate the metal, plan the theft, utilize tools to affect the theft quickly and without detection, and took steps to reduce the likelihood of detection at recycling centers.

Interestingly, employment in an industry commonly working with or around metal is a significant factor in metal thefts. Specifically, a majority of thieves either had been employed in the past or was currently employed in areas such as construction, HVAC installation, electricians, plumbers and recycling centers. The skills gained in these careers along with the access to tools and awareness of the value of metals and, perhaps most importantly, knowledge of the places where metals are frequently found means that metal thieves with these work experiences are very efficient thieves. Not only were metal thieves with these work credentials more efficient thieves they also received less scrutiny when selling metal, as they were expected to commonly have metal to sell due to their work.

These findings are important in the current literature for several reasons. First, it corroborates existing literature identifying metal theft as significantly affected by places with unguarded metal and often occurs at places repeatedly. The findings also clarify and strengthen the debate within the literature that a significant portion of metal theft is

committed by groups of organized thieves who often conduct calculated thefts. Finally, the present study identifies a tendency for metal thieves to have work experience in a field related to metal.

Metal Thieves and Social Controls. While social controls affecting metal thieves have not been previously addressed in the literature, the present study identified important controls that may provide insight into future studies and crime prevention techniques. While metal thieves are commonly influenced by all three kinds of controls direct, indirect and internal the most important findings in the present study are related to direct controls.

The direct controls discussed most by metal thieves were dogs, cameras, witnesses and law enforcement. The presence of dogs, cameras and witnesses tend to influence how, when and if a metal thief commits a crime. In each instance, the power of the direct social control is the fear of discovery and an investigation by law enforcement with possible punishment in jail or prison.

These findings are important for two reasons. First, it provides an evaluation of what control techniques have the greatest impact on metal thieves. Next, it provides clear areas for where metal theft prevention techniques can be easily applied.

Policy Implications

A number of important policy implications can be drawn from the present study. These implications are presented along natural division lines, law enforcement, legislation and recycling centers. However, many of these recommendations are linked together and should be viewed as complementary to one another, rather than individually.

Implications for Law Enforcement. The first, and most important, policy implication for law enforcement is the need to establish a method of tracking instances of metal theft. Currently no state is known to have a commonly used, separate criminal charge

or case identifier for metal theft. Moreover, only a handful of cities are known to possess the ability to track metal theft. The result is that metal theft data is included with many other types of theft and it is impossible or extremely difficult to isolate and study. The lack of data significantly reduces the ability of the law enforcement community to identify, understand and develop crime prevention techniques.

Moreover, law enforcement officers also need a cursory knowledge of metal theft and thieves. The present study reveals that on several occasions metal thieves had contact with law enforcement, yet officers failed to observe or identify stolen metal, or were easily convinced the metal was obtained legally. Brief training on many of the aspects of metal theft presented in the present study would likely lead to a significant increase in identification of stolen metal and prosecution of metal thieves.

The present study lays the foundation for training by identifying and discussing four important areas in which law enforcement needs increased awareness and understanding. First, is an awareness of who is commonly involved in metal theft and how thieves function in groups. Secondly, law enforcement officers should have an established understanding of the motivation of metal thieves. Thirdly, officers need to be aware of the methods and techniques of metal theft. Lastly, the ability to ascertain the social controls likely to prohibit metal theft is important tools for crime prevention.

Implications for Legislators. Legislators in all 50 states have been active in altering and creating laws relating to metal theft. These include, among other things, increased penalties for theft, restrictions on recycling centers and prohibiting the sale of certain metals or forms of metals (e.g., manhole covers) without proper documentation. However, many of these efforts have failed to stem the tide of metal theft. This is largely due to a lack of understanding of who the metal thieves are and how they operate. The present study provides

the knowledge base of metal theft that can be utilized when proposing changes to, or creating, new legislation.

One of the most important policy changes legislators can implement involves defining metal theft. Many of the definitions of metal theft are inadequate because they are either too inclusive or too restrictive. Developing a firm definition of metal theft, such as the one identified in the present study, will enable legislatures to successfully construct legislation aimed at deterring metal theft.

Further, constructing a separate charge for the theft of metal is the next most important policy implication for legislators. A metal theft charge, exclusive to other types of theft, allows for increased data collection for further study and examination. Moreover, since metal theft is an unusual crime, which has significant indirect costs and harms, penalties can be enhanced proportionally to the damage caused, which extends far beyond the value of the metal itself.

Implications for Recycling Centers. Since all stolen metal is eventually sold to a recycling center, the greatest possibility of influencing the rate of metal theft is at these places. To varying degrees, efforts have been made, primarily through legislation, to limit or require certain activities of recycling centers. However, these efforts have thus far proved ineffective. Based on the findings in the present study the following policy suggestions would likely influence the ability for thieves to sell stolen metal at recycling centers.

The present study revealed that a sizable portion of metal theft is committed by persons who have regular access to metals while at work and often possess some type of credentials related to metal or their work. These credentials may be an electrician or plumbing license or simply an official letter from an employer stating the employee may

recycle metal remaining after a job. Given these circumstances, two policy recommendations emerge.

The first recommendation is that recycling centers require individuals who present credentials, such as licenses, to update them on an annual basis. Moreover, in the case of a letter from an employer, recycling centers should require letters be updated on a quarterly or semi-annual basis and contain detailed descriptions of the types of metal to be recycled.

Additionally, recycling center employees should receive training in identifying suspicious circumstances surrounding metal theft. This may be as simple as educating employees on the taxonomies of scrappers may and who is most likely to steal metal. This allows recycling center employees to focus on those who are most likely to be thieves (e.g., those employed in a metal related field), rather than on those who are unlikely to steal metal (e.g., subsistence scrappers).

Finally, many states require recycling centers to record sales digitally with photos and descriptions of metals purchased, as well as seller information. This data is often reported in real time to local police departments. This existing technology should be strengthened by linking recycling center sales computers together, in real time and across geographic boundaries to provide instant notification of suspicious behavior. The present study identified a number of techniques thieves use to sell stolen metal (e.g., frequent small sales at many yards). These techniques could result in automatic notices at the time of sale. Conversely, recycling center employees could flag suspicious sales across the network reducing the ability of thieves to avoid detection by visiting multiple recycling centers. Similar concepts have been successfully implemented with pharmacies in several states (Brady et al., 2014; Blumenschein et al., 2010).

Limitations of the Research

The conclusions from the present study must be qualified by several important caveats. First, are the limitations relating to sampling and second the limitations related to interviewing methods. These limitations may affect the ability to draw broad conclusions about the entire population of scrappers and metal thieves as a whole.

Scrapping and metal theft are largely unstudied deviant population. Moreover, the population size of scrappers and metal thieves is unknown. Therefore, it is not possible to ensure a representative sample has been identified. Due to these factors, the researcher relied on convenience sampling and utilized a snowball method when possible. These methods have limitations and disadvantages such as the possibility of community and selection bias. Whereby, either due to conducting research in a specific location or due to initial selection and snowballing , he sample may be biased and not representative of the population as a whole.

A second limitation, which should be considered, is the difficulty surrounding unstructured field interviews. Since previous interviews of scrappers and metal thieves were not discovered in the literature, the researcher had to develop questions based on the existing literature. This too was a challenge, as the existing literature is sparse and does not provide a great deal guidance on questions or theoretical approaches.

Moreover, the unstructured field interviews vary according to the social situation and the interaction between the interviewee and the researcher. Some of the individuals approached chose not to participate, while others were distracted from the questions as they were digging in dumpsters or in line at recycling centers. Finally, some individuals were far more willing than other to discuss their criminal background.

The third limitation relates to self-reporting issues. While nearly every individual engage in conversation was asked if they were involved in metal theft, it is likely that some individuals chose to not reveal their criminal activity or withhold certain details of their activity. In other cases, individuals interviewed had not been active in metal theft for years and there were likely telescoping issues

Despite these limitations, the present study is important and provides new insight into the field of Criminal Justice. This study represents an exploratory study of deviant and criminal populations that are challenging to identify and reach. Therefore, despite the limitations the present study provides valuable data and insight not possible to gain with other methods and provides the groundwork for future studies.

Conclusion

This exploratory study of a deviant subculture, scrappers, and a growing criminal activity, metal theft, is important and groundbreaking in many ways. The information and rich understanding of scrappers and metal thieves garnered is the first known qualitative study of the individuals involved in these activities. The present study has identified themes, developed concepts, operationalized definitions and established the foundation for future research.

Prior to the present study, the field of criminal justice knew little about metal theft and almost nothing about how metal thieves operated and thought. However, this study has provided the first view into the unique and emerging crime of metal theft. Moreover, it has corroborated a handful of empirical studies and refuted many of the popular media reports on metal theft. Now that this knowledge base has been established, future studies of metal thieves will be able to advance the knowledge, present richer findings and develop effective crime prevention strategies.

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CURRICULUM VITA

Benjamin F. Stickle
2303 Greene Way
Louisville, Kentucky 40220
stickle125@gmail.com
(270) 303-3743

EDUCATION

- 2015 **Doctor of Philosophy**, Justice Administration
University of Louisville, Louisville, Kentucky
Dissertation title: An Ethnographic Study of Scrappers & Metal Thieves
Chair: Dr. Richard Tewksbury
- 2010 **Master of Science**, Justice Administration
University of Louisville, Louisville, Kentucky
- 2005 **Bachelors of Arts**, Sociology
Cedarville University, Cedarville, Ohio

ACADEMIC EXPERIENCE

- Campbellsville University**, Department of Criminal Justice Administration
2014 – Present Assistant Professor of Criminal Justice Administration
- 2011 – 2014 Instructor of Criminal Justice Administration
- 2011 – Present Criminal Justice Administration Site Coordinator for the Louisville
Education Center
- University of Louisville**, Department of Justice Administration
2014 – 2015 Lecturer
- Daymar College**, Department of Criminal Justice
2010 – 2011 Adjunct Instructor

ACADEMIC PUBLICATIONS

Journal Articles

- Stickle, B. F.** (2015). Examining Public Willingness-to-pay for Burglary Prevention.
Crime Prevention & Community Safety, 18(1).

Other Publications

Stickle, B. F. (2015) Forward for: *Crime Prevention for Houses of Worship 2nd Edition* by Ratliff, P. L. Atlanta, GA: American Society for Industrial Security.

Stickle, B. F. (Forthcoming). The Great Brinks Robbery. In Steven Chermak, Frankie Bailey (Eds.), *Crimes of the Centuries: An Encyclopedia of Notorious Crimes, Criminals and Criminal Trials in American History*. Santa Barbara, CA: ABC-CLIO.

Stickle, B. F. (Forthcoming). The Onion Field Case. In Steven Chermak, Frankie Bailey (Eds.), *Crimes of the Centuries: An Encyclopedia of Notorious Crimes, Criminals and Criminal Trials in American History*. Santa Barbara, CA: ABC-CLIO.

Stickle, B. F. (Forthcoming). Trial of Sheriff Joseph Shipp. In Steven Chermak, Frankie Bailey (Eds.), *Crimes of the Centuries: An Encyclopedia of Notorious Crimes, Criminals and Criminal Trials in American History*. Santa Barbara, CA: ABC-CLIO.

Tewksbury, R. & **Stickle, B. F.** (Forthcoming). Prison Populations. In Wesley G. Jennings, George Higgins, Dave Khey, and Mildred Maldonado-Molina (Eds.), *Encyclopedia of Crime and Punishment*. Hoboken, NJ: Wiley-Blackwell.

Manuscripts under Review

Stickle, B. F., & Tewksbury, R. Messages in the Music: A Lyrical Analysis of Rap, Country, Pop and Christian Music. Under review by: *Contemporary Journal of Anthropology and Sociology*.

Manuscripts in Progress

Stickle, B. F. (finalizing contract negotiations) *Kentucky's Criminal Justice System*. Durham, NC: Carolina Academic Press.

Stickle, B. F. Coercion by Law Enforcement During Public Contact: Escalation Resulting in Physical Force?

Stickle, B. F. Preferred Pre-Employment Experiences as Decision Factors When Hiring Patrol Officers

ACADEMIC PRESENTATIONS

2014 *Coercion by Law Enforcement During Public Contact: Escalation Resulting in Physical Force?* Academy of Criminal Justice Science. Philadelphia, PA.

PROFESSIONAL CRIMINAL JUSTICE EXPERIENCE

2011 – 2011 **Warren County, Kentucky, Sheriff's Department**
Deputy Sheriff

Bowling Green, Kentucky, Police Department
 2009 – 2011 Advanced Peace Officer

2008 National Forensics Academy, Graduate – Session XXII

2007 – 2011 Advanced Crime Scene Investigator
 Responsibilities included investigating crime scenes by identifying, documenting, preserving, collecting, processing and interpreting evidence.

2005 – 2009 Peace Officer

TEACHING EXPERIENCE

Campbellsville University

Civil Liberties, 3 sections*
 Court Process & Procedures, 7 sections*
 Criminal Justice Administration, 1 section
 Family Violence, 3 sections
 Internship, 3 sections
 Introduction to Forensics, 2 sections
 Juvenile Justice in America, 1 section*
 Police Administration & Management, 7 sections*
 Police Operations & Programs, 3 sections*
 Sociology of Deviant Behavior, 8 sections*
 Terrorism Studies, 1 section
 Victimology, 4 sections*

University of Louisville

Investigative Interviewing & Testimony, 2 sections+

Daymar College

Criminal Investigations, 1 section
 Criminal Law, 1 section
 Criminal Psychology, 1 section
 Criminology, 1 section
 Introduction to Law & Paralegal Studies, 2 sections
 Rules of Evidence, 1 section
 Terrorism & Homeland Security, 1 section
 White Collar Crime, 1 section

* Course developed and delivered online
 + Course created, developed and delivered online

AWARDS AND HONORS

2014 Campbellsville Universities' online Associate Degree in Criminal Justice Administration was ranked fourth in the country by The Best Schools. This ranking was based on program quality, courses offered, student rankings, and other criteria. I developed seven courses, assisted with coordination and taught in this program.

SERVICE

Professional Service

2013 – 2014 President, Kentucky Peace Officers' Association

2013 – 2014 Council Member, Kentucky Law Enforcement Council

- 2012 – Present Member, Supporting Heroes Law Enforcement Memorial Team
- 2012 – Present Guest Evaluator, Kentucky Crisis Intervention Team, Louisville Metro Police Department Training Academy
- 2012 – Present Instructor, Concealed Carry Deadly Weapons, Commonwealth of Kentucky
- 2011 – 2013 Vice President, Kentucky Peace Officers' Association
- 2009 – 2011 Advisor, Bowling Green Police Department Explorer Post #114
- 2006 – 2012 Member, Kentucky Crisis Intervention Team Advisory Council, Region 4

Academic Service

- 2013 Developed Criminal Justice Administration program recruitment materials, Campbellsville University
- 2012 – Present Member, Security Committee, Campbellsville University
- 2012 Presentation to Campbellsville University faculty on synchronous learning in online environments
- 2011 – Present Site Coordinator, Bachelors in Criminal Justice Administration, Campbellsville University's Louisville Education Center
Responsible for recruitment and academic advising of Criminal Justice students as well as program leadership including planning and implementing all program details including curriculum management, recruiting, hiring, mentoring and coordinating adjunct faculty.
- 2011 – 2013 Assistant Coordinator, Online Associates in Criminal Justice Administration, Campbellsville University
Responsible for course development, implementation of program and coordination of faculty teaching within the program
- 2011 Developed an agreement between the Kentucky Department of Criminal Justice Training and Campbellsville University to offer collegiate educational credit for Basic Law Enforcement Training Certification

PROFESSIONAL AFFILIATIONS

Academy of Criminal Justice Sciences
Fraternal Order of Police

International Association of Identification
Kentucky Peace Officers' Association
Southern Criminal Justice Association

REFERENCES

Dr. Richard Tewksbury
Professor
Department of Justice Administration
University of Louisville
Louisville, Kentucky
(502) 852-6567
tewks@louisville.edu

Dr. Deborah G. Keeling
Associate Dean for Faculty Affairs
College of Arts and Sciences
University of Louisville
Louisville, Kentucky
(502) 852-0370
deborah.wilson@louisville.edu

Dr. Jacquelyn Sandifer
Emerita Professor
Department of Criminal Justice Administration
Campbellsville University
Campbellsville, Kentucky
(270) 789-7796
jlsandifer@campbellsville.edu

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