ENVIRONMENTAL CRIME AND THE BEHAVIOR OF LAW

by

MATTHEW JOHN-WILLIAM GREIFE

(Under the Direction of Mark Cooney)

ABSTRACT

In his book The Behavior of Law, Donald Black articulated a general theory of law. Generally speaking Black argues that law – as a quantifiable variable – travels within social time and space. The amount of law and the direction it travels in can be predicted by the overall social structure law is being used to manage. Scholars have applied Black’s theory to a multitude of contexts such as assault and murder. Nobody has applied Black’s theory to corporations. This thesis represents the first attempt of a researcher to apply Black’s theory of law to prosecutions against corporations for violation of environmental criminal statutes. Further, this thesis represents the first attempt by researchers to understand and predict the punitiveness of punishments assessed against corporations prosecuted for violation of environmental criminal statutes. This thesis finds strong support for Black’s theory.

INDEX WORDS: Environmental Law, Environmental Crime, Corporate Crime, Behavior of Law, Pure Sociology, Punitiveness of Fines
ENVIRONMENTAL CRIME AND THE BEHAVIOR OF LAW

by

MATTHEW JOHN-WILLIAM GREIFE

B.A., Colorado State University, 2007

J.D., Whittier Law School, 2010

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment
of the Requirements for the Degree

MASTER OF ARTS

ATHENS, GEORGIA

2014
ENVIRONMENTAL CRIME AND THE BEHAVIOR OF LAW

by

MATTHEW JOHN-WILLIAM GREIFE

Major Professor: Mark Cooney
Committee: Justine Tinkler
            Tom McNaulty

Electronic Version Approved:
Maureen Grasso
Dean of the Graduate School
The University of Georgia
May 2014
DEDICATION

This thesis is dedicated to my friend, mentor and fellow non-conformist Jerry Venor who convinced me to be something more than “just a cop.”
ACKNOWLEDGEMENTS

First, I would like to thank my friend and colleague Paul Stretesky who gave me the idea to investigate environmental hazards and crimes. Second, I would like to thank my major professor Mark Cooney and committee members Tom McNulty and Justine Tinkler for their insight, guidance and support.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>viii</td>
</tr>
<tr>
<td><strong>CHAPTER</strong></td>
<td></td>
</tr>
<tr>
<td>1 INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>2 THEORETICAL PARADIGM</td>
<td>6</td>
</tr>
<tr>
<td>3 LITERATURE REVIEW, DATA AND METHODS</td>
<td>24</td>
</tr>
<tr>
<td>4 ANALYSIS</td>
<td>45</td>
</tr>
<tr>
<td>5 CONCLUSIONS, IMPLICATIONS AND LIMITATIONS</td>
<td>69</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>73</td>
</tr>
<tr>
<td><strong>APPENDICES</strong></td>
<td></td>
</tr>
<tr>
<td>A APPENDIX A</td>
<td>76</td>
</tr>
<tr>
<td>B APPENDIX B</td>
<td>77</td>
</tr>
<tr>
<td>B APPENDIX C</td>
<td>78</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 4.1</td>
<td>Vertical Dimension - Felonies</td>
<td>43</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>Vertical Dimension - Misdemeanors</td>
<td>46</td>
</tr>
<tr>
<td>Table 4.3</td>
<td>Cultural Dimension - Felonies</td>
<td>48</td>
</tr>
<tr>
<td>Table 4.4</td>
<td>Cultural Dimension - Misdemeanors</td>
<td>50</td>
</tr>
<tr>
<td>Table 4.5</td>
<td>Horizontal Dimension – Felonies (Employees)</td>
<td>52</td>
</tr>
<tr>
<td>Table 4.6</td>
<td>Horizontal Dimension – Misdemeanors (Employees)</td>
<td>53</td>
</tr>
<tr>
<td>Table 4.7</td>
<td>Horizontal Dimension – Felonies (Years in Business)</td>
<td>54</td>
</tr>
<tr>
<td>Table 4.8</td>
<td>Horizontal Dimension – Misdemeanors (Years in Business)</td>
<td>55</td>
</tr>
<tr>
<td>Table 4.9</td>
<td>Organizational Dimension - Felonies</td>
<td>56</td>
</tr>
<tr>
<td>Table 4.10</td>
<td>Organizational Dimension - Misdemeanors</td>
<td>58</td>
</tr>
<tr>
<td>Table 4.11</td>
<td>Normative Dimension – Felonies and Misdemeanors</td>
<td>59</td>
</tr>
<tr>
<td>Table 4.12</td>
<td>Ordered Logit Regression Analysis</td>
<td>64</td>
</tr>
<tr>
<td>Table 4.13</td>
<td>Ordered Logit Regression Analysis and Overall Social Status</td>
<td>66</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Page

Figure 2.1: Four Styles of Social Control ................................................................. 13

Figure 2.2: The Five Dimensions of Social Space .................................................. 14
CHAPTER 1
INTRODUCTION

When corporations violate laws that protect the environment they are punished with administrative, civil or criminal monetary sanctions. In a perfect world when the government brings law upon its citizens for the same crime(s) there should be no variation in the outcome. However as we all know that is not the case. Some people will get more jail time than others for the same crime. Other people will receive larger monetary fines than others for the same crime. The same holds true for corporations. Because corporations cannot be jailed their punishments are always monetary in nature. Whether the fines are administrative, civil or criminal in nature some corporations will receive larger fines for the same offense than other corporations. For example, in the cases of *U.S. v. Southwest Plating Company* and *U.S. v. Spencer Environmental Inc.* both corporations were prosecuted under 42 USC § 6928(d)(2)(A) for storing regulated chemicals without a permit. Theoretically, both corporations should receive the same fine. However, *Southwest Plating Company* only received a fine of $30,324 while *Spencer Environmental Inc.* received a fine of $150,000. Why the different results?

Traditional legal theories would tell us that the differences in outcomes are due to one crime being more severe than the other. Ergo, the more severe crime will receive the higher fine. We would expect Spencer Environmental’s offense to be more severe than Southwest Plating Company’s offense because Spencer received the higher fine. However, the facts do not seem to support this conclusion. Spencer Environmental was prosecuted for storing used motor oil that leaked out of storage barrels while Southwest Plating Company stored “coercive wastes” that
leaked out of barrels used for storage. In both cases, no people were alleged to be hurt and no property belonging to a 3rd party was damaged. Further, none of the leaked material was alleged to damage the environment. The main distinguishing fact is that Southwest Plating was alleged to have ordered employees to dump coercive wastes down a drain before they began storing the waste illegally. The facts lean to suggesting Southwest Plating committed the more severe hazard. Why the outcomes vary is anyone’s guess at this point. Therefore traditional legal reasoning is woefully inadequate to explain the variance between the two cases discussed above.

Today, the law and economics literature seems to be the dominant method for legal scholars and practitioners to explain variation within the law. Law and economics theory is used to explain the construction and application of a wide variety of administrative, civil and criminal laws. Specific to criminal law, law and economics sets out to determine if the criminal justice system in general makes optimal decisions by minimizing the social losses resulting from criminal offenses and at the same time promote the greatest amount of social good through an optimal allocation of resources (Becker, 1968). In other words – is the criminal justice system acting efficiently by deterring the greatest amount of crime while using the smallest amount of resources (Posner, 1985)?

Chapter 2 will devote more time to the law and economics discussion – for now a quick explanation will suffice as to why law and economics analysis is inappropriate for this analysis. First, the data used in this thesis cannot possibly determine if environmental criminal laws are efficient or the system is optimally allocating resources to combat environmental crime. Just to start one would need data that is not readily available such as the operating budgets of regulating agencies, how much lawyers and investigators are paid, what the actual monetary cost of an environmental crime is and the like. The complications of gathering this information
notwithstanding this thesis is not interested in determining if the agencies enforcing environmental criminal laws are operating efficiently. I am interested in explaining outcomes.

Second, law and economics theory relies heavily upon principals of deterrence theory in its attempt to determine optimal decision making and efficiency (Posner, 1985). Crudely speaking, law and economic reasoning presumes criminals to be rational actors looking to maximize wealth or happiness and thus the likelihood of being caught for criminal behavior must be high and punishments need to be set to a point that is painful enough for rational actors to decide not to engage in crime because the punishment is more costly than the benefits received from the crime (Posner, 1985). At first glance critics would argue that the data in this thesis should be used to analyze deterrence theory. However, the data in this thesis does not lend itself well to a deterrence theory approach. Take the two cases discussed above. Spencer Environment has yearly revenue of $450,000 but received a fine of $150,000 while Southwest Plating has yearly revenue of $2,055,000 and received a fine of $30,324. On its face the $150,000 fine seems more severe and thus a strong deterrent. However, there is no reason the $30,324 fine is any less of a deterrent. How do we know if the CEO of Southwest Plating did or did not consider the smaller fine to be incredibly severe? How do we know or not if the CEO of Spencer Environmental blew off the $150,000 fine? Deterrence theory is in a way an attempt to find the right temperature of oatmeal – not too hot or too cold but just right. The above punishments do not seem to meet the objective of finding just the right amount of punitiveness – in fact the fines seem backward seeing as Southwest Plating seemed to commit the more factually severe crime. Law and economics using deterrence theory hypotheses has no explanation for such awkward outcomes found in this dataset.
This thesis will use the theoretical paradigm pure sociology in its attempt to explain the variation in outcomes of criminal prosecutions against corporations committing environmental crimes. The theory of pure sociology will be described with greater detail in Chapter 2. That said, pure sociology argues that all social behavior can be viewed geometrically (Black, 1998) and all social behavior has a particular social structure. Social structure, or social geometry, refers to social behavior’s multidimensional location and direction within social space (Black, 1998). Social behavior’s location within social space is determined by 5 dimensions that make up social space. The 5 dimensions of social space are: (1) The vertical dimension, (2) the horizontal dimension, (3) the cultural dimension, (4) the normative dimension and (5) the organizational dimension (Black, 1976). Legal conflict is an example of social behavior (Black, 1976). The 5 dimensions determine the social structure of legal conflict and it is the location of social structure within social time and space that will predict the outcomes in legal conflicts. This is a very brief description but it serves a purpose – it is important that you the reader understand social life is not linear - it is geometric.

Chapter 3 is dedicated to introducing the relevant literature and methods used in this thesis. First, chapter 3 will present a brief literature review. To date there are no studies analyzing prosecutions of corporate defendants for environmental crimes. There are four studies which analyze the outcomes of civil litigation against corporate defendants for environmental violations (Atlas, 2001; Lavelle & Coyle, 1992; Lynch, Stretesky & Burns, 2004; Ringquist, 1998). However, these studies were all done with an eye towards environmental justice concerns. These studies were not intended to fully explain variation in outcomes.

Second, Chapter 3 will discuss the methods used in this thesis. This thesis uses both qualitative and quantitative methods of analysis. Qualitatively, this thesis will compare cases
with similar fact patterns and use pure sociology to explain the variance in outcomes. The quantitative analysis uses an ordered logistic regression (“OLR”) and shows the case outcomes are generally in the directions predicted by pure sociology and the variables measuring the 5 dimensions of social space are often highly significant.

Chapter 4 will present the findings of this thesis. The general findings are straightforward: this thesis provides empirical support suggesting pure sociology explains the variance between outcomes when corporations are prosecuted for criminal violations of environmental laws. In other words, the results of this thesis tell us why the outcomes in the cases of *U.S. v. Southwest Plating Company* and *U.S. v. Spencer Environmental Inc.* are different.

Finally, Chapter 5 presents this thesis’ conclusion. In general this thesis will describe paths for future research, policy implications this research may have and the limitations of this thesis. Further, this thesis argues that researchers should continue to use the pure sociology paradigm when studying outcome variation in legal actions against corporations for violation of environmental laws.
CHAPTER 2
THEORETICAL PARADIGM

Introduction:

This chapter introduces the theoretical paradigm of pure sociology. Once the pure sociology theory has been presented this chapter will explain why law and economics theory is not used. This chapter will then conclude with the argument that pure sociology is the most appropriate theoretical approach to analyze the data in this thesis.

What is Pure Sociology?

Pure sociology is a general sociological paradigm distinctly unique from earlier sociological paradigms because it views social life geometrically and dispels with the elements of psychology, purpose and people as units of analysis (Black, 1995). Pure sociology synthesizes earlier sociological theories into a single paradigm creating a multidimensional way to view social behavior (Black, 1995). Pure sociology holds that all aspects and concepts of social life can be explained by its social structure - social structure being social behavior’s location and direction within multiple dimensions of social space (Black, 1998).

Specific to this thesis is the concept of conflict. Conflict is the clash between right and wrong (Black, 1998). A conflict’s social structure predicts the method of management and outcome of the conflict. For example, a person could simply ignore behavior leading to conflict (e.g. say nothing to the person talking on the phone in a movie theatre). Conflict in some situations may be managed through crime (Black, 1983) – instead of ignoring the person on the phone you could shoot the person on the phone. Other conflicts are managed through law. Law
as a method of conflict management brings its own questions. For instance why will law be used as a method of conflict management in one instance and not another? Further, why do outcomes in legal cases vary even when the facts of cases are similar? These questions regarding the use of law in conflict management can be addressed by pure sociology.

As I stated earlier, pure sociology is unique because it views the social world geometrically and it discharges the elements of psychology, purpose and people as a unit of analysis. Therefore, the next two subsections will develop these two aspects of pure sociology.

**Discharging of Psychology, Purpose and People from Sociology:**

When a person suffers from obesity the best cure is to discard the unnecessary elements of their diet such as candy, soda and red meat. Pure sociology is an attempt to trim the fat and focus on what sociology has always meant to: social life. To accomplish this goal pure sociology discards the elements of psychology, purpose (i.e. teleology) and people.

Pure sociology is a general social theory that is simple, original and testable (Cooney, 2009: 30). The simplicity and originality are found in testable propositions which can be used to predict and explain any and all aspects of human social behavior without any reference to psychology, purpose or people. Take for example the proposition that *downward law is greater than upward law* (Black, 1976: 21). The proposition does not concern itself with the psychological state of those involved with law or what their motives are. The proposition focuses solely upon law as the unit of analysis – not people. A researcher is left only with variables that are observable and quantifiable when testing the direction and quantity of law.

Psychological states, motivations and purposes for the pure sociologist are unobservable and thus unquantifiable. Because these are big changes in sociological research, a bit more detail as to why psychology, purpose and people are left out of pure sociology is warranted.
Psychology:

The vast majority of classical and modern social theories rest upon psychological premises (Black, 1995). The use of psychology in sociology is problematic due to the inherent difficulty of measuring objectively human subjectivity. How do we truly know we are measuring someone’s mental state? Are we ever really sure of our own mental state? These are not rhetorical questions. Many of us can look back at a situation or event in our own lives and wonder “what was I thinking?”

The difficulty of measuring subjective reasoning in an objective manner is manifested within criminal law. Criminal law requires proving the subjective intent of a criminal defendant (e.g. was it the defendant’s “conscience objective” to commit crime). The difficulty of proving subjective intent is well understood by prosecutors and defense lawyers. It has been argued the difficulty in proving intent forces prosecutors towards other methods for concluding prosecutions such as overcharging, lying and even falsifying evidence (Langbein, 1978). Difficulty in proving mental status translates into virtual impossibility when it comes to objectively measuring mental states.

Take the following question as another example: Is the CEO of a corporation happy? There are many degrees of “happy.” Happy for one person might be slightly sad for another. The reality that “happy” can mean different things to different people means a researcher is taking on an almost impossible task. If the definition of “happy” is basically a moving target then objectively measuring happiness is just not possible. The definition of happy is always subjective and therefore cannot be measured with any degree of objective certainty.

The psychology of actors (e.g. mental state) is not a relevant inquiry for pure sociology (Cooney, 2009). “Psychology only explains psychology” (Abramowitz, 2010). For sociology to
be a science of social life it must cease speculating about the contents of the human mind (Black, 1998). Social life has no psychology of its own and mental states do not logically imply action (Cooney, 2009). Therefore psychology within pure sociology necessarily disappears (Black, 2000). The disappearance of psychology is beneficial because it allows sociologists to focus on outward manifestations of behavior in the social world and avoid the “uncertainty lurking at the center of psychological theories” (Cooney, 2009).

Teleology/Purpose:

Teleology attempts to understand human behavior as a means to an end. Human behavior is explained as a pursuit of goals or preferences (Black, 1995). Teleology assumes that the goals or preferences of people explain how people behave (Black, 1995). Teleology however is metaphysical or stated otherwise – unobservable (Black, 1998). Put more simply, we can never really know the goals or motivations of a person.

For example, say a corporation wants to bring a libel suit against an individual who wrote a bad review of the company on yelp.com. The corporation might publicly state that the goal of the lawsuit is simply to get the review taken down. However, nobody can really know if that is true or not. It is just as likely the corporation is bringing the lawsuit so as to ward off other individuals who might write a bad online review of the company. Maybe the corporation wants the lawsuit brought as a way to extract vengeance upon the reviewer. It could be a combination of all three. The point is simple – it is impossible to know for sure. Therefore, teleology/purpose is not able to be objectively quantified. Like the pitfalls of psychology, pure sociology discards the unobservable in favor of observable outward human behavior.

People:
For pure sociology the presumption is that social life behaves, not people (Black, 1976: 1). Thus ‘people’ are not the center of the social universe because social life is greater than any person and cannot be understood as the behavior of people (Black, 1998). The unit of analysis in pure sociology is not a person, government, or organization. The unit of analysis is social life and in particular behavior of social life - in other words social variation (Black, 1995).

Take for example when a judge accepts a plea bargain from a corporation that has violated an environmental criminal statute. A pure sociologist does not see the situation as a government official making a decision but sees law behaving; put more simply people are the agents of social life, not the masters of it (Cooney, 2009: 24).

Social Geometry:

As stated earlier, pure sociology - developed by Donald Black - is a new way of thinking about social life (Cooney, 2009) because it conceptualizes the social world geometrically. Pure sociology looks primarily at the social structure surrounding social behavior when predicting outcomes of conflicts (Black, 1998). Social structure, or social geometry, refers to social behavior’s multidimensional location and direction within social space (Black, 1998). Social behavior’s structure is determined by its location within 5 dimensions that make up social space. The 5 dimensions of social space are made up of all major variables that sociologists have used over the years to explain social life (Cooney, 2009). The 5 dimensions of social space are: (1) the vertical dimension, (2) the horizontal dimension, (3) the cultural dimension, (4) the normative dimension and (5) the organizational dimension. The concept of legal conflict and the 5 dimensions of social space will be discussed in more detail in the next section.
Legal Conflict:

As previously stated conflict is social behavior. Conflict has a social structure and a location in social space determined by the 5 dimensions of social space. A conflict’s social structure will predict the style and method of conflict management and the outcome. Some conflicts will attract law as a method of conflict management while others attract no law. Some conflict will attract a style of law that is punitive in nature while other conflicts will attract a style that is more therapeutic.

When conflict does attract law the style and quantity of law will vary. Some conflicts within law will be handled by arbitration or mediation while others will be handled by litigation. Some cases will go to trial while others will be resolved without a trial. These variations within law are explained by the social geometry of cases. The social geometry of cases is explained by the argument that law behaves.

The Behavior of Law:

In 1976 Donald Black published his landmark book The Behavior of Law (Black, 1976). The Behavior of Law presents a series of testable propositions which predict the quantity of law and the style of law in legal cases (Black, 1976; Cooney, 2009). These predictions can be made because law is a quantifiable variable and therefore visible within social space (Black, 1976).

Quantity of Law:

Law is governmental social control – it is how government responds to deviance (Black, 1976). Law is a quantitative variable that increases and decreases depending upon its location in and movement through social time and space (Black, 1976). To quantify law think of an arrest as more law than no arrest; that filing a civil lawsuit is more law than not filing a civil lawsuit;
that being found guilty at trial is more law than being found not guilty at trial; receiving a hundred-million dollar fine is more law than receiving a million dollar fine (Black, 1976).

*Style of Law:*

The style of law will vary across time and space (Black, 1976). The styles of law are: (1) penal, (2) compensatory, (3) therapeutic and (4) conciliatory. Figure 1 below provides a full table with descriptions of each style of law in further detail. The American criminal justice system is the best example of the penal style of law while the compensatory style of law is best thought of as the American civil justice system. The style of law varies by the social geometry of a legal case. Within social space, the more social distance there is between the parties to a legal conflict the more likely a legal case will attract the penal style of law. As social distance between the parties to a legal case decreases the more likely the style of law will move toward the compensatory, therapeutic or conciliatory styles of law.

Take a fist fight between neighbors for example. If the neighbors are socially distant from one another – they rarely speak to each other, their kids do not play with each other, there is a wealth gap between the neighbors and the neighbors are of different ethnicities the greater the probability is the fist fight will be handled as a crime. However as the social distance between the neighbors decreases – they interact with each other more often than not, have a similar income, their kids play together, and they go to the same church, and the like the more likely the fist fight will be handled as a civil dispute or with no law at all.
Figure 2.1: Four Styles of Social Control\(^1\)

<table>
<thead>
<tr>
<th>Standard (pure form)</th>
<th>Penal</th>
<th>Compensatory</th>
<th>Therapeutic</th>
<th>Conciliatory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prohibition of certain conduct and enforces prohibitions with punishment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guilt or innocence</td>
<td>Debt</td>
<td>Need for help</td>
<td>Conflict between people</td>
</tr>
<tr>
<td>Problem</td>
<td>Done by a group; police and prosecutors generally</td>
<td>Victim – person who is owed money or service</td>
<td>Deviant – robber, drug addict, etc...</td>
<td>Disputants</td>
</tr>
<tr>
<td>Initiation of case</td>
<td>Offender or defendant</td>
<td>Debitor – person who did not fulfill some obligation</td>
<td>Victim themselves to some personal problem</td>
<td>Disputant</td>
</tr>
<tr>
<td>Identity of deviant</td>
<td>Punishment (zero sum game)</td>
<td>Payment (zero sum game)</td>
<td>Help given</td>
<td>Resolution of conflict</td>
</tr>
</tbody>
</table>

It is important to note that the styles of law described in Figure 1 are in their pure form. In legal conflicts the reality is styles of law will combine with one another (Black, 1976: 5). However, even if one style does not dominate a legal case it is still possible to identify the elements of each style of law present in a legal case (Black, 1976: 5).

Because this thesis only deals with completed criminal prosecutions of corporate defendants the penal style of law is the prevalent style of law. Nonetheless within the penal style of law the quantity of law will vary – some defendants will receive steeper monetary fines than others or longer probation periods than others.

Location and Direction of Law:

The style and quantity of law will vary within social time and space (Black, 1976). The variance of law is explained by its social geometry which is determined by the vertical, horizontal, cultural, normative and organizational dimensions. These 5 dimensions of social space contain within them every sociological variable ever discovered and used to describe social life. Figure 2 below gives a brief overview of each dimension.

---

\(^1\) Figure 1 can be found in Donald Black’s The Behavior of Law, page 5.
Figure 2.2: The Five Dimensions of Social Space.

<table>
<thead>
<tr>
<th>SOCIAL LIFE VARIABLES</th>
<th>Stratification</th>
<th>Morphology</th>
<th>Culture</th>
<th>Organization</th>
<th>Social Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASPECTS</td>
<td>Vertical aspect</td>
<td>Horizontal aspect</td>
<td>Symbolic aspect</td>
<td>Corporate aspect</td>
<td>Normative aspect</td>
</tr>
<tr>
<td>GENERAL PROPOSITIONS</td>
<td>Downward law varies directly with vertical distance</td>
<td>Law is greater in a direction toward more relational distance and less integration.</td>
<td>Law is greater in a direction toward less culture than more culture.</td>
<td>Law is greater in a direction toward less organization than more organization</td>
<td>Law is greater in a direction toward less respectability than toward more respectability</td>
</tr>
<tr>
<td>DEFINITION</td>
<td>Uneven distribution of wealth among people</td>
<td>The distribution of people in relation to one another (i.e. division of labor, social integration, intimacy and networks of interaction)</td>
<td>What is right or wrong, what is truth, what is beautiful, and level of education among people</td>
<td>Capacity for collective action by individuals or any organization(s).</td>
<td>Social or legal determination of which groups or persons are deviant and which groups or persons are respectable or not respectable.</td>
</tr>
</tbody>
</table>

Vertical Dimension:

Stratification is the vertical aspect of social life and can explain both the style and quantity of law (Black, 1976:11). Stratification is the uneven distribution of goods such as food, water, shelter and money – all of which vary in magnitude (Black, 1976: 11). It is recognized that wealthier individuals have greater advantages in law – therefore stratification can explain both the style and quantity of law (Black, 1976: 12). The first testable proposition within the vertical dimension is that **law varies directly with stratification** (Black, 1976: 13).

Law has a vertical location and direction (Black, 1976: 16-17, 21-25). The more wealth a person or group has the higher social rank they have and thus law has a high vertical location (Black, 1976: 17). When law is brought by a person or group of high social status against a person or group of low social status law then begins to move downward (Black, 1976). A civil complaint by a wealthy man against a poor man means law has a downward direction. A criminal prosecution by the government against a corporation or a citizen means law has a

A second testable proposition then is: *Downward law is greater than upward law* (Black, 1976: 21). Further, the greater the distance law has to travel in a downward direction; the greater the quantity of law will be (Black, 1976: 24). Thus the third testable proposition is: *Downward law varies directly with vertical distance* (Black, 1976: 24). This proposition means that when law is moving in a downward direction the greater the distance law has to travel the quantity of law will correspondingly increase.

This thesis tests Black’s proposition that downward law varies directly with vertical distance. Chapter 3 will state the hypothesis directly but for now it suffices to say that Black’s proposition that law varies directly with vertical distance predicts that corporations with higher revenues have greater vertical rank. Therefore when corporations with higher vertical rank are prosecuted they will receive less law because law is traveling a shorter distance than for corporations with lower revenues and social rank.

*Horizontal Dimension:*

The horizontal or morphological dimension of social life is the distribution of people in relation to one another (Black, 1976: 37). The horizontal dimension includes things like the division of labor between people, networks of interaction, integration and intimacy (Black, 1976: 38). Like the vertical dimension, law in the horizontal dimension has both a location and a direction in social space (Black, 1976: 48-49). Law’s location and direction in the horizontal dimension is determined by an actor’s degree of integration into social life and the amount of intimacy between actors (Black, 1976: 48-50; Cooney, 2009: 157).
Integration is the radial location of people or groups in social life (Black, 1976: 48; Cooney, 2009: 92). As people engage with the lives of each other they participate in social life (Black, 1976: 48). When thinking of integration and radial location it is best to think of social life as a circle (Cooney, 2009: 92). The closer to the center of the circle an actor gets the more integrated they are in social life; the closer to the borders of the circle an actor gets the more marginalized from social life the actor becomes (Cooney, 2009: 92). When an actor is less integrated and commits an offense against a more integrated actor law can be thought of as having a starting location closer toward the center of social life (e.g. the center of the circle) and moves in a direction toward the border of social life (e.g. the edge of a circle). The testable proposition derived is: *Law varies directly with integration* (Back, 1976: 48). Thus the more integrated an actor is the more law they will have. Further, when law moves from the center of the social circle to the edge its effect is similar to the vertical dimension. Like with the vertical dimension, the greater distance law has to travel when moving towards the edges of social life the quantity of law will correspondingly increase.

In criminal law, the state essentially takes the place of the victim when it brings prosecutions against its citizens and corporations. Therefore, for this thesis I presume that when a corporation violates an environmental criminal law the offense is committed against the government. Government is the center of social life. Thus, as a corporations integration decreases, the quantity of law it receives increases. The hypothesis specific to integration will be given in Chapter 3.

Intimacy is the relational distance between parties of a lawsuit (Black, 1976: 41). When people are intimate with one another (e.g. close friends and family) law is inactive but the
quantity of law will increase as relational distance increases (Black, 1976: 41). The testable proposition that is derived is: *Law Increases with Relational Distance* (Cooney, 2009: 157).

When a corporation has a greater level of intimacy with the government, that corporation will receive less law when it violates environmental crime statutes than a corporation with a lesser level of intimacy with the government. The hypothesis specific to intimacy will be presented in Chapter 3.

*Normative Dimension:*

Social control is the normative aspect of social life; it defines and responds to deviant behavior (Black, 1976). As previously stated, law is governmental social control (Black, 1976). Therefore, the more law a person or group is subject to the less respectable the person or group will be (Black, 1976: 111). Thus the following proposition is derived: *Law varies directly with respectability* (Black, 1976: 112). This simply means the more respectable a group or person is the less law will be applied than to a group or person of less respectability.

Respectability has both a location and direction in social space. Status in the normative dimension is similar to that of the vertical dimension. Actors that have never violated the law in the past, conform to social norms and the like will be considered highly respectable and hold high normative status. Like vertical status the direction of law is opposite of the deviant act, thus the following proposition: *Law is greater in a direction toward less respectability than toward more respectability* (Black, 1976: 114). Therefore, an offense by a less respectable actor against a more respectable actor is of greater severity than an offense by a more respectable actor against a less respectable actor. Further, in the scenario of an offense by an actor of low respectability against an actor of high respectability the greater the distance between high and low normative statuses law has to travel, the greater the amount of law will be.
For this thesis, the government is the most respectable actor. Corporations that comply with environmental laws – such as applying for permits and paying the appropriate fees rather than carry on business without a permit – will be considered among the more respectable corporations. Further, corporations that have prior violations of environmental laws whether administrative, civil or criminal are going to be considered less respectable than corporations with no prior violations. A corporation with only one prior violation of environmental law is going to be more respectable than a corporation with multiple violations of environmental law. The specific hypothesis will be given in chapter 3; for now it is enough to say less respectable corporations are the ones who are more likely to receive more law.

*Cultural Dimension:*

The cultural dimension is made up of the symbolic aspects of social life (Black, 1976: 61). Cultural aspects are things such as what is good or bad, truth, and what is beautiful (Black, 1976: 61). Culture can vary in its quantity, frequency, conventionality and diversity (Black, 1976). Like the previous dimensions the following proposition under the cultural dimension is derived: *Law varies directly with culture* (Black, 1976: 63). Stated differently – the more culture found in society the more law will be found within society.

Culture, like the other dimensions, has a location and direction within social space (Black, 1976: 65). Like the vertical, horizontal and normative dimensions, actors possessing a lot of culture (e.g. more mainstream or culturally prominent) will have a high cultural status. When an actor with low cultural status commits an offense against an actor with high cultural status law then moves in a fashion similar to the vertical, horizontal and normative dimensions. The proposition here is: *Law is greater in a direction toward less culture than more culture* (Black, 1976: 65). Stated differently, actors who violate the law and have less culture will
receive a greater quantity of law than those with more culture. Further, the quantity of law will increase when the distance law between a law violator with low amounts of culture and a victim with high culture.

For the purposes of this thesis, the government possesses the most amount of culture. When speaking of corporations it is suffice to say that corporations that are more culturally prominent – or more simply have more culture – will receive a lesser quantity of law.

Organizational Dimension:

Organization is the corporate aspect of social life, the capacity for collective action (Black, 1976: 85). Organization is a quantitative variable and can be measured by the number of administrative officers in a bureaucracy or corporation, the centralization of decision making and the quantity of collective action itself (Black, 1976: 85-86). Therefore, the following proposition applies: Law varies directly with organization (Black, 1976: 86).

Collective action is a type of status similar to vertical status, cultural status and normative status (Black, 1976: 92). Further, law moves in a fashion similar to its movements in the vertical, cultural and normative dimensions. Thus law will move in a direction based upon organizational status (Black, 1976: 92). The proposition here is: Law is greater in a direction toward less organization than toward more organization (Black, 1976: 92). In other words – the more organized a bureaucracy or corporation is the less law it will receive.

For this thesis, there is no entity more organized than the government. In the scenario of a corporation committing a crime against the government law is going to be moving in an upward direction. The greater distance law travels upward the quantity of law will increase correspondingly. Therefore, corporations with the greatest number of corporate board members,
managers and the like will receive lesser quantities of law because law is traveling a shorter upward distance than with corporations who have less organization.

Taking all 5 dimensions together we see that law has a starting location within social space and from that location can move upward, downward, inward or outward. Further, the greater distance law has to travel when it begins its journey the quantity of law will increase or decrease correspondingly.

This geometric movement of law that is the centerpiece of pure sociology is an idea very different from the majority of legal theories. Especially so in regards to law and economics theory. Therefore, I want to address why pure sociology is being used as a theoretical approach rather than law and economics.

**Why Not Use Law and Economics:**

Law and economics has arguably become the most influential and prominent theory in legal scholarship (Posner, 2004). Law and economics professors enjoy top positions in law schools, use law and economics language in their lectures and law professors more commonly rely upon law and economics theory when engaging in legal research (Landes and Posner, 1993). Law and economics theory applies to every area of law (Stigler, 1992) including criminal law (Becker, 1968). Legal practitioners often use law and economics theory in a normative fashion, legal scholars argue that the same theories can be applied to all law – including criminal – in a positivist manner (Posner, 1979).

Law and economics applied to criminal law is straight forward. Specifically the question is: do the criminal laws promote efficiency by deterring the most amount of crime while expending the fewest amounts of resources (Becker, 1968; Ehrlich, 1996; Harel & Segal, 1999; Mungan, 2012; Posner, 1985)? While there are those arguing law and economics is a poor
theory for any social inquiry (Kelman, 1983) in general the theory does have its merits. However, the theory is not appropriate for this thesis.

Law and economics when applied to criminal law relies heavily upon deterrence theory (Cameron, 1988). Deterrence theory, in particular the idea of specific deterrence, requires data that somehow measures subjective processes (Harel & Segal, 1999). This thesis does not in any way measure subjective processes of corporate CEOs and officers. The only way to know if laws are deterring corporations from engaging in environmental crime is to know if the people running the corporation actually know the law exists and they run their business in a way that avoids the possibility of criminal sanctions. This would require actually interviewing corporate officers and managers as done in research by Makkai and Braithwaite (1994) and Simpson et al. (2013) and determine if the law as written or the knowledge of other corporations having been punished for environmental crimes, causes them to comply with law.

Further, if corporations have been punished for environmental law violations prior to the current prosecution the data does not allow for an inquiry as to why the corporation did not comply with law after the initial law violation. To do this detailed information about the prior actions needs to be derived rather than just a researcher knowing the number of prior violations a corporation has. Then the researcher would have to determine if the prior actions were severe enough to have a deterrent effect. The data in this thesis does not lend itself to this type of inquiry.

Finally, the data for this thesis does not have any information regarding how often government agencies are inspecting locations for possible violations of environmental law. In order to deter corporations from engaging in corporate crime the EPA needs to be inspecting locations with enough frequency that corporate officers will comply with the law to ensure they
pass inspections. The data in this thesis simply does not speak to this issue. Therefore, the law and economics theory while prominent is not a proper theory for analysis of the data in its current state.

**Conclusion:**

Pure sociology is the best available theoretical paradigm to analyze prosecutions against corporate defendants for environmental crimes. As the above discussion shows – pure sociology puts forward testable propositions allowing researchers to analyze legal outcomes without having to look at variables measuring psychology, teleology, or people.

Traditional legal theories simply argue that outcomes in cases are decided based upon their legal facts – this is widely recognized as too simplistic and incomplete a view. Legal Realists essentially argue that the outcomes in cases are tied to “real-world” concerns. Neither traditional legal theory or legal realism can explain the variation in legal outcomes – in fact variation is explained by arguing that the actors in the legal system are exercising discretion. Discretion is unseen – a subjective decision made on behalf of a police officer, lawyer or judge (Atkins & Pogrebin, 1978). The reality is that discretion is just a way of saying “we don’t know what causes variation in the law” (Cooney, 2009). In the case of law and economics – as discussed above – the data required to use the theory is just not available for analysis.

Therefore, pure sociology remains the best available theoretical paradigm – legal or sociological - for understanding variation within the law.
CHAPTER 3
LITERATURE REVIEW, DATA AND METHODS

Introduction:

With the theory of pure sociology in place it is now time to introduce the dataset being used for this chapter and give a detailed description of the prior studies that have examined legal outcomes against corporations for violations of environmental law. This chapter will start with the literature review. Second, this chapter introduces the data used in this thesis. Third, this chapter describes the dependent and independent variables. Fourth, this chapter lays out the hypotheses being tested. Finally, this chapter describes the analytical techniques used to analyze the data in this thesis.

Literature Review:

No study exists looking at legal outcomes for criminal violations of environmental laws. The studies analyzing penalties assessed against corporations for violation of environmental law are in the context of civil law and therefore only analyze civil penalties. This thesis applies pure sociology to the analysis of corporations for violations of environmental criminal laws.

The academic literature speaking to environmental criminal law revolves around public policy discussions rather than empirical research. Some scholars argue environmental criminal laws are unnecessary and unfair (see generally Lazarus, 1993; O’Hare 2001) while others believe environmental criminal laws are necessary and applied more fairly than critics would suggest (Brickey, 1995). The same debates surrounding environmental criminal law applies to
environmental civil and administrative law. However, environmental civil laws have been subject to some empirical research while environmental criminal law has been neglected.

There are four existing empirical studies analyzing legal outcomes involving corporations that violate civil environmental laws – all of which use an environmental justice theoretical paradigm for their analysis. The purpose of these studies was to determine if legal outcomes against corporations violating environmental civil laws were benefiting from violating laws in communities made up primarily of poor and minority citizens. In other words – were violations of environmental civil laws treated more punitively if they happened in affluent or white communities rather than poor or minority communities?

The findings of these studies are not on point for the purposes of this thesis. Nonetheless, they are worth reviewing if only to get an understanding of the types inquires and variables used by prior researchers. Understanding what prior researchers have done gives a better understanding of how this thesis truly advances the research in the realm of environmental law.

The NLJ Study:

In 1992 the National Law Journal published a series of articles alleging the EPA engaged in discriminatory practices through civil enforcement actions and the judicial system engaged in discriminatory practices by way of the judgments handed out to violators of environmental laws (Lavelle & Coyle, 1992). The NLJ articles, using a theoretical paradigm of environmental justice, marked the first time researchers analyzed legal outcomes against corporations that violated environmental laws. The NLJ articles suggested civil courts intentionally engaged in discrimination by handing out lighter civil fines and penalties to corporations that violated environmental laws in communities primarily made up of racial minorities and those of lower socioeconomic status (Lavelle & Coyle, 1992).
Specifically, Lavelle and Coyle (1992) found that average penalties imposed increased as the percentage of the population that was white and affluent in a specific zip code surrounding the violating facility increased. Penalties in white zip codes were found to be 46% higher than penalties in minority zip codes ($153,067 v. $105,028), and penalties in high-income zip codes were 53% higher than penalties in low-income zip codes ($146,993 v. $95,664).

The response to the NLJ articles was astonishing. The EPA created an internal review of its practices and now publishes annual public reports regarding concerns of environmental justice and enforcement. The DOJ has mimicked the EPA and also publicly reports on civil and criminal actions it takes, and how those actions are in furtherance of environmental justice concerns. Congress even launched an inquiry into the EPA and DOJ regarding civil and criminal law enforcement and case prosecution (Brickey, 1996).

*The Ringquist Article:*

Researches took note of the NLJ articles and undertook similar studies. The first major study to come out in the wake of the NLJ articles was conducted by Evan Ringquist in 1998. Ringquist cited many problems with the NLJ articles, such as their only selecting cases from 1985-1991, mixing penalties assessed by different statutes, and not controlling for outside variables that could affect the penalty outcome of a case (Ringquist, 1998, p. 1151). Sticking with an environmental justice theoretical paradigm Ringquist made the following methodological changes: (1) extend the timeline of cases analyzed from 1974 to 1991, (2) controlled for the political makeup of the zip codes environmental civil laws were violated, (3) controlled for the number of violations in each individual case, (4) controlled for the possible influence of the presiding judge over a case, and (5) controlled for the type of company that committed the
environmental violation – specifically was the corporation a fortune 500 company or not (Ringquist, 1998).

Notwithstanding the methodological improvements Ringquist found no evidence suggesting federal courts punished corporations more severely for violating environmental laws in communities made up primarily of poor and minority individuals (Ringquist, 1998, p. 1162).

The Atlas Article:

Following Ringquist, Atlas (2001) expanded on the shortcomings of the NLJ articles as well as provided a rather scathing review of the Ringquist article. Atlas further developed Ringquist’s critiques of the NLJ articles and noted that the NLJ articles did not take into account multi-location violations, did not use proper definitions of who is considered a minority, and did not attempt to determine if the monetary penalty administered in each case was in fact severe for that particular corporate violator (Atlas, 2003, pp. 658–659). Atlas suggested that the Ringquist article represents an improvement over the NLJ articles; however, he did criticize the Ringquist article for many reasons. First Atlas criticized Ringquist’s belief that judicial attributes will affect case outcome (Atlas, 2003, p. 643). Atlas correctly notes that the overwhelming majority of cases in the legal system, whether civil or criminal, are settled prior to trial; this is no different for environmental cases (Atlas, 2003). In fact the only real role a judge can play in the settlement of environmental cases is in the rejection of consent decrees – rejecting a consent decree is incredibly rare. Of the cases analyzed for the study only 8 of 544 consent decrees were rejected by the presiding judge (Atlas, 2003, p. 646).

Atlas went on to raise other criticisms of the Ringquist article. For example he claimed: (1) Ringquist’s using a variable to distinguish between DOJ and EPA attorneys was unnecessary because only EPA attorneys handle civil environmental claims, (2) the use of only prior civil law
violations against a corporation rather than using prior civil, administrative and criminal actions together, (3) the operationalization of the Fortune 500 companies variable was not properly done and in general irrelevant, and (4) the use of zip codes are improper when measuring community demographics (Atlas, 2003).

Atlas’s study hypothesized that (1) racial and economic characteristics do not affect penalties imposed on environmental offenders, (2) violation severity and individual factual situations are the major determinants of penalties, (3) the year a case ends affects the penalty in a positive manner (i.e., that as time has gone by, the EPA and DOJ have become more aggressive in enforcement and prosecution), (4) cases ending through litigation have higher penalties, and (5) penalties will be higher where more people reside near the location of the violation (Atlas, 2003, pp. 654–655).

Atlas found: (1) higher penalties were assessed in communities made up of minorities and the poor (2) the year a case ended was positively related to the penalty, (3) fully litigated cases had higher penalties than settled cases, and (4) penalties were higher in communities that were more densely populated (Atlas, 2003). Regarding violation severity, Atlas stated that his findings demonstrate hazard severity and individual case facts are the primary determinants of penalties against corporations violating environmental civil laws. In the end both Ringquist and Atlas came to the same conclusion: the empirical findings suggest minorities and the poor are not discriminated against by the courts.

*Lynch, Stretesky, and Burns Article:*

Following the Ringquist and Atlas articles Lynch, Stretesky, and Burns (2004) examined all U.S. petroleum refineries to determine if refineries that violated environmental laws in minority and low-income communities received smaller fines than those refineries that violated
environmental laws in white and affluent communities (Lynch et al., 2004). In general it was found that the mean penalty for noncompliance was lower in black census tracts than in white ones ($108,563 v. $341,590) and in low-income census tracts than in high-income ones ($259,784 v. $334,267) (Lynch et al., 2003). Lynch et al (2004) attempted to expand on the NLJ, Ringquist and Atlas findings and control for legal predictors of penalty amounts, specifically that penalty amounts should be directly related to legally relevant variables addressing the seriousness of the violations being penalized and the danger the refinery presents to society (Lynch et al., 2003; p. 426). Violations were considered severe if (1) the refinery fails to submit a major report, (2) the violations far exceed the permitted discharges, (3) the violations cause actual exposure or a substantial likelihood of actual exposure to hazardous waste, or (4) the refinery is a reckless violator that deviates substantially from the terms of a permit, order, or some other agreement with the EPA (Lynch et al., 2003, p. 428). The findings were that there was a negative relationship between violation seriousness and minority and low-income characteristics (Lynch et al., 2003). However, Lynch et al (2003) looks at civil violations within a specific industry rather than environmental law violations across the board.

At the end of the day these studies give no real insight into what social factors outside race or class have on determining outcomes for corporations that violate civil environmental laws – let alone criminal environmental laws. For instance none of the studies tell us if corporate revenue has an influence on outcomes – an odd omission considering 18 USC § 3572 et seq. (as well as all other environmental law statutes) states in both civil and criminal actions a corporation’s revenue must be taken into account when crafting fines. It is too easy for normative type theories such as environmental justice to miss these variables because they are concerned more with victim advocacy rather than explaining outcomes. Therefore a general
theory of law needs to be used when analyzing legal outcomes for corporations that violate administrative, civil and criminal environmental laws.

**Data:**
A likely reason researchers have neglected researching penalties assessed against corporations for environmental crime violations is because nobody has attempted to put together a dataset for analysis (Cohen, 1994). Anyone wanting to study anything regarding assessed penalties for violation of environmental criminal statutes must rely on publicly released data from the EPA and DOJ. All the agencies release are the total fines that have been levied for each fiscal year – there is not much anyone can do with such little information. Therefore, I had to create a dataset from scratch.

From 2005 to 2010 the Department of Justice prosecuted 249 corporations for violating environmental laws. Of the 249 prosecutions – 108 are analyzed in this thesis. The full dataset for this thesis was derived from the following three sources: (1) PACER, (2) ReferenceUSA and Dunn and Bradstreet corporate reports and (3) EPA ECHO database. Before discussing each source a brief description as to how the cases were selected and the databases used in this thesis is necessary.

All federal cases – criminal, civil, administrative and even bankruptcies – are filed in federal court electronically using the PACER system. All documents filed through PACER are available to the public. Any person can search the PACER website using names and case numbers to find a case. However, PACER does not allow for statute or boolean phrase searches. A researcher would spend a lifetime plugging in corporation names and looking through the results hoping to find environmental law violations. Thus doing an unguided search for prosecutions against corporations for environmental crimes in PACER is akin to landing an airplane while blindfolded.
In order to identify appropriate cases for analysis a freedom of information request was submitted to the EPA asking for a list of every case they forwarded to the DOJ for criminal prosecution. Prior to DOJ involvement the EPA investigates all possible violations of environmental law. The EPA is not permitted to prosecute crimes so it is up to the EPA to refer possible prosecutions to the DOJ. The DOJ has discretion to accept or decline prosecution – in cases of declination it is not uncommon for state agencies to prosecute in lieu of federal prosecutions. Of the 249 cases identified from the freedom of information act request 137 of the cases are not being analyzed because complete data could not be collected due to the following reasons: (1) The DOJ declined prosecution, (2) the corporate defendant was not locatable within the ReferenceUSA or Dun and Bradstreet databases or (3) information about the hazard could not be discerned from court documents or the EPA ECHO database.

**PACER:**

PACER is an online website where every document filed in a federal courthouse can be viewed and downloaded. For example if a corporation is sued in federal court for civil violations or prosecuted in federal court for criminal activities every single official court document connected to the case will be made available electronically through PACER. There are four specific documents printed off for every criminal prosecution analyzed in this thesis. The first document printed is the original criminal complaint/indictment. The second document is the plea agreements. The third document is the factual basis for the plea agreement (sometimes this is part of a plea agreement and not a separate document). The final document printed is the judgment (i.e. officially accepted plea agreement) or jury findings.

I obtained the court documents and specific information was taken from them. First, basic factual descriptions of the crime(s) were recorded so that comparisons between
corporations committing similar crimes can be made. Second, the number of crimes a
corporation was being prosecuted for was recorded in order to determine what the maximum
possible fine assessed against a corporation could be. Third, what the corporation agreed to in its
plea agreement was recorded – specifically to what counts did the corporation plead guilty to and
what was the fine recommended by the prosecutor. Finally, the judgment was used to see what
the actual fine assessed against the corporation was.

ReferenceUSA & Dunn and Bradstreet:

The ReferenceUSA and Dunn and Bradstreet databases contain detailed information
about corporate revenues, employees, management and corporate expenses. Over 14 million
corporations are listed in the ReferenceUSA and Dunn and Bradstreet databases. There is no
reason to doubt the accuracy of the information given by either of these sources.

For companies that have a profile with the ReferenceUSA or Dunn and Bradstreet
databases I recorded specific information. First, the overall corporate revenue was recorded. For
corporations that are subsidiaries of a larger corporation the revenue of the parent corporation
was recorded. The reason for this is based upon the following assumption: corporations that are
subsidiaries generally contribute all of their profits to the parent corporation and then it is the
parent corporation that determines what the subsidiaries operating budgets are. Thus, when a
fine is assessed against a corporation it is the parent corporation that usually pays the fine. While
this may not always be the scenario there is reason to believe it is very common. In the case of
Dist. LEXIS 20748 the court acknowledged a fine of $2,625,000 was appropriate because the
parent corporation of Magnesium Elektron Inc. would pay the fine on behalf of its subsidiary.
Public Interest, et al. (1995) was a civil case but the principal articulated still applies to criminal law.

Second, corporate profiles in ReferenceUSA and Dunn and Bradstreet list the number of employees working for a corporation. Like revenue, if the corporation is a subsidiary the total number of employees for the subsidiary and parent corporations is used. Of all 108 cases analyzed only 13 are subsidiaries. Third, the advertising budgets of each corporation are reported. Finally, the number of corporate board members in a corporation is reported.

EPA ECHO:

EPA’s Enforcement and Compliance System Online (ECHO) is a database maintained by the EPA. ECHO gives information regarding the community demographics surrounding corporations that have violated environmental laws or have pollution permits with the EPA. Specifically ECHO can tell an interested party the economic status, race, ethnicity, age, education level and the like of the population living within 1, 3 or 10 mile concentric rings around a hazard site or a corporation with a permit from the EPA. The ECHO database also tells an interested user how many times a corporation has been inspected for possible violations, how many previous violations of environmental law a corporation has committed and how many quarters a corporation has been in non-compliance with EPA regulations. For the purposes of this thesis the following information was recorded: (1) economic status, educational level and race of victims, and (2) the number of previous environmental law violations a corporation has.

Variables:

The dependent variable for this thesis is the total fine recalculated as a percentage of the corporation’s revenue. The total fine a corporation was assessed came from the judgment documents filed in federal court and uploaded to the PACER database. To calculate the total
fine as a percentage of revenue I simply take the total fine and divide it by the overall corporate revenue. For example in the case of *U.S. v. Radiators Inc* I take the total fine of $60,000 assessed against the corporate defendant and divide it by the corporation’s total revenue of $648,000 \([60,000/648,000]\) to get 0.093. To turn this number into a percentage I multiply 0.093 by 100 and get 9.3. Therefore the total fine assessed against Radiators Inc. encumbers 9.3% of the corporation’s revenue. For a more thorough discussion regarding the logical and theoretical basis for this variable see Appendix C.

*Vertical Dimension Variable:*

The first independent variable used in this thesis is overall corporate revenue. ReferenceUSA and Dunn & Bradstreet report the overall yearly corporate revenue of each corporation in its database. These yearly revenues do not include deductions for things like payroll, research and development, legal fees, and the like. Further, if a corporation is a subsidiary both databases report the subsidiary and parent corporation’s revenue. When the corporate defendant is a subsidiary the revenue of the parent corporation (which combines parent and subsidiary corporation’s revenues together) is reported.

As stated in Chapter 2 Blackian theory proposes that corporations of higher vertical status will receive less law while corporations of low vertical status will receive more law. Taking the corporate revenue variable and applying it to pure sociology we get the following hypotheses:

[H1]: The more revenue a corporation has the less law it will receive

Before moving on it is important to note that the corporate revenue, as shown in Appendix A, has a high correlation with the other independent variables measuring the four other dimensions of social space. For example corporations with a large revenue base will necessarily have more employees, more corporate board members, and large advertising budgets, have been
in business longer and had more opportunity to violate environmental laws. Some time will be spent in the proceeding pages arguing that while there is a relationship between corporate revenue and the other independent variables they are still conceptually different (Appendix A).

*Cultural Dimension Variable:*

Corporations that produce goods or provide services need to promote themselves within a broader culture. To do this they must make their company name or company logo a cultural symbol. Everyone recognizes the logo for the Apple Corporation; the same goes for Nike’s swoop. How do logos or names become part of our everyday consumer lexicon? Advertising. When corporations advertise their products or services will be more recognizable than corporations with similar products or services that do not advertise (see generally Bakan, 2005; De Graff et al., 2005 and Marling, 1994).

Using advertising budgets as a measure of culture invites the following argument: corporations that spend the most on advertising have the highest revenues – therefore advertising budgets are just measuring the vertical dimension. However, this is not necessarily true. How much a corporation spends on advertising depends on who the corporation is marketing to and what industry the corporation is in. Corporations that are retailer sellers will spend more on advertising than corporations engaged in consulting. For example, Atlantic Wire Company has revenue of $15,800,000 and spends over $250,000 a year on advertising. However, Frazer and Jones Company have revenue of $18,480,000 and spend $20,000 to $50,000 a year on advertising. This is only one example – the dataset for this thesis is riddled with similar examples. Therefore, advertising budgets are not good measures of vertical status and is more indicative of the cultural dimension.
The second independent variable used in this thesis is the approximate advertising budget of a corporation. The ReferenceUSA and Dunn & Bradstreet databases present approximate advertising budgets for corporations. There are seven categories the databases present and they are the following: (1) Less than $5,000, (2) $5,000 to $10,000, (3) $10,000 to $20,000, (4) $20,000 to $50,000, (5) $50,000 to $100,000, (6) $100,000 to $250,000 and (7) More than $250,000.

Pure sociology proposes that the more culturally prominent a corporation is the less law it will receive. Taking the advertising budget variable and applying it to Blackian theory we get the following hypothesis:

\[ H_2 \]: The more money a corporation spends on advertising the less law it will receive

*Variables measuring the Horizontal Dimension:*

There are two components to the horizontal dimension: intimacy and integration. Intimacy is measured by looking at the number of people employed at a corporation. Integration is measured by looking at the number of years a corporation has been in business. The fifth variable used in this thesis is the number of people employed by a corporation. The ReferenceUSA and Dunn & Bradstreet databases list the total number of employees a corporation has. Like the revenue variable, if the corporation is a subsidiary, the total number of employees for the parent corporation and all of its subsidiaries are reported. The sixth variable is the number of years a corporation has been in business. The ReferenceUSA and Dunn & Bradstreet databases report the year each corporation went into business and how many years each corporation has been in business. This thesis uses the total number of years a corporation has been in business.
Employees (and their families) of a corporation are more intimate with their employer than people who are not employees of a corporation. Growing up my father used to be the manager for a local Bastien’s Paint shop. He would wear Bastien t-shirts on the weekend and gave my brother and I baseball caps to wear as small children. My mother worked for Merrill Lynch as a secretary and she would wear Merrill t-shirts on the weekend as well. My mom and dad would not buy these shirts – they were given to them by their employers. While my parents probably had misgivings about their respective employers I cannot recall having a poor opinion of either company. In fact I used Bastein paint to paint my first house simply because my dad had worked for the company.

We can all look at our friends and pick out a few that wear their employers clothing or bring friends and family to their employers’ fund raiser or company party. Here in Georgia many people – even if they secretly like Pepsi better – will probably drink a Coke over Pepsi simply because a relative or friend works for Coca Cola Inc. The point of all this is that there is a level of intimacy between corporations, the people they employ and the families of the employees. The more employees a corporation has the more intimacy it will have within a community.

Corporations that have been in business for a long period of time will be more integrated into a community or communities than new corporations. Older corporations have name recognition (aside from advertising) and place recognition. For example, I can drive down Ford

---

2 A legitimate question arises with the employees variable. Why use the total number of employees at a corporation and not just the number of employees at the specific hazard site? There are two reasons. First, most of the corporations in this dataset are single location sites with an overall median score of 26 total employees. Second, for those corporations that has multiple locations many of those locations are within the state or region the crime occurred and thus increase intimacy. For instance, Seven Up/RC Bottling Company of Southern California has multiple locations within the San Diego, Orange County and Los Angeles areas. Therefore, even if there is no connection to the specific location that the environmental hazard occurred at there is a greater likelihood there is still some intimate connection with the corporation because of the large number of regional employees.
Avenue in Saint Paul, MN and point out the local Lunds Grocery Store, the Highland Grill bar and restaurant and the Ford Corporation’s manufacturing plant. These businesses have been in place for many years. I don’t know anyone who works at any of them and have only been to the Highland Grill once – but if I was ever back in the neighborhood and wanted a sandwich I would go there simply because it has been there for so many years more than the Which Wich Superior Sandwich shop right next door.

Pure sociology proposes that the more intimate and integrated into society a corporation is the less law it will receive. Therefore this thesis will test the following hypothesis:

[H3]: The more employees a corporation has the less law it will receive.

[H4]: The longer a corporation has been in business the less law it will receive.

Organizational Dimension Variable:

The more corporate board members a corporation has the greater its ability to engage in collective action will be. For example, large corporations can direct their Chief Legal Officer (hereinafter “CLO”) to handle all matters related to the prosecution. The CLO can find outside legal counsel if necessary, direct low level employees to aid in fact finding operations and the like – all the while the prosecution will generally not interfere with the day to day operations of the corporations. Corporations with fewer board members, if any at all, do not have this luxury. If a corporation only has one or two board members they will have to be involved with every step of the litigation process and likely is not able to dictate tasks to other people. Further, the prosecution will certainly force the board members to choose between taking time away from running the day to day operations of their business to aid in fact finding operations or ignoring the prosecution from time to time in order to run the business. Finally, environmental criminal
laws, as written, give prosecutors the discretion to treat corporations leniently if they are generally cooperative with the government.

Therefore, the third independent variable used in this thesis is the total number of corporate board members within a corporation. The ReferenceUSA and Dunn & Bradstreet databases give the names of every board member within a corporation. The names were counted up and the total number of board members at each corporation is reported.

Like with advertising budgets it is possible to argue that the more revenue a corporation has then the more corporate board members it will have – therefore the number of board members at a corporation is just another measure of vertical status. However, like the advertising budget measure corporate board membership is not a very good measure of vertical status. For example, Allen Canning Company has yearly revenue of $75,000,000 and has a mere 3 board members. Meanwhile Southern Finishing Company has yearly revenue of $61,813,000 and has 28 corporate board members. Like the argument above regarding the advertising budget variable – the number of board members a corporation has is industry specific, needs specific and likely dependent upon its status as a public or closed corporation. Allen Canning Company is a non-publicly traded corporation with multiple factories and promotes its business all around the nation. Southern Finishing Company is a publicly traded corporation that is located in Virginia but has locations in North Carolina and Arizona and the company markets its goods and services all across the country. The major distinction between the two corporations is that one is publicly traded and the other is not and it is the publicly traded corporation with less yearly revenue that has the larger number of board members. In all likelihood when Southern Finishing

---

3 A closed corporation means only individuals listed in a corporate charter may be allowed to own shares of stock, have voting rights and be on the corporate board of directors.
4 [www.allens.com](http://www.allens.com)
5 [www.southernfinishing.com](http://www.southernfinishing.com)
went public the majority shareholders demanded a seat on the corporate board – they likely did not end up there simply because the corporation could afford it. Like the advertising budgets variable, the dataset is chock full of examples where corporations have large incomes but a small number of board members – or smaller incomes but a surprisingly large amount of board members. Therefore, the corporate board members variable is not a measure of vertical status.

Pure sociology proposes that the greater the ability to engage in collective action a corporation is the less law it will receive. Therefore we derive the following hypothesis:

[H5]: The more board members a corporation has the less law it will receive.

*Variable Measuring Normative Status:*

People who commit multiple crimes over time are less respectable than people who have just committed one crime. People that have committed multiple crimes over time will receive more law than those who have not. The same is true of corporations. If a corporation has violated environmental laws in their past they are less respectable than first time offenders. Therefore the seventh variable in this thesis is past offenses. The ECHO database lists every administrative, civil and criminal violation a corporation has against it. For this thesis I report all violations a corporation has prior to the current criminal prosecution being analyzed.

Blackian theory proposes that the less respectable a corporation is the more law it will receive. Statutory law also leads us to believe this would be true. For example, *42 USC § 7412 et seq.* and *33 USC § 1319 et seq.* both have language written into the statutes requiring prosecutors to factor a corporation’s prior history into charging decisions and creation of plea agreements. Therefore when we apply the prior actions variable to pure sociology we get the following hypothesis:
[H6]: Corporations with one or more prior violation of environmental law will receive more law than corporations that do not.

Control Variables:

Donald Black’s Behavior of Law argues that researchers investigating variance within the law must hold the facts of a legal case constant (Black, 1976). Further, researchers should attempt to control for victim status because it is well documented that victim characteristics play a major role in predicting the outcome of legal cases (see generally, Baldus and Woodworth, 2003; Baumer et al., 2000; Eisenberg et al., 2003; Holcomb, 2004; Radelet, 1989; Spohn and Spears, 1996) or predict whether or not charges will even be filed by prosecutors (Frohmann, 1997). To do this I introduce three control variables that capture case characteristics and their influence on case outcomes. Further, I introduce three control variables demonstrating the influence victim characteristics have on case outcomes.

The first variable controls for felony crimes. An environmental crime prosecuted as a felony is coded 1 and misdemeanors are coded 0. The second variable controls for death. Crimes resulting in the death of a human or animal are coded as 1 and all other cases were recorded as 0. The third variable controls for the occurrence of an actual hazard. Not all environmental crimes result in the release of hazardous chemicals into the environment – some corporations are charged with storing regulated chemicals without a permit. Crimes that involved the release of regulated substances into the environment are coded as 1 and all other cases are coded as 0.

If the results from victim influence studies are generalizable then it should also be expected victim characteristics will have a significant influence upon case outcomes. The fourth control variable is the percentage of whites living within a 1 mile radius around an
environmental crime. The fifth control variable is the percentage of households with a total income over $75,000 per year living within a 1 mile radius around an environmental crime. Finally, the sixth control variable is the percentage of individuals with a 4 year college degree or more living within a 1 mile radius around an environmental crime.

A control variable I decide not to use is one measuring what the maximum fine for a criminal law violation could be. It is logical and reasonable to believe that the more serious a crime is, the larger the maximum possible fine could be. For example, a felony violation under the Clean Water Act carries a maximum fine of $500,000. However, if the offense continues on for multiple days, each new day is considered a new violation (e.g. See 33 USC § 1319(c)(2)(A) for specific language). Thus if a company violates a permit for 2 days straight the fine could potentially be $1,000,000. As a specific example, in the case of U.S. v. ECO Finishing Company the corporation was in violation of its permit requirements for one month. The potential maximum fine was just a tad more than $77 million dollars. The prosecutors wrote in the plea agreement that any attempt to force ECO Finishing to pay a fine close to the potential maximum in and of itself was an injustice.6 Eco Finishing is just one example, but there are other examples. Nevertheless, it is impossible to tell when prosecutors interpret the facts of each case in a way that justifies seeking fines close to the maximum potential fine and when they do not. Therefore, I leave this variable out.

I must acknowledge that it would have been ideal to estimate demographic conditions around the hazardous waste site at the time corporations were sentenced for their crimes (e.g., 2005 to 2010). However, census data were collected in 2009 and this is relatively close in temporal proximity to the time of sentencing. As a result, if associations between demographics

---

and monetary penalties do exist, the mismatch in temporal order is likely to introduce a small amount of random error that serves to decrease those associations.

**Methods/Analytical Strategy:**

This thesis will use both qualitative and quantitative methods. First, this thesis will compare descriptive statistics and compare specific cases to demonstrate Blackian theory can predict outcomes for environmental crime prosecutions. Second, this thesis will use an ordered logit model to analyze Blackian theory using a purely quantitative method.

Specifically in the first part of the analysis this thesis will compare the fine as a percentage of revenue mean and median scores to demonstrate prosecution outcomes are in the general direction predicted by Blackian theory. For example, in the vertical dimension this thesis will separate out corporate defendants by their revenues, put them into appropriate categories, and compare the mean and median scores of each category. To demonstrate – this thesis report the fine as a percentage of revenue mean and median scores for corporations with a billion dollars or more in revenue to the mean and median scores for corporations that have less than one million dollars in revenue. Blackian theory predicts that the fine as a percentage of revenue mean and median scores should be smaller for corporations with a billion dollars or more in revenue and larger for corporations with less than one million dollars in revenue. Once the mean and median scores in each dimension are compared and reported this thesis will provide specific case comparisons to give a level of context and detail that is lost with statistical comparisons.
CHAPTER 4
ANALYSIS

Introduction:

This chapter, in two sections, will demonstrate the existence of trends using descriptive
statistics and OLS regression analysis. The first section of this chapter titled “Descriptive
Statistics and Case Comparisons” puts forward a series of tables reporting various descriptive
statistics showing trends predicted by Blackian theory exist. The second section of this chapter
titled “Regression Analysis” presents statistical models showing the magnitude and statistical
significance of the independent variables described in Chapter 3. Further, the second section will
show the independent variables are in the direction predicted by Blackian theory.

Descriptive Statistics and Qualitative Case Comparisons:

Table 4.1: Vertical Dimension - Felonies

<table>
<thead>
<tr>
<th>Category</th>
<th>Average Revenue</th>
<th>Average Fine</th>
<th>Average Fine of Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billion Dollars in Revenue or</td>
<td>$10,466,562,892</td>
<td>$5,253,846 ($3,000,000)</td>
<td>0.40% (0.0075%)</td>
</tr>
<tr>
<td>more (n=10)</td>
<td>($4,553,123,400)</td>
<td>($4,553,123,400)</td>
<td></td>
</tr>
<tr>
<td>10 Million to 1 Billion in</td>
<td>$84,010,333</td>
<td>$1,015,317 ($250,000)</td>
<td>0.90% (0.6%)</td>
</tr>
<tr>
<td>Revenue (n=19)</td>
<td>($23,450,000)</td>
<td>($23,450,000)</td>
<td></td>
</tr>
<tr>
<td>1 Million to 10 Million in</td>
<td>$3,206,231 ($2,330,000)</td>
<td>$792,682 ($106,216)</td>
<td>18% (3.6%)</td>
</tr>
<tr>
<td>Revenue (n=24)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 Million in Revenue</td>
<td>$680,417 ($536,000)</td>
<td>$48,080 ($60,000)</td>
<td>28% (11.4%)</td>
</tr>
<tr>
<td>(n=16)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows strong support for [H1]. As we can see corporations with revenue of one
billion dollars or more have average revenue of $10,466,562,892 and the average fine of
$5,253,846 assessed against these corporations take up on average 0.40% (Median at 0.0075%)
of revenue. Corporations with revenue under one million dollars have average revenue of

---

7 Categories for all following tables are reported in the following manner: Mean Score (Median Score).
$680,417 and the average fine of $680,417 assessed against these corporations take up on average 28% (Median at 11.4%) of total corporate revenue. The overall trend here is that as corporate revenue increases the average fine as a percentage of revenue gets smaller. This is exactly the trend predicted by Blackian theory and therefore we can say strong support exists for the propositions under the vertical dimension.

To highlight what we are seeing in Table 1 it is necessary to look at specific cases. When we look at corporations with a billion dollars or more in revenue we see that cases within a category have outcomes as would be predicted by Blackian theory. In the case of U.S. v. McWayne Inc. the corporate defendant knowingly allowed storm water runoff that had industrial waste in it to drain into the Avondale creek which ran next to the factory. McWayne has 6,000 employees and $1,750,000,000 in corporate revenue and received a fine which took up 0.23% of overall revenue. In the case of U.S. v. Hamilton Sundstrand Corporation the corporate defendant had a system to reduce hexavalent chromium to trivalent chromium within wastewater. The system began to malfunction and trivalent chromium was discharged into a wastewater system over permit levels – Hamilton Sundstrand knew the system failed yet did not fix the system and allowed pollutants to be discharged. Hamilton Sundstrand has 200,000 employees and $12,200,000,000 and received a fine that encumbered 0.008% of overall revenue. These two cases highlight that as the number of employees and overall corporate revenue increases the fine assessed against the corporation is going to be a smaller proportion of corporate revenue.

When looking at cases in different categories we can see the trends shown in Table 1 a bit more clearly. For instance in the case of U.S. v. American River Transportation the corporate defendant on numerous occasions during a 7 year period on directed employees to dump used motor oil down a drain connecting to the Missouri river. American River has 30,700 employees
and revenue of $80,676,000,000 and received a fine which represented 0.003% of overall revenue.

In the case of *U.S. v. Techmetals Inc.* the corporate defendant knew a pretreatment water cleansing system had failed and instead of fixing the system allowed untreated wastewater to be discharged into the local sewer systems on multiple occasions from 2003 to 2004. Techmetals Inc. have 5,000 employees and revenue of $43,950,000 and received a fine which took up 1.19% of overall corporate revenue.

In the case of *U.S. v. American Metal Processing* the corporate defendant knowingly allowed untreated wastewater contaminated with cadmium chromium and copper to be discharged into local sewer systems. American Metal Processing has 10 employees and $1,370,000 in corporate revenue and received a fine which encumbered 3.65% of overall revenue.

Finally in the case of *U.S. v. Carl and Don Frazier* the corporate defendant operated a fish farm and specifically raised white fish. When the fish were captured and processed for market the corporate defendant knowingly dumped fish offal into the Epoufette Bay of Lake Michigan. Only one incident is being prosecuted but it was alleged in court documents that Carl and Don Frazier had been dumping fish offal into the same bay for 8 to 10 years. Carl and Don Frazier have 4 employees, revenue of $924,000 and received a fine which took up 8.11% of corporate revenue.

All four of these cases were prosecuted under 33 USC §1319(c)(2)(A) and as the brief descriptions show the facts of each case are generally the same; therefore the outcomes should be similar. However, all four cases have different outcomes. When holding all else constant we see
that as overall revenue increases the fine as a percentage of revenue will decrease. This trend is what Blackian theory predicts.

**Table 4.2: Vertical Dimension – Misdemeanors**

<table>
<thead>
<tr>
<th>Billion Dollars in Revenue (n=5)</th>
<th>Average Revenue</th>
<th>Average Fine</th>
<th>Average Fine of Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>$111,419,431,750 ($185,712,500,000)</td>
<td>$1,663,659 ($3,189,817)</td>
<td>0.005% (0.0015%)</td>
<td></td>
</tr>
<tr>
<td>10 Million to 1 Billion in Revenue (n=9)</td>
<td>$189,431,389 ($65,400,000)</td>
<td>$385,859 ($100,000)</td>
<td>0.30% (0.12%)</td>
</tr>
<tr>
<td>1 Million to 10 Million in Revenue (n=10)</td>
<td>$3,164,938 ($2,115,000)</td>
<td>$140,491 ($25,000)</td>
<td>4% (0.86%)</td>
</tr>
<tr>
<td>Less than 1 Million in Revenue (n=15)</td>
<td>$366,500 ($300,000)</td>
<td>$70,250 ($20,000)</td>
<td>22% (3.5%)</td>
</tr>
</tbody>
</table>

Table 2 shows strong support for [H1]. When looking at fines as a percentage of revenue we see the trends moving in the directions predicted by Blackian theory. With billion dollar companies the average fine as a percentage of revenue is 0.005% (Median at 0.0015%). As we move downward and look at smaller companies we see that companies with revenue between one million dollars and ten million dollars have an average fine as a percentage of revenue at 4% (Median at 0.86%). Finally we see that companies with less than a million dollars in revenue have an average fine as a percentage of revenue at 22% (Median at 3.5%). The trend we are seeing is that as the average revenue of a corporation decreases the average fine as a percentage of revenue increases. Therefore we have strong support for Blackian theory.

In the case of *U.S. v. KIK Custom Products* the corporate defendant negligently discharged household bleach into the local sewer system. KIK’s overall corporate revenue is $83,930,000 and they have 70 employees and they were assessed a fine which took up 0.12% of corporate revenue. In the case of *U.S. v. Target Corporation* the corporate defendant negligently let 275 gallons of acrylic coating used for re-roofing a store flow into the sewer and a site foreman ordered the remaining acrylic coating to be washed down a sewer drain. Target Corporation (retail operations) has employees 3,000,000 people and corporate revenue of
$62,370,000,000 and were assessed a fine that represented 0.0001% of overall revenue. Target Corporation was facing a maximum possible fine of $250,000 and was only fined $75,000 while KIK was facing a maximum possible fine of $200,000 and they were fined $100,000. These outcomes are interesting because arguably Target Corporation’s crime is substantively worse but yet they received the lesser fine despite being more than capable of paying the full $250,000 if it had been assessed. Further, the fine against Target Corporation was less punitive than KIK’s fine.

These first two cases are examples of how outcomes vary between corporations with similar corporate revenues – these next three cases are examples of corporations with varying incomes and the cases show more clearly how as revenue increases the fine as a percentage of revenue decreases. In *U.S. v. Hershey Creamery Company* the corporate defendant failed to develop and implement a risk management program during asbestos removal projects. Hershey Creamery Corp. has 399 employees and corporate revenue of $381,960,000. Hershey Creamery was fined $100,000 which encumbers 0.0003% of overall revenue. In *U.S. v. Al Prince Corporation* the corporate defendant negligently and without a permit removed asbestos in a manner not in compliance with federally mandated standards. Al Prince Corporation which has 5 employees and corporate revenue of $2,245,000 was assessed a fine of $100,000 which represents 4.5% of the overall revenue. In *U.S. v. Benco Development* the corporate defendant negligently failed to comply with federally mandated standards regarding asbestos removal during a redevelopment project. Benco Development has 2 employees and corporate revenue of $220,000. Benco received a $25,000 fine which is 11.4% of corporate revenue. These three cases show in detail that as corporate revenue increases the fine as a percentage of revenue will decrease.
Table 4.3: Cultural Dimension – Felonies

<table>
<thead>
<tr>
<th>Advertising Budget</th>
<th>Average Revenue</th>
<th>Average Fine</th>
<th>Average Fine of Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100,000 a year or more (n=19)</td>
<td>$6,580,436,463 ($645,972)</td>
<td>$3,457,674 ($1,000,000)</td>
<td>0.84 (0.21)</td>
</tr>
<tr>
<td>$5,000 to $100,000 (n=36)</td>
<td>$6,535,267 ($2,495,000)</td>
<td>$432,422 ($98,225)</td>
<td>18.82 (1.35)</td>
</tr>
<tr>
<td>Less than $5,000 (n=14)</td>
<td>1,279,643 ($838,000)</td>
<td>$435,036 ($142,500)</td>
<td>24.45 (21)</td>
</tr>
</tbody>
</table>

As stated in Chapter 3 both ReferenceUSA and Dunn & Bradstreet databases report seven advertising budget categories, however because some categories had so few cases it became necessary to condense the number of advertising budget categories from 7 to 3. For example, the advertising budget category of $10,000 to $20,000 has only one misdemeanor case in it. Moreover, the same category for felony crimes has only two cases in it. Finally, the advertising budget category of $50,000 to $100,000 has only two misdemeanor cases in it. No meaningful comparisons can be made with so few cases in a category.

Table 3 shows strong support for [H2]. As the advertising budget increases the average fine as a percentage of corporate revenue decreases. For example, when corporations are spending less than $5,000 a year on advertising their average fine will take up on average 24.45% (Median at 21%) of overall corporate revenue. Moving to corporations that spend the most - $100,000 or more a year – we see the average fine will encumber only 0.84% (Median at 0.21%) of corporate revenue. This trend is what is predicted by Blackian theory.

For investigative purposes I split up the $5,000 to $100,000 category (n=36) in Table 3 and look at corporations that have an advertising budget between $20,000 and $100,000 (n=14) and find that the average fine as a percentage of revenue is at 4.29% (Median at 0.53%). For cases that have advertising budgets between $5,000 and $20,000 (n=16) the average fine as a percentage of revenue is 17.34% (Median at 5.5%). Therefore even when I break up a category
that contains an overwhelming majority of cases in it the overall findings still strongly support Blackian theory.

Table 3 is better explained through specific examples. In the case of *U.S. v. Instar Services Group* the corporate defendant restored condos after Hurricane William during removal and disposal of asbestos laden material without a permit to do so; moreover the company did not dispose of the material in a statutorily prescribed manner. Instar Service Group has a yearly advertising budget of over $250,000 per year and received a fine which encumbers 2.5% of overall revenue. In the case of *U.S. v. Parkland Town Center* the corporate defendant was engaged in removing asbestos laden material from a strip mall. The corporate defendant did not file demolition and renovation notices with the EPA and also removed asbestos laden material without a permit. Parkland Town Center has a yearly advertising budget of under $5,000 a year and received a fine which took up 32 percent of overall revenue.

Both cases are similar in their factual situations - the corporate defendants were engaged in removing asbestos from old buildings without a permit. There is no indication that any people were hurt or property was destroyed. Therefore we would expect the punitiveness of the outcomes to be similar. However, the outcomes are very different. Parkland Town Center – the corporation with the smallest yearly advertising budget – has the larger fine as a percentage of total revenue. Instar Services Group has the larger advertising budget and has a fine that is a smaller percentage of corporate revenue. The outcomes for these two cases are explained by Blackian theory. The more advertising a company does each year the more culturally prominent the corporation will be. The more culturally prominent a corporation is the more likely it will receive a fine that is less punitive than a corporation that is less culturally integrated. Instar
Services Group is the more culturally prominent corporation and received a less punitive fine for the same crime as the less prominent corporation Parkland Town Center.

Table 4.4: Cultural Dimension – Misdemeanors

<table>
<thead>
<tr>
<th>Advertising Budget</th>
<th>Average Revenue</th>
<th>Average Fine</th>
<th>Average Fine as % of Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100,000 a year or more (n=15)</td>
<td>$29,798,896,400 ($280,600,000)</td>
<td>$692,113 ($100,000)</td>
<td>0.12 (0.004)</td>
</tr>
<tr>
<td>$5,000 to $100,000 (n=10)</td>
<td>$13,917,455 ($4,650,000)</td>
<td>$238,894 ($53,329)</td>
<td>3.86 (1.1)</td>
</tr>
<tr>
<td>Less than $5,000 (n=14)</td>
<td>$919,900 ($638,000)</td>
<td>$22,132 ($12,000)</td>
<td>5.34 (0.65)</td>
</tr>
</tbody>
</table>

Looking at Table 4 we see moderate support for [H2]. Corporations that spend $100,000 a year or more on advertising are receiving fines taking up on average 0.12% (Median at 0.004%) of overall corporate revenue. Corporations that spend $5,000 a year or less on advertising receive fines which encumber on average 5.34% (Median at 0.65%) of overall corporate revenue. This median finding for the less than $5,000 is somewhat troubling because for corporations that spend between $5,000 and $100,000 on advertising each year the fines take up on average 3.86% (Median at 1.1%) of revenue. The average scores are in line with Blackian theory but not the median scores when looking at the less than $5,000 a year and between $5,000 and $100,000 a year on advertising categories.

When breaking up the $5,000 to $100,000 category as with the felony cases above the findings do not improve the problem stated in the last paragraph. Corporations that spend between $5,000 and $20,000 on advertising per year receive fines that take up on average 6.65% (Median at 2.4%) of corporate revenue. Further, Corporations that spend between $20,000 and $100,000 a year on advertising receive fines taking up on average 0.68% (Median at .5%) of overall revenue. The $5,000 to $20,000 category just does not follow Blackian theory. Upon closer look, in the less than $5,000 category there is one case in particular that brings the
averages and median scores down dramatically and in the $5,000 to $100,000 category one case makes this group of cases look like their fines are more punitive than they really are. In the less than $5,000 category the case of *U.S. v. Festus Jones Inc.* the corporation was fined $400 which only took up 0.0002% of corporate revenue. In the $5,000 to $100,000 category the case of *U.S. v. Mid-American Pipeline* the corporation received a fine that was 21% of its overall revenue; the fine was extremely high not because of the seriousness of the offense but because the hazard caused over $800,000 in property damage and the corporation was mandated to pay it back. When these two cases are taken out of the dataset the numbers – specifically the median scores – fall into place.

Table 4.4 is showing us that corporations that spend more money each year on advertising are receiving fines which take up a smaller portion of corporate revenue. This trend is what is expected under Blackian theory.

Looking at specific cases helps illuminate the trends we see. In *U.S. v. Erman Corporation* the corporate defendant negligently discharged oil into a river. Employees siphoned gas from one train to another train and spilled the siphoned oil into a nearby river. Erman spends between $100,000 and $250,000 per year on advertising and received a fine taking up 0.32% of corporate revenue. In *U.S. v. Texas Petroleum Investment* an oil pump failed which sounded an alarm and employees caught and stopped the leak immediately. A small amount of oil and water spilled over the top of a storage bin. The corporate defendant received a fine taking up 12% of overall corporate revenue and the corporation spends between $5,000 and $10,000 a year on advertising.

Both cases have similar factual situations and were charged with one count under 33 USC § 1319(c)(1)(A). Both companies then should receive a fine that is similarly punitive. However
the corporation that has the largest advertising budget received the less punitive fine. Erman Corporation is the more culturally prominent corporation because it spends more money each year on advertising and thus received a less punitive fine than the corporation that spends less money each year on advertising.

Table 4.5: Horizontal Dimension – Felonies (Employees)

<table>
<thead>
<tr>
<th>Employees</th>
<th>Average Fine</th>
<th>Average Revenue</th>
<th>Average Fine as % of Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 or More</td>
<td>3,647,411 (1,000,000)</td>
<td>6,688,768,568 (1,045,610,000)</td>
<td>0.58 (0.23)</td>
</tr>
<tr>
<td>25 to 100</td>
<td>251,273 (80,000)</td>
<td>18,960,000 (15,000,000)</td>
<td>9.262 (0.61)</td>
</tr>
<tr>
<td>6 to 24</td>
<td>588,156 (96,450)</td>
<td>2,753,269 (2,000,000)</td>
<td>22.28 (3.1)</td>
</tr>
<tr>
<td>1 to 5</td>
<td>157,081 (107,500)</td>
<td>804,917 (450,000)</td>
<td>25 (21)</td>
</tr>
</tbody>
</table>

Table 4.5 shows strong support for [H3]. Corporations that have between 1 and 5 employees receive an average fine of $157,081 (median fine of $107,500) and their fines take up on average 25% (Median of 21%) of corporate revenue. Corporations that have between 25 and 100 employees receive an average fine of $251,273 (Median fine of $80,000) and their fines take up on average 9.262% (Median of 0.61%) of corporate revenue. Finally corporations with 100 or more employees receive an average fine of $3,647,411 (Median fine of $1,000,000) and their fines take up on average 0.58% (Median of 0.23%) of corporate revenue. The trends are as predicted by Blackian theory – as the number of employees at a corporation increases the fine as a percentage of revenue decreases.

Specific cases highlight the trends in Table 4.5. In the case of U.S. v. American Metal Processing the corporate defendant knowingly did not pre-treat wastewater that was contaminated with cadmium chromium and copper before discharge into the local sewer system. American Metal Processing has 10 employees and received a fine which took up 3.6% of overall corporate revenue. In the case of U.S. v. Techmetals Inc., from 2003 to 2004 the corporate defendant knew the pretreatment system for dirty water to be discharged from their facility was
not working properly yet continued to allow wastewater to enter the city sewer without
treatment. Techmetals Inc. has 100 employees and received a fine which took up 0.26% of
corporate revenue. Both corporations were prosecuted under 33 USC §1319(c)(2)(A) and have
very similar fact patterns. However, it is the corporation with the greater number of employees
that received the less punitive fine. This outcome is predicted by Blackian theory.

Table 4.6: Horizontal Dimension – Misdemeanors (Employees)

<table>
<thead>
<tr>
<th>Employees</th>
<th>Average Fine</th>
<th>Average Revenue</th>
<th>Average Fine as % of Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 or More (n=9)</td>
<td>831,070 (175,000)</td>
<td>49,642,091,556 (560,000,000)</td>
<td>0.09 (0.002)</td>
</tr>
<tr>
<td>25 to 100 (n=13)</td>
<td>223,839 (100,000)</td>
<td>67,010,000 (15,690,000)</td>
<td>1.82 (0.32)</td>
</tr>
<tr>
<td>6 to 24 (n=9)</td>
<td>160,646 (12,000)</td>
<td>1,998,375 (2,000,000)</td>
<td>2.89 (0.4)</td>
</tr>
<tr>
<td>1 to 5 (n=8)</td>
<td>36,250 (22,500)</td>
<td>1,454,467 (1,142,000)</td>
<td>4.41 (2.4)</td>
</tr>
</tbody>
</table>

Table 4.6 shows strong support for [H3]. The overall trend is that as the number of
employees increases the average fine as a percentage of corporate revenue decreases.
Corporations that have between 1 and 5 employees receive average fines of $36,250 (Median
fine of $22,500) and that fine takes up on average 4.41% (Median of 2.4%) of corporate revenue.
Corporations with 25 to 100 employees have an average fine of $223,839 (Median fine of
$100,000) and their fines take up on average 1.82% (Median of 0.32%) of overall corporate
revenue. Finally corporations with 100 or more employees have an average fine of $831,070
(Median fine of $175,000) and their fines take up on average 0.09% (Median of 0.002%) of
corporate revenue. The trend is straight forward – the more employees a corporation have the
less punitive the fine will be.

In the case of U.S. v. Antec Inc. the corporation, for an unknown period of time,
negligently violated a pre-treatment program allowing wastewater to be discharged into a local
creek. Antec Inc has 3 employees and received a fine which took up 3.3% of corporate revenue.
In the case of *U.S. v. Royal Canin USA* the corporate defendant negligently discharged animal fat from cremated animals into the Beaver Creek which is a tributary to the Little Piney River. Royal Canin USA has 80 employees and received a fine which took up 0.5% of corporate revenue. Both corporations were charged under 33 USC § 1319(c)(1)(A) and have similar fact patterns yet it is Royal Canin – the corporation with the greater number of employees – that received the least punitive fine. This outcome is what Blackian theory predicts.

**Table 4.7: Horizontal Dimension – Felonies (Years in Business)**

<table>
<thead>
<tr>
<th>Years in Business</th>
<th>Avg. Fine</th>
<th>Average Fine of Revenue</th>
<th>Average Years in Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 51 Years in Business (n=12)</td>
<td>$2,086,768 ($2,000,000)</td>
<td>0.98 (0.25)</td>
<td>91 (88)</td>
</tr>
<tr>
<td>31 to 50 Years in Business (n=14)</td>
<td>$3,792,727 ($300,000)</td>
<td>2.23 (0.7)</td>
<td>39 (39)</td>
</tr>
<tr>
<td>16 to 30 Years in Business (n=23)</td>
<td>$546,499 ($100,000)</td>
<td>17.38 (1.3)</td>
<td>25 (28)</td>
</tr>
<tr>
<td>6 to 15 Years in Business (n=14)</td>
<td>$598,515 ($156,000)</td>
<td>22.79 (7.05)</td>
<td>11 (11)</td>
</tr>
<tr>
<td>0 to 5 Years in Business (n=6)</td>
<td>$325,900 ($185,000)</td>
<td>30.65 (29)</td>
<td>3 (3)</td>
</tr>
</tbody>
</table>

The more intimate a corporation is in a community the smaller the fine will be. As stated in the previous chapter, the longer a corporation has been in business the more intimate they will be with a community. Therefore Blackain theory predicts the longer a corporation has been in business the more intimate it will be within a community and thus will receive less law.

Table 4.7 shows strong support for [H4]. As we can see corporations that have been in business the longest have the smallest average fine as a percentage of total revenue. As corporations get younger they begin to receive larger average fines as a percentage of corporate revenue. Corporations that have been in business less than 5 years receive fines which take up on average 30.65% (Median at 29%) of overall revenue while corporations that have been in business 16 and 30 years receive fines which take up on average 17.38% (Median at 1.3%) of overall corporate revenue. Finally, corporations that have been in business for 51 years or more
receive fines which encumber on average 0.98% (Median at 0.25%) of overall corporate revenue. This is the trend predicted by pure sociology.

Specific cases show the trend we see in the horizontal dimension more clearly. In the case of *U.S. v. Tulip Corporation* the corporate defendant from October 14, 2004 to July 11, 2007 knowingly stored shredded battery casings without a permit. The corporation has been in business for 73 years and received a fine which took up 0.44% of overall corporate revenue. In the case of *U.S. v. Southwest Plating Company* the corporate defendant knowingly stored corrosive wastes with pHs less than 2.0 without a permit. Southwest Plating has been in business for 29 years and received a fine which took up 1.4% of overall corporate revenue.

Both corporations committed very similar crimes and were both charged with one count under 42 USC § 6928(d)(2)(A). Tulip Corporation has been in business longer and therefore has a more intimate relationship with the community. Not surprisingly then it is Tulip Corporation that received the less punitive fine; exactly the outcome predicted by Blackian theory.

**Table 4.8: Horizontal Dimension – Misdemeanors (Years in Business)**

<table>
<thead>
<tr>
<th>Years in Business</th>
<th>Avg. Fine</th>
<th>Average Fine of Revenue</th>
<th>Average Years in Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 50 Years in Business (n=11)</td>
<td>$957,403 ($100,000)</td>
<td>0.07 (0.002)</td>
<td>80 (78)</td>
</tr>
<tr>
<td>30 to 50 Years in Business (n=0)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>15 to 30 Years in Business (n=12)</td>
<td>$145,852 ($50,000)</td>
<td>1.6 (0.175)</td>
<td>28 (28)</td>
</tr>
<tr>
<td>5 to 15 Years in Business (n=10)</td>
<td>$154,753 ($27,500)</td>
<td>1.9 (0.4)</td>
<td>9 (11)</td>
</tr>
<tr>
<td>0 to 5 Years in Business (n=6)</td>
<td>$262,104 ($20,005)</td>
<td>7.85 (5.0)</td>
<td>5 (5)</td>
</tr>
</tbody>
</table>

Table 4.8 shows strong support for [H4]. As we can see the longer a corporation has been in business the average fine assessed will take up on average a smaller amount of overall corporate revenue. Corporations that have been in business for more than 50 years receive fines which take up on average 0.07% (Median at 0.002%) of overall corporate revenue. Corporations
that have been in business from 16 to 30 years receive fines which take up on average 1.6% (Median at 0.175%) of overall corporate revenue. Finally, corporations that have been in business 5 years or less receive fines that take up on average 7.85% (Median at 5%) of overall corporate revenue. This trend is predicted by Blackian theory.

Specific cases bring put Table 4.8 into context. In the case of \textit{U.S. v. Fujifilm Processing} the corporate defendant negligently violated silver film levels in wastewater and though samples were taken employees did not report them to the company or city. Fujifilm Processing has been in business for 78 years and received which took up 0.0002% of overall corporate revenue. In the case of \textit{U.S. v. Wagner Construction, JV} the corporate defendant had two employees which operated a forklift in a manner that caused Plasti-Kote, which contains toluene, to spill onto the ground and into the local sewer system. Wagner Construction, JV has been in business for 5 years and received a fine that took up 8.5% of overall corporate revenue.

Both corporations were charged with one count under 33 USC 1319(c)(1)(A) and have similar factual situations. Fujifilm Processing Corporation has been in business the longest and received a less punitive fine than Wagner Construction, JV. Holding all else constant it is expected that Fujifilm would have the less punitive fine because being in business longer it has a more intimate relationship with the community – this outcome is what is predicted by pure sociology.

\textbf{Table 4.9: Organizational Dimension – Felonies}

<table>
<thead>
<tr>
<th>Number of Board Members</th>
<th>Average Fine</th>
<th>Average Fine of Revenue</th>
<th>Avg. Number of Board Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 or more board members (n=11)</td>
<td>$5,809,091 ($3,000,000)</td>
<td>0.66 (0.17)</td>
<td>38 (40)</td>
</tr>
<tr>
<td>6 to 20 board members (n=7)</td>
<td>$480,900 ($500,000)</td>
<td>13.87 (1)</td>
<td>9 (8)</td>
</tr>
<tr>
<td>1 to 5 board members (n=51)</td>
<td>$442,628 ($100,000)</td>
<td>17.76 (2.5)</td>
<td>2(1)</td>
</tr>
</tbody>
</table>
Table 4.9 shows strong support for [H5]. The organizational dimension of social space refers to the corporation’s ability to engage in collective action and accomplish a goal (Black, 1976). Table 4.9 shows that corporations with the fewest board members receive fines taking up the largest amount of corporate revenue while corporations with the most board members receive fines taking up the smallest amount of corporate revenue. Looking at Table 9 corporations with 1 to 5 corporate board members receive fines which take up an average of 17.76% (Median of 2.5%) of overall corporate revenue. Corporations with 6 to 20 corporate board members receive fines which take up on average 13.87% (Median of 1%) of corporate revenue. Finally, we see that corporations with 21 or more corporate board members receive fines which take up on average 0.66% (Median of 0.17%) of corporate revenue. This trend is exactly what is predicted by pure sociology.

Specific cases can help illustrate the trend we are seeing in Table 4.9. In the case of U.S. v. Acuity Specialty Products Inc. the corporate defendant instructed its employees to limit wastewater discharges so the EPA could not conduct proper testing. This conduct went on for 5 years and the corporation was charged with 19 different violations at 2 sites at the same facility. Acuity Specialty Products Inc. has 37 corporate board members and received a fine taking up 0.6% of overall revenue. In the case of U.S. v. Magnagro International the corporate defendant, for a period of 10 years, knowingly had its employees pumping non treated and contaminated wastewater into the city sewer system without a permit. Magnagro International has only 1 corporate board member and received a fine which took up 20% of overall corporate revenue.

Both corporations have similar factual situations and were initially charged with multiple counts under 33 USC § 1319(c)(2)(A) but each company only plead out to one count. Once again we would expect that the punitiveness of the fines should be similar, however they are not.
Holding all else equal we see that Acuity Specialty, the corporation with the largest number of board members, received the less punitive fine. The Acuity Specialty outcome is what pure sociology predicts.

**Table 4.10: Organizational Dimension – Misdemeanors**

<table>
<thead>
<tr>
<th>Number of Board Members</th>
<th>Average Fine</th>
<th>Average Fine of Revenue</th>
<th>Avg. Number of Board Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 or more board members (n=7)</td>
<td>$1,025,661 ($100,000)</td>
<td>0.073 (0.002)</td>
<td>36 (37)</td>
</tr>
<tr>
<td>6 to 20 board members (n=6)</td>
<td>$500,133 ($175,000)</td>
<td>1.24 (0.06)</td>
<td>14 (14)</td>
</tr>
<tr>
<td>1 to 5 board members (n=26)</td>
<td>$131,074 ($27,500)</td>
<td>3.72 (0.5)</td>
<td>2 (1)</td>
</tr>
</tbody>
</table>

Table 4.10 shows strong support for [H5]. Corporations that have 1 to 5 corporate board members receive fines which take up on average 3.72% (Median of 0.5%) of overall corporate revenue. Corporation that have 6 to 20 corporate board members receive fines which take up on average 1.24% (Median of 0.06%) of corporate revenue. Finally, corporations that have 21 or more corporate board members receive fines which take up on average 0.073% (Median of 0.002%) of overall corporate revenue. This trend in Table 4.10 is exactly what is predicted by Blackian theory – as the number of corporate board members goes up the fine as a percentage of revenue goes down.

Specific cases show the detail in the trends from Table 4.10. In the case of *U.S. v. Chief Ethanol Fuels* the corporate defendant negligently discharged water into the Big Blue River that was over 90 degrees Fahrenheit and with a pH below 5.0. Chief Ethanol Fuels has 26 corporate board members and received a fine which took up 0.003% of overall corporate revenue. In the case of *U.S. v. Jerry’s Metal Finishing Company* negligently discharged waste water with pH below 5.0 into the city’s local sewer system. Jerry’s Metal Finishing has 1 corporate board member and received a fine which encumbered 0.4% of overall corporate revenue. While both
corporations received fines which took up less than 1% of their corporate revenue the important point to take away is that one company was still treated less punitively than the other.

Both companies have similar factual situations and were prosecuted under 33 USC § 1319(c)(1)(A). Holding all else constant Blackian theory predicts the corporation with the larger number of corporate board members to have the less punitive fine. That is what we see in the two cases above. Chief Ethanol has more corporate board members than Jerry’s Metal Finishing and thus received a less punitive fine – this is the outcome predicted by Blackian theory.

**Table 4.11: Normative Dimension – Felonies and Misdemeanors**

<table>
<thead>
<tr>
<th>Prior Violations</th>
<th>Avg. Fine</th>
<th>Avg. Fine of Revenue</th>
<th>Avg. Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or More Violations – Felonies (n=21)</td>
<td>$(3,059,069)</td>
<td>17% (1.7%)</td>
<td>$(4,658,196,781)</td>
</tr>
<tr>
<td></td>
<td>($700,000)</td>
<td></td>
<td>($15,500,000)</td>
</tr>
<tr>
<td>No Prior Violations – Felonies (n=48)</td>
<td>$(533,331)</td>
<td>13.74 (0.875%)</td>
<td>$(615,777,779)</td>
</tr>
<tr>
<td></td>
<td>($275,000)</td>
<td></td>
<td>($6,999,000)</td>
</tr>
<tr>
<td>One or More Violations – Misdemeanors</td>
<td>$(400,416)</td>
<td>0.12 (0.265%)</td>
<td>$(287,128,714)</td>
</tr>
<tr>
<td>(n=7)</td>
<td>($175,000)</td>
<td></td>
<td>($75,697,000)</td>
</tr>
<tr>
<td>No Prior Violations – Misdemeanors (n=32)</td>
<td>$(349,558)</td>
<td>3.3 (0.04%)</td>
<td>$(13,951,614,531)</td>
</tr>
<tr>
<td></td>
<td>($87,500)</td>
<td></td>
<td>($14,725,000)</td>
</tr>
</tbody>
</table>

Table 4.11 gives only moderate support for [H6]. Rows one and two are for felony cases – row one is for felony cases with prior violations of environmental laws and row two is for felony cases that have no prior environmental law violations. First we see that when companies are charged with a felony receive fines which take up on average 17% (Median at 1.7%) of corporate revenue. Meanwhile corporations charged with felonies that do not have a prior action receive fines which take up on average 13.74% (Median at 0.876%) of revenue. This is the general trend predicted by Blackian theory.

However, corporations charged with misdemeanors have outcomes not in line with Blackian theory. Rows three and four are for misdemeanor cases – row three is for misdemeanor cases with prior violations of environmental laws and row four is for misdemeanor cases that have no prior environmental law violations Table 4.11 shows, corporations charged with a
misdemeanor and have one or more prior actions receive fines which take up on average 0.12% (Median at 0.265%) of corporate revenue. Corporations charged with misdemeanors that do not have a prior action against it receive average fines which take up on average 3.3% (Median at 0.04%) of revenue. Oddly, it is the less respectable corporations which are receiving the less punitive fine.

A problem here is that certain corporations are having an undue influence upon the results. Every corporation in this dataset which has a revenue under one million dollars has not committed a prior violation - yet their average fine takes up a larger average percentage of corporate revenue than any other corporation in this dataset – thus unduly influencing the results. Specifically, in felony or misdemeanor cases under the normative dimension the results will appear as though corporate defendants without a prior action against it are still receiving uncharacteristically punitive fines. For example, felony cases where there is not a prior action against a corporation will result in a fine which takes up on average 13.74% of overall corporate revenue. Considering that the average revenue of corporations charged with felonies and no prior violation is $615,777,779 we would expect to see these corporations to receive fines which take up much less than 13.74% of overall corporate revenue – especially with what we know from Table 4.1.

Outcomes Differing from Pure Sociology:

Because we are using 108 cases and looking at overall trends it must be acknowledged that there are going to be some outcomes that Blackian theory would not predict. This does not mean the theory is inaccurate – it likely means that the data in this thesis is incomplete and thus there is a variable we have not accounted for. That said as the above tables show Blackian
theory on a whole is predicting the general outcomes we would expect but it is important to discuss a couple of cases which do not conform to the theory.

Looking specifically at the vertical dimension the best examples are the cases of U.S. v. Hawkings Construction and U.S. v. Herbst Construction. Hawkings Construction is the general contractor for a construction project along Interstate 85 in Nebraska and Herbst Construction is a subcontractor of Hawkings Construction. Both companies were prosecuted under 33 USC § 407 for allowing too much sand from the construction site to seep into the Platte River. Hawkings Construction received a fine of $25,000 which took up 0.003% of overall corporate revenue while Herbst Construction received a fine of $7,500 which took up 0.005% of overall corporate revenue. Hawkings Construction has a higher corporate revenue, has more employees, spends more money on advertising, has been in business longer, and neither company has any previous violations of environmental law. The only difference between the two companies is the general and subcontractor distinction. Nonetheless Blackian theory predicts Herbst Construction should have received the more punitive fine but it was Hawkings Construction which received the more punitive fine.

**Ordered Logit Regression Analysis:**

This section is devoted to presenting an ordered logit regression analysis (OLR). I have decided to use an OLR analysis instead of an ordinary least squares regression analysis (OLS) for two reasons. The decision to use an OLR analysis is driven by an empirical reality – the data for this thesis has a large number of outliers in both the dependent and independent variables which equates to a high variance score and in turn can lead to poor slope and standard error estimates.

---

8 I will not create OLM models analyzing misdemeanor cases. The reason is of the 108 cases in this thesis only 39 of them are misdemeanors. There are just not enough cases to justify an OLM analysis with only misdemeanor cases.
For example, the dependent variable has a case where the fine as a percentage of revenue is 0.00004% and another case where the fine as a percentage of revenue is 300%. Another example can be found in the independent variable revenue. One corporation has yearly revenue of $199,000 and another corporation has yearly revenue of $38,000,000,000. Examples like these are found throughout the dataset and are numerous enough to give a variance score of 6.37 when running an OLS analysis. A variance score of 6.37 is far too high; to get the variance score down to an acceptable level would require deleting at least 8 cases. Because there are so few cases in this dataset to begin with avoidance of case deletion should be of primary importance. Therefore OLR regression allows for researchers to better capture the dynamics seen in these types of datasets which do not lend themselves well to an OLS analysis (Long and Freese, 2004: 119-20; Winship and Mare, 1984).

The dependent variable fine as a percentage of revenue was cut into the following three categories: (1) Low punitiveness = 0% to 1%, (2) Medium punitiveness = 1% to 5% and (3) High punitiveness = 5% and greater.

The revenue variable was cut into the following three categories: (1) Low vertical status = $0 to $1,000,000, (2) Medium vertical status = $1,000,000 to $1,000,000,000 and (3) High vertical status = $1,000,000,000 and greater. Admittedly, the categorization of the revenue variable (and subsequent variables) appear arbitrary. However, there is no prior study to look at for guidance on where to make a cut off from one category to another. Therefore, I chose cutoffs based upon 2 considerations. The first is ease of interpretation – all cutoffs are made in an attempt to use round/whole numbers. The second reason is an attempt to get an even number of cases into each category.
The employees variable was cut into the following three categories: (1) Low intimacy = 1 to 10 employees, (2) Medium intimacy = 11 to 50 employees and (3) High intimacy = 51 or more employees. Continuing with the horizontal dimension the years in business variable was split into the following three categories: (1) Low integration = 1 to 10 years in business, (2) Medium integration = 11 to 25 years in business and (3) High integration = 26 or more years in business.

The prior actions variable was put into the following three categories: (1) High respectability = 0 prior actions, (2) Medium respectability = 1 prior actions and (3) Low respectability = 2 or more prior actions.

The advertising budget variable was placed into the following three categories: (1) Low cultural prominence = budgets between $0 and $10,000 a year, (2) Medium cultural prominence = budgets between $10,000 and $100,000 a year and (3) High cultural prominence = budget of $100,000 or more a year.

Finally, the corporate board members/management variable was cut into the following three categories: (1) Low organizational status = 1 manager or board member, (2) Medium organizational status = 2 to 10 managers/board members and (3) High organizational status = 11 or more managers/board members.

The advantage of putting the dependent and independent variables into three categories has two advantages. First is that it will allow us to actually see how each dimension of social space influences the punitiveness of a fine assessed against a corporation for violating environmental criminal laws. Second, creating the categories will allow for a type of “global social status” indicator to be applied for to each corporate defendant thus allowing for a big
picture view of how a fine’s punitiveness is influenced by overall social status. This will be detailed in Table 4.13.

**Table 4.12: Ordered Logit Regression Analysis**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>.285 (-1.25)**</td>
<td>.273 (-1.29)**</td>
<td>.233 (-1.45)**</td>
</tr>
<tr>
<td>Employees</td>
<td>1.344 (0.29)</td>
<td>1.22 (0.20)</td>
<td>.614 (-0.48)</td>
</tr>
<tr>
<td>Years in Business</td>
<td>.718 (-0.33)</td>
<td>.71 (-0.33)</td>
<td>1.61 (0.47)</td>
</tr>
<tr>
<td>Advertising Budget</td>
<td>.274 (-1.29)**</td>
<td>.294 (-1.22)**</td>
<td>.247 (-1.39)**</td>
</tr>
<tr>
<td>Number of Managers</td>
<td>.811 (-0.21)</td>
<td>.754 (-0.28)</td>
<td>.650 (-0.42)</td>
</tr>
<tr>
<td>Prior Actions</td>
<td>1.94 (0.66)*</td>
<td>1.84 (0.61)*</td>
<td>2.14 (0.76)*</td>
</tr>
<tr>
<td>Death</td>
<td>1.82 (0.59)</td>
<td>1.37 (0.32)</td>
<td></td>
</tr>
<tr>
<td>Felony</td>
<td>2.97 (1.09)**</td>
<td>2.36 (0.86)*</td>
<td></td>
</tr>
<tr>
<td>Actual Release</td>
<td>1.22 (0.19)</td>
<td>1.70 (0.53)</td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td></td>
<td></td>
<td>.976 (-0.23)**</td>
</tr>
<tr>
<td>College</td>
<td></td>
<td></td>
<td>1.023 (0.02)</td>
</tr>
<tr>
<td>$75K per year</td>
<td></td>
<td></td>
<td>1.036 (0.04)</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-80.07</td>
<td>-77.20</td>
<td>-72.60</td>
</tr>
<tr>
<td>Pseudo R^2</td>
<td>0.234</td>
<td>0.26</td>
<td>0.30</td>
</tr>
<tr>
<td>Chi Squared</td>
<td>48.78***</td>
<td>54.47***</td>
<td>63.57***</td>
</tr>
</tbody>
</table>

Table 4.12, model 1 tells an interesting story. All of the independent variables, except for the number of employees, are in the direction predicted by Blackian theory. Take for example the revenue variable, which is significant at the .05 level (p < .05). Table 4.12 shows that as vertical status increases corporations are 0.285 times less likely (or 79% less likely) to receive a more punitive fine. Let us take another example – the prior actions variable – which is Table

---

9 A second analysis was run where the independent variables were all coded as dummy variables rather than ordinal variables. The results did not change. The significance and direction of each independent variable remains the same.

10 Tables 4.12 and 4.13 should be read the following way: Odds Ratio (Coefficient). Significance is reported as: p<.10 = *, p<.05=**, p<.01=***
4.12, model 1 tells an interesting story. All of the independent variables, except for the number of employees, are in the direction predicted by Blackian theory. Take for example the revenue variable, which is significant at the .05 level (p < .05). Table 4.12 shows that as vertical status increases corporations are 0.285 times less likely (or 79% less likely) to receive a more punitive fine. Let us take another example – the prior actions variable – which is significant at the .10 level (p < .10). As the respectability of corporations decrease they are 1.94 times more likely (or 94% more likely) to receive a more punitive fine than corporations with high respectability. Unfortunately the employees variable is not in the predicted direction so controls will be introduced to see if there is some unseen effect.

Introducing the control variables in models 2 and 3 does not change the story from model 1. The employees variable is still not in the predicted direction – however, it is not significant and has a very small effect upon punishment. The revenue variable is still significant at the .05 level (p < .05). In model 2 as vertical status increases corporations are .273 times less likely (or 73% less likely) to receive a more punitive fine. Moreover the prior actions variable is still statistically significant at the .10 level (p < .10). As the respectability of corporations decreases they are 1.84 times more likely (or 84% more likely) to receive a highly punitive fine. The control variable for felony is also statistically significant at the .05 level (p < .05) – which is to be expected. With model 3 we see that as the percentage of individuals with a college degree and households with a yearly income of $75K or more a year will increase the odds of receiving a more punitive fine – neither finding is statistically significant. Interestingly, as the percentage of whites around a hazard site increases it corresponds with a .976 decrease (or a 3% decrease in likelihood) in odds of receiving a more punitive fine. This finding is highly significant and not predicted by pure sociology. One reason for this finding might be the fact there is not much
variance in the population of whites living within one mile of a hazard. On average each 1 mile ring contains 70% white and this likely influences the finding. Further, while one would expect victim characteristics to have a serious impact they do not. The likely reason is a lack of social information (Black, 1989). There is no reason to believe prosecutors in these cases have any idea what the victim demographics around an environmental hazard are (Atlas, 2001). Therefore, it is not a surprise that victim characteristics do not influence the trends seen in Table 4.12.

Table 4.13: Ordered Logit Regression Analysis and Overall Social Status

<table>
<thead>
<tr>
<th></th>
<th>Model 4 (n=108)</th>
<th>Model 5 (n=108)</th>
<th>Model 6 (n=108)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Social Status</td>
<td>.053 (-2.93)***</td>
<td>.043 (-3.14)***</td>
<td>0.031 (-3.46)***</td>
</tr>
<tr>
<td>Medium Social Status</td>
<td>.328 (-1.11)***</td>
<td>.264 (-1.33)***</td>
<td>0.253 (-1.37)***</td>
</tr>
<tr>
<td>Death</td>
<td>1.93 (0.66)</td>
<td>0.512 (1.67)</td>
<td></td>
</tr>
<tr>
<td>Felony</td>
<td>3.31 (1.19)***</td>
<td>1.07 (2.93)**</td>
<td></td>
</tr>
<tr>
<td>Actual Release</td>
<td>1.11 (0.10)</td>
<td>1.46 (0.38)</td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td></td>
<td>0.98 (-0.02)***</td>
<td></td>
</tr>
<tr>
<td>College</td>
<td></td>
<td>1.02 (0.02)</td>
<td></td>
</tr>
<tr>
<td>$75K per Year</td>
<td></td>
<td>1.03 (0.03)</td>
<td></td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-89.76</td>
<td>-85.81</td>
<td>-82.08</td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.14</td>
<td>0.17</td>
<td>0.21</td>
</tr>
<tr>
<td>Chi-Square</td>
<td>29.39***</td>
<td>37.29***</td>
<td>44.76***</td>
</tr>
</tbody>
</table>

Before discussing the results in Table 4.13 a brief description of how I differentiate between “High, Medium and Low Social Status” to create a “global social status” is necessary. This method of creating a “global social status” is derived from Phillips (2009: 828). Regarding each independent variable a corporation can have high, medium or low status specific to that

---

11 “Low Social Status” corporations is the reference category
variable. Corporations that have high social status are presumed to have a combination of high vertical status, high respectability, high organizational status and the like. The same goes for medium and low social status corporations.

For example with wealth, I give a corporation a ranking of high vertical status if it has corporate revenue of one billion dollars or more. I give a corporation a score of low vertical status if it has corporate revenue below one million dollars. If a corporation has high vertical status I give it a score of 1 towards being considered an overall high status defendant. This method is used for all the independent variables. Another example is the advertising budget variable. If a corporation has an advertising budget of $100,000 or more then it receives a score of 1 towards being a high status corporation. If the corporation has an advertising budget of less than $5,000 it receives a score of 1 toward being a low status corporation. In order to be a “high status defendant” a corporation must have the majority of the six independent variables determined as high status, high integration/intimacy for the horizontal dimension and high respectability for the normative dimension.

Overall social status scores range from 0 to 6. For example, if a corporation has 4 independent variables ranked as high status and 2 independent variables ranked as medium status the corporation is considered a “high status” defendant because the majority of the independent variables are of high status. Appendix A contains the overall scoring procedure used to determine status.

Models 4, 5 and 6 give a wonderful picture of how overall social status determines the punitiveness of fines assessed against corporate defendants. Model 4 shows corporations with high social status are .053 times less likely (or 95% less likely) than corporations with low social status to receive a more punitive fine. Corporations with medium social status are .328 times
less likely (or 68% less likely) than corporations with low social status to receive a more punitive fine. Both findings are statistically significant at the .01 level (p < .01).

Models 5 and 6 show that even with controls introduced the influence of overall social status remains the same. For instance, in Model 5 Corporations with high social status are 0.04 times less likely (or 96% less likely) than corporations with low social status to receive a more punitive fine. Corporations with medium social status are .264 times less likely (or 74% less likely) than corporations with low social status to receive a more punitive fine. Like Model 3, both findings are statistically significant at the .01 level (p < .01). Finally, in Model 6 we see that controlling for crime seriousness and high victim status the effects are stable. Both high status and medium corporations have greater odds of receiving a less punitive fine than corporations with low social status. Further, the effect is greater for high status corporations than medium status corporations. Still of interest is that the punitiveness of a fine decreases with the greater number of whites living within one mile of a hazard site – which is not an expected finding.

Conclusion:

Overall, the above analysis strong support for all of the hypotheses laid out in chapter 3. For example, both the qualitative and quantitative analysis show that when a corporation’s vertical status increases they will experience less law. The quantitative section goes a step further and shows that corporations with a high global social status will receive a lesser amount of law than corporations with a medium or low global social status. These trends all hold even when controlling for the facts of the case and victim characteristics. The bottom line is that this chapter shows pure sociology can predict the outcomes of prosecutions against corporations when they violate environmental criminal laws.
CHAPTER 5
CONCLUSION, IMPLICATIONS AND LIMITATIONS

As demonstrated in Chapter 4 this study presents strong support for pure sociology. Specifically, pure sociology predicts the outcome of criminal prosecutions against corporations for environmental law violations. The findings of this thesis aside – there are implications for future research. Further, this study has its own limitations which need to be addressed.

That said, this thesis has two major contributions. The first is that this thesis applies pure sociology to environmental crimes - an area of law that has been left virtually untouched by academics. Second, this thesis represents the first empirical analysis looking at the punitiveness of fines assessed against corporations for committing environmental crimes.

Implications for Future Research:

The first implication to discuss regards the measurement of law as a quantitative variable. The traditional assumption, and method to measure law, is to look at the amount of a fine assessed against a person or corporation for violations of law. However, law can be measured in a variety of ways (Black, 1976:3). Nonetheless the traditional argument is that larger fines equal more law (Black, 1976:3). Chapter 4 shows us corporations with high vertical status, high organizational capacity, high community integration and high levels of intimacy all receive large fines. For example in Table 1 billion dollar corporations receive average fines of $5,253,846 while corporations with revenue between one million and ten million dollars receive an average fine of $3,206,231. Finally corporations with revenue under one million dollars receive an average fine of $680,417. Therefore we would say that corporations with higher vertical status
are being punished more severely than corporations with lower vertical status. These results do not make sense using traditional measures of law under pure sociology.

However, any analysis looking at corporations cannot simply look at the fines as assessed. The reason is corporations are considered to be ‘a person’ under the law. Corporations are not punished with the variety of methods used in the punishment of a flesh and blood person. For example, a person experiences more law when they receive prison/jail time instead of probation. Further a person experiences more law when they receive probation instead of a fine. The only punishment available to prosecutors going after corporations is a fine. Thus the only way to truly measure the quantity of law is to measure how the fine affects the one thing a corporation is legally mandated to protect - its bottom line. Therefore, any study using any variety of theories investigating legal outcomes for corporations must look at how the fines encumber corporate revenue. The results of this study highlights the need for researchers who decide to look at fines assessed against corporations in any context they must look at the fine and how the fine impacts a corporation’s profits.

A second implication regarding future research revolves around law and economics. As discussed in chapter 2, law and economics is the primary analytical theory within the legal and socio-legal community. In the context of criminal law, law and economic reasoning tends to rely upon deterrence theory as its primary theoretical base for analysis. This study calls into serious question the deterrent effect criminal sanctions for violating environmental laws have upon corporations. If anything this study would suggest prosecutors are not crafting plea agreements that could hope to have a deterrent effect on large corporations.

For example a violation of 33 USC § 1319(c)(2)(A) carries a maximum fine of $500,000 for each violation and further states fines can be crafted to reflect “...as justice requires.” This
latter part means prosecutors can fine a corporation more than the statutory maximum if there is reason to do so – e.g. clean up costs, harm to victims, damage to private property, etc... The “...as justice requires” clause also allows prosecutors to craft plea agreements which show leniency. Further, this statute states that each day is a new violation – in practice this means if a corporation is leaking a regulated substance into a prohibited waterway each day this leak occurs is a new violation. Thus if the leak occurred for five days the corporation could be looking at a maximum fine of $2,500,000. However, when we look at all corporations we see the assessed fines only average out to be 33% of what the maximum fine could be for all corporations – this means it would be the rarest of occasions that the hypothetical situation just described the corporation would be fined the full $2,500,000. In fact the corporation should expect to receive a fine of $825,000. This fine on its face is large but what if the corporation is a billion dollar corporation or even a multi-million dollar corporation? As we saw in chapter four these corporations tended to receive fines which take up less than 1% of their overall revenue while smaller corporations just get hammered by the fines assessed against them. The fine of $825,000 is nothing to large corporations. In fact, most large corporations budget fines for environmental law violations into their yearly expenditures (Baken, 2004; Gilding, 2011; Gould, et al., 2004; Stretesky, 2006).

The data above would suggest large corporations might not be deterred by fines because they are not ‘painful’ enough. Law and economics/deterrence theories have a very tough job if they are going to be used to explain the outcomes seen in this thesis. Therefore, deterrence theorists need to engage with data similar to this thesis and attempt to explain why large corporations are receiving what appears to be non-punitive fines.
Limitations:

The biggest limitation of this study is the number of cases used in the analysis. This thesis uses 108 cases from 2005 to 2010. Criminal prosecutions for environmental crimes have been going on since the 1970s – this sample is not generalizable to the broader population of criminal prosecutions against corporations for violations of environmental law. To really understand the dynamics of criminal prosecutions against corporations for environmental crimes we need to have more than just a sample of cases from a closed time period – we need cases spanning the entire history of prosecutions.

A second limitation is that this study does not compare civil and criminal cases. By not comparing civil and criminal cases we cannot see how law behaves within the different contexts of law. Further, we cannot determine why some corporations are prosecuted criminally and other corporations are pursued civilly. Therefore in order to have a full understanding of why one form of law is chosen over another future studies must compare civil and criminal violations to one another.

At the end of the day, and limitations aside, this study provides insight into an area of law not explored by social science researchers. We see that cases from 2005 to 2010 generally have outcomes predicted by Blackian theory. Namely, corporations with high social status receive the less punitive fines.
References


## Appendix A

<table>
<thead>
<tr>
<th></th>
<th>Fine</th>
<th>Fine of Revenue</th>
<th>Revenue</th>
<th>Employees</th>
<th>Years in Business</th>
<th>Advertising Budget</th>
<th>Prior Hazards</th>
<th># of managers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine of Revenue</td>
<td>0.05</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>0.15</td>
<td>-0.06</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>-0.02</td>
<td>-0.04</td>
<td>0.2</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years in Business</td>
<td>0.11</td>
<td>-0.2</td>
<td>0.01</td>
<td>0.1</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising Budget</td>
<td>0.23</td>
<td>-0.23</td>
<td>0.2</td>
<td>0.13</td>
<td>0.4</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior Hazards</td>
<td>0.3</td>
<td>0.14</td>
<td>-0.04</td>
<td>-0.1</td>
<td>0.2</td>
<td>0.3</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td># of managers</td>
<td>0.3</td>
<td>-0.14</td>
<td>0.22</td>
<td>0.17</td>
<td>0.3</td>
<td>0.7</td>
<td>0.22</td>
<td>1.00</td>
</tr>
<tr>
<td>Death</td>
<td>-0.04</td>
<td>-0.03</td>
<td>-0.03</td>
<td>-0.03</td>
<td>0.04</td>
<td>0.01</td>
<td>-0.04</td>
<td>0.05</td>
</tr>
<tr>
<td>Felony</td>
<td>0.12</td>
<td>0.22</td>
<td>0.13</td>
<td>-0.12</td>
<td>0.03</td>
<td>-0.1</td>
<td>0.11</td>
<td>-0.1</td>
</tr>
<tr>
<td>Actual Release</td>
<td>0.1</td>
<td>-0.25</td>
<td>0.1</td>
<td>0.18</td>
<td>0.21</td>
<td>0.03</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td>-0.23</td>
<td>-0.07</td>
<td>0.02</td>
<td>0.03</td>
<td>-0.05</td>
<td>-0.1</td>
<td>0.1</td>
<td>-0.2</td>
</tr>
<tr>
<td>College or More</td>
<td>-0.15</td>
<td>0.12</td>
<td>0.03</td>
<td>0.1</td>
<td>-0.03</td>
<td>0.04</td>
<td>0.12</td>
<td>-0.05</td>
</tr>
<tr>
<td>$75K or More</td>
<td>-0.11</td>
<td>0.14</td>
<td>0.04</td>
<td>-0.02</td>
<td>0.02</td>
<td>-0.1</td>
<td>0.1</td>
<td>-0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Death</th>
<th>Felony</th>
<th>Actual Release</th>
<th>Whites</th>
<th>College or Higher</th>
<th>$75K or More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felony</td>
<td>-0.2</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual Release</td>
<td>0.1</td>
<td>-0.2</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites</td>
<td>-0.2</td>
<td>-0.1</td>
<td>-0.03</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College or More</td>
<td>-0.1</td>
<td>0.02</td>
<td>-0.12</td>
<td>0.5</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>$75K or More</td>
<td>-0.12</td>
<td>0.12</td>
<td>-0.2</td>
<td>0.5</td>
<td>0.7</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Appendix B

1. **Vertical Dimension:**
   a. High Status = Corporations with $10 million or more a year in revenue
   b. Medium Status = Corporations with a yearly revenue between $1 million and $10 million
   c. Low Status = Corporations with less than $1 million a year in revenue

2. **Cultural Dimension:**
   a. High Status = Advertising budget of $100,000 or more a year
   b. Medium Status = Advertising budget between $10,000 to $100,000 a year
   c. Low Status = Advertising budget less than $10,000 a year

3. **Horizontal Dimension:**
   a. High Status = 51 or more employees
   b. Medium Status = 11 to 50 employees
   c. Low Status = 1 to 10 employees
   d. High Status = 51 or more years in business
   e. Medium Status = 11 to 50 years in business
   f. Low Status = 1 to 10 years in business

4. **Organizational Dimension:**
   a. High Status = 21 or more
   b. Medium Status = 6 to 20
   c. Low Status = 1 to 5

5. **Normative Dimension:**
   a. High Normative Status = Corporation has no prior offenses
   b. Medium Normative Status = Corporation has only 1 prior offense
   c. Low Normative Status = Corporation has 2 or more prior offenses
Appendix C

For this thesis, I used two different measures of law (dependent variables). The first is a traditional and direct measure of law and the second is untraditional and measures law indirectly. The first dependent variable used is the total fine assessed against a corporation after being prosecuted for the commission of an environmental crime. The second dependent variable is the percentage the total fine represents of a corporation’s gross revenue (e.g. Fine/Revenue = Fine as a % of Revenue). The fine as a percentage of revenue implies that the variable is measuring the impact a fine has on a corporation – not the quantity of law. Pure sociologists are not intending to measure the impact of law upon an actor (Black, 1980). Black (1980) argued that the goal for researchers is to “measure the absolute magnitude of law in each of its manifestations. This is known as interval measurement” (Black, 1980: 212). My first dependent variable – the total fine – is an interval measurement of the absolute magnitude of law. A $50,000 fine is more law than a $5,000 fine plain and simple (Black, 1976:3; Black, 1980: 213-214).

Chapter 4 of this thesis demonstrates reliance upon the traditional interval thinking when measuring law in the context of corporate environmental crime produces results opposite of what is predicted by pure sociology. My analysis showed that as corporate revenue (e.g. vertical status) increases the fines increase – pure sociology does not predict that outcome. This finding from tables 4.1 and 4.2 are similar to the results found in tables 4.3 through 4.10. Staying with traditional thinking cannot help but lead to the following conclusions: (1) Pure sociology cannot predict outcomes in regards to corporations being prosecuted for commission of environmental crimes or (2) using traditional measures of law in the corporate crime world does not accurately capture law’s behavior. I believe the second conclusion is accurate and now proceed to give a logical and theoretical reason for using a nontraditional and indirect measure of law.
As I discussed in Chapter 3 of this thesis prosecutors are mandated by law to create fines with an eye towards the corporation’s ability to pay and the impact the fine will have on the corporation (prosecutors are the focus because all cases analyzed in this thesis resulted from a plea bargain – not a trial). This mandated focus is different than other forms of criminal law. For instance prosecutors and judges are not mandated to recommend/give prison sentences to individuals who murder with an eye towards the defendant’s ability to actually “do the time.” The same goes for people who receive parking tickets – the fine is the same regardless of who gets the ticket and thus no inquiry is made into a defendant’s ability to pay. With environmental criminal law prosecutors must inquire into a defendant’s ability to pay. Therefore, to capture the true behavior of law in the context of corporate environmental crime researchers become logically mandated to measure law and its systematic variation with the ability to pay a fine. If prosecutors were not mandated to inquire into a corporate defendant’s ability to pay the fine as a percentage of revenue variable would be inappropriate. Researchers can measure law indirectly by creating a variable that incorporates “an observable and quantifiable phenomena (e.g. corporate revenue) that varies systematically with the magnitude of law (e.g. monetary fine)” (Black, 1980). That is exactly what I have done in this thesis.

Black (1980: 216; footnote 11) gave an example of measuring the quantity of law (or magnitude of legal event) indirectly in the context of the law’s damage against a person’s reputation (i.e. normative status). The argument is that the quantity of law might be indirectly observed by its social implications such as inability to get a job after commission of a crime. My second dependent variable is the logical extension of this theoretical argument from the normative dimension to the vertical dimension. A fine assessed against a corporation has negative social implications upon vertical status. Corporations that can pay $500,000 fines with
ease because the fine is 0.05% of overall corporate revenue have only a small drop in vertical status as compared to a $500,000 fine taking up 10% of overall corporate revenue. Fines that take up a small percentage of overall revenue mean the corporation will have an easier time staying in business or even expanding the business. Therefore, my second dependent variable is measuring law indirectly – and capturing law’s true behavior in the context of corporate environmental crime.

Undoubtedly, the argument will arise that I am only measuring impact. I disagree. If impact was being measured there are certain aspects of a corporation that would need to be investigated – none of which I attempt to investigate. For example, corporations may receive repayment plans by prosecutors to aid in the likelihood corporate defendants will pay the assessed fine. I do not attempt to investigate this phenomenon. Further, I do not attempt to discover revenue monetary sources other than yearly revenue which a corporation can use to pay their fine. For instance, a corporation might receive a $50,000 fine and have revenue of $250,000 but have $5,000,000 in capital reserves or an insurance policy. Thus, while the fine as a percentage of revenue is high (e.g. 20%) the capital reserves or insurance policy makes ease of payment greater. These are only two examples but the idea should be straight forward – measuring impact involves much more than simply looking at how large the fine is in terms of its size compared to revenue.

This appendix provides a logical and theoretical basis for using the fine as a percentage of revenue dependent variable to measure law in the context of corporate environmental crime. Quantifying law in this manner is going to cause discomfort but that is a good thing. I leave it to the critics to provide the logical and theoretical basis for not using the fine as a percentage of revenue dependent variable. This challenge is provided with the idea that no matter what some
will never be convinced and I end with the words of Luc Ferry (2013) in his argument of using the abstract concept of love as the basis of political decision making: “Thinkers who live in the past are inevitably prone, however authentic or talented they may be, to turn into managers of a stock of negative judgments and produce nothing new to broaden people’s horizons...Every book takes some new object to deplore and even though it happens very often that the criticism is correct, there’s nothing we can do about it since it doesn’t lead anywhere, except to an impossible step backwards to restoration.”