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**AN EXAMINATION OF THE SOCIO-ECONOMIC DETERMINANTS OF
PUNISHMENT USING ABDUCTIVE POLYNOMIAL NETWORKS**

by

FARRUKH BEHZAD HAKEEM

A dissertation submitted to the Graduate Faculty in Criminal
Justice in partial fulfilment of the requirements for the
degree of Doctor of Philosophy, The City University of New
York

1996

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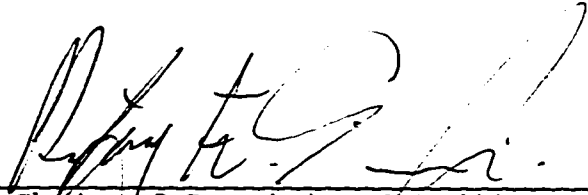
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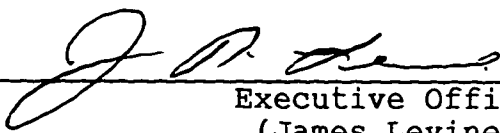
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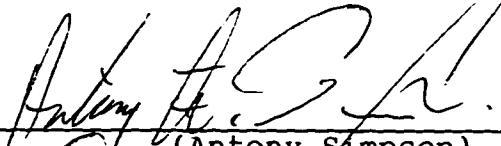


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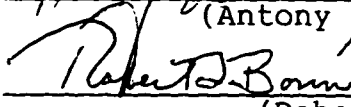
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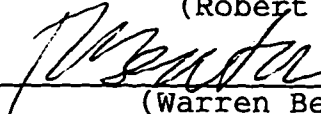
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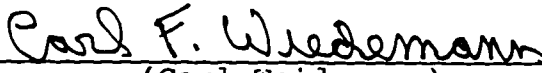
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Abstract

AN EXAMINATION OF THE SOCIO-ECONOMIC DETERMINANTS OF
PUNISHMENT USING ABDUCTIVE POLYNOMIAL NETWORKS.

by

FARRUKH BEHZAD HAKEEM

Adviser: Professor Antony E. Simpson

The purpose of this research is to examine aspects of the relationship between socio-economic conditions and imprisonment in a particular historical setting. Previous research suggests that this relationship is problematic and situationally variable. The approach taken in this dissertation reflects a belief that earlier studies can be faulted for their failure to take account of the fiscal climate of the state as an influence on the size of prison populations.

This analysis will employ the Marxist model, as developed by Rusche and Kirchheimer (1939) and widely applied (though with mixed results) in research conducted over the last half-century. This model will be modified according to the postulates of the model delineating the relationship between state spending and the development of capitalist society specified by O'Connor (1973). Although fiscal influences are

mentioned by Rusche and Kirchheimer it has not been integrated into a research model either by these authors or those who have followed them.

One important object of this research will therefore be to evaluate the usefulness of the Marxist approach to the analysis of the labor supply/imprisonment nexus, as this approach is represented by a modified and supposedly, improved version of a standard model. The project will at the same time attempt to determine the importance of fiscal factors on penal policy.

Characteristics of prison populations addressed will include race. This characteristic is important here mainly as an indicator of marginality. Findings in this area will, however, be of additional value in documenting the particular impact of penal policies on minorities.

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Chapter One: INTRODUCTION

Project Title: An Examination of the Socio-Economic Determinants of Punishment using Abductive Polynomial Networks.

I. INTRODUCTION:

The U.S. prison population has reached unprecedented proportions and continues to grow. With an incarceration rate of 426 prisoners per 100,000 population the U.S. has the highest incarceration rate in the entire world (Mauer, 1991). In spite of the high incarceration rate we do not feel any safer, nor is our society more secure. This leads us to question the role of punishment in society. A deeper analysis needs to be conducted to examine the phenomenon of punishment.

The purpose of this dissertation is to systematically and empirically examine the process of punishment within the socio-economic and situational context. This thesis will focus on the relationship between penal policy and the economy. Earlier analyses and theoretical perspectives have not generally offered a coherent picture of the penal process and its relationship to the other social processes. Most of the earlier studies on punishment have merely examined it from three different perspectives: penological, philosophical and sociological.

The penological perspective considered punishment as a technique of crime control. Within this instrumental framework, penal institutions and the processes of punishment had an obvious end: the restraint of the individual criminal and the reduction of crime rates. This approach looked upon the criminal justice system as an apparatus whose main objective was the control and management of crime (Walker 1969; Radzinowicz and Wolfgang 1971; Martinson 1974; Wilson 1975; Cook 1980).

The philosophical perspective focused on the normative bases of the penal system. This perspective regarded punishment as a unique moral problem, that examined how penal sanctions could be justified, what their appropriate objectives should be, and the conditions under which they could reasonably be imposed. The main focus was on what is just. It was based on ethical reasoning and moral appeal rather than on technical knowledge or empirical research. This tradition looked upon punishment as a moral puzzle which could be resolved by moral intuition and philosophical contemplation (Hart 1968, Acton 1969; Feinberg and Gross 1975; Honderich 1976; Bean 1981).

The sociological approach to punishment offered a different framework for the analysis of penal issues. Instead of treating punishment as a means to an end or a routine problem for moral philosophy, historians and sociologists envisioned punishment as a social institution.

As a consequence of this perspective, a series of questions were posed regarding punishment. Punishment was regarded as a historical and cultural artifact that was concerned not only with the control of crime but was also shaped by an array of social forces that had many further ramifications. This tradition examined the social bases of punishment, delineated the social implications of specific penal modes, and sought to uncover the structures of social action and the mesh of cultural meaning that gives modern punishment its distinctive forms, functions and effects (Ignatieff 1981; Garland and Young 1983; Jacobs 1983; Cohen 1985; Hirst 1986 Garland 1990).

Recently reformers such as Garland (1991) have suggested that there are four insightful theoretical perspectives on the institution of punishment -- Durkheimian, Marxist, Foucauldian and Eliasian. In each of these theories the focus seems to be either on power and control, or laws and institutions that encapsulate commonly shared values and sensibilities.

The Durkheimian perspective regards punishment as a morality-professing, solidarity-generating mechanism based on collective sentiments. Marxist enquiries portray punishment as an economically situated state apparatus that performs a political and ideological role in ruling class domination. The Foucauldian perspective focuses on the specific technologies of power-knowledge that operate in the

penal realm and links them to broader networks of discipline and regulation. The Eliasian tradition directs attention to the importance of cultural sensibilities and the "civilizing process" in the shaping of modern penal measures.

This project seeks to examine the social, cultural, economic and ideological correlates that condition the dynamics of punishment. It will postulate that systems of punishment are artifacts of concepts of the rule of law which are ideological and political in nature (Hay, 1975; Thompson, 1975).

The liberal ideal postulates that punishment operates through the rule of law. Under this ideal, punishment operates evenly across all situations and persons. As opposed to this view there are theories that stipulate that punishment is not invariant. One version of this thesis is the Marxist view that stipulates economic variation in the operation of the process of punishment.

This endeavor seeks to test the value of the Marxist theory attempting to explain the relationship between economic conditions and the rate of imprisonment. In doing so I have selected one version of the Marxist model and have therefore modified it to mirror factors that are consistent with the prevailing Marxist theory but have so far been overlooked in the applicable models.

This thesis examines the effect of socio-economic and fiscal factors on prison admissions. Aggregate level data

for state admission populations are examined for a period of 61 years (from 1926 to 1986). Abductive Information Modeling was used to discern variations in socio-economic and fiscal factors, with controls for crime, to determine whether these exert a significant influence on the process of punishment. Particular attention was focused on the economy, the labor market, racial distributions and fiscal constraints in order to determine their effect on punishment. A range of other factors were introduced as independent variables and a full explanation of their use will be outlined in chapter eight.

Chapter Two:

II. PUNISHMENT AND THE RULE OF LAW:

Punishment may be examined from two different and competing perspectives. As per the Liberal perspective, punishment operates according to the rule of law. All persons are treated impartially according to the dictates of the rule of law and the exercise of punishment is not affected by extra-legal factors. As opposed to the above perspective the Conflict theorists espouse the view that punishment is a social practice that supports the existing social and economic relations and is intimately linked to certain legal factors and the social and economic conditions within society.

The rule of law refers to a doctrine of the supremacy of the law. The rights of persons under the law are protected from arbitrary acts of the government through the regular courts of justice. This implies that government must be conducted according to law. A person affected by governmental action is able to challenge its legality before a court where the matter is adjudicated by an independent judge. Most formulations of this concept also include a political and moral content.

Throughout civilization there has been a widely held belief that law is necessary to society. The belief that law could assist in the problem of subjecting governmental power to control is of ancient origin. According to

Aristotle, government by laws was superior to government by men. Under the classical and Christian doctrines of natural law, there was a belief that there were universal and fundamental laws, compared to which actual human laws and governments were inferior. It is in these doctrines that we see the origins of the idea of government under law which manifested itself in different countries. Although doctrines of Royal absolutism were often propounded, these never prevailed in England. Events of the seventeenth century finally led to a subjection of the British monarchy to the law. The restriction of royal power and the part played by the courts in this process came to the fore when Dicey (1885) presented the rule of law as an important and distinctive part of the British constitution. According to Dicey, the rule of law has three distinct but related concepts: (a) the absolute supremacy or predominance of regular law in contrast to the influence of arbitrary power, and excludes the existence of arbitrariness, of prerogative, or even of wide discretionary powers of the government. (b) Equality before the law, or the equal subjection of all classes to the ordinary law of the land which is administered by the ordinary law courts; and (c) A formula for expressing the fact that the law of the constitution, the rules which in foreign countries constitute a constitutional code are not the source but the consequence of the rights of individuals, as defined and enforced by the

courts. The constitution is the product of the ordinary law of the land.

The state is essentially the realm of coercively sanctioned coordination, and its essence is that it has no competitors or alternatives. A liberal state must operate according to the rule of law. It must employ minimum coercion in dealing with its citizens. Liberalism is committed to constitutional government. Except in emergencies, where the preservation of a liberal regime could force governments to take powers that would otherwise be intolerable, the requisites of the rule of law extend to the ways whereby governments acquire power and exercise it. How this task is achieved varies.

The rule of law is a doctrine deriving from theories of natural law, which, in order to control the exercise of arbitrary power, the latter must be subordinated to impartial and well-defined principles of law. The concept that the day-to-day exercise of executive power must conform to general principles as administered by the ordinary courts. The Rule of Law is the supremacy or the predominance of law, as opposed to mere arbitrariness, or from some alternative mode which is not law, or determining or disposing of the rights of individuals (Hewart, 1929). It is of historic importance that the rule of law in the medieval and the early modern sense was the rule of superearthy law-- eternal law, divine law, natural law and

human law (Wilson, 1936).

Strictly speaking there is nothing difficult or impressive about the rule of law. It is merely a convenient way of referring to the fact that associations have rules and unless those rules are pretty generally kept and enforced the association breaks down and the activity which it was designed to promote becomes impracticable (Weldon, 1953).

In another sense the rule of law means the recognition of certain fundamental obligations as binding upon states in their dealings with one another. The United Nations claims to give effect to the rule of law. The International Commission of Jurists considers that the basic idea uniting lawyers in many different legal systems is a conception of the rule of law (Wade, 1959).

When we say that the supremacy or the rule of law is a characteristic of the English constitution, we generally include under one expression at least three distinct though kindred conceptions. We mean that no man is punishable or can be made to suffer in body or goods except for a distinct breach of law, established in the ordinary legal manner, before the ordinary courts of the land (Dicey, 1885).

The concept is usually intended to imply:

1. that the powers exercised by politicians and officials must have a legitimate foundation and;
2. that the law should conform to certain minimum standards

of justice (DeSmith, 1971).

According to Fuller (1971) the rule of law includes certain standards that define the characteristic virtues of a legal system. The Rule of Law includes values which are not derivable from a comprehensive political theory regarding the nature of good government, but is based on values that are inherent in the very notion of law itself. Not all the features of a good system of government can be derived from whatever values are implicit in the idea of a legal system. According to Unger (1978) the rule of law is used in liberal societies as a medium of preserving social order, such that the perceived generality of the laws and the autonomy of the legal processes contribute toward accepting the existing imbalances. Much of the strength of this concept would be lost if the courts are perceived as partial.

In order to understand the concept of the Rule of Law and its relationship to punishment we will examine the nature of law and then the nature of the state.

THE NATURE OF LAW:

In spite of the distinct historical diversity in conceptions of law, most conceptions of the law can be categorized into six broad classes: natural law, legal positivism, historical jurisprudence, sociological jurisprudence, Marxism and legal realism. In the fifth

century B.C. the Sophists and Socrates along with their disciples examined the question of the nature of law. Both these groups acknowledged the distinction between things that exist by nature (physics) and those that endure by human-made conventions (nomos). The Sophists were inclined to place law in the category of human-made conventions whereas the philosophers Socrates, Plato and Aristotle put law in the first category. This culminated in the debate that continues even today -- whether law is nature and reason or convention and will. The legal positivists aver that law consists of human-made conventions whereas those thinkers who belong to the Natural law tradition believe that the law constitutes nature and reason.

Natural law may be found in Plato's idea of the just state -- this view echoes the naturally hierarchical structure of human society. Regulated by wisdom, the ideal state does not need conventional law since wisdom by itself is a recognition of the primacy of the natural order. Aristotle distinguished between paramount natural law which established general precepts and human-made law which merely imposed sanctions for the violation of these precepts. The Roman statesman and philosopher Cicero was the first to advance a comprehensive theory of natural law. According to Cicero "true law is right reason in accord with nature; it is of universal application, unchanging and everlasting .."

Saint Augustine synthesized Christian philosophy with

Stoic legal thinking by associating eternal, divine law with God's reason and will and by regarding human law as stemming from and circumscribed by divine law. The natural law legacy culminated in the theory of Saint Thomas Aquinas. This tradition synthesized Aristotelian, Stoic, Roman law along with Christian elements. Aquinas conceived a fourfold classification of types of law. The Eternal law encompassed God's plan for the universe; Natural law dealt with that part of the eternal law wherein humans participate on account of their reason; Divine law referred to that aspect of the law where God directly makes revelations to humankind through the scriptures; and Human law which dealt with particular determinations of certain matters that are derived via the use of reason from the general precepts of natural law. Cicero as well as Aquinas postulated that an unjust law was not a genuine law but instead constituted an act of violence.

As opposed to the above position the legal positivists, namely Hobbes, advocated that the essence of law is the command or will of the sovereign and that an "unjust law" is a contradiction since the prevailing law is itself the standard of justice.

Bodin (Riley, 1993) advocated that law is merely the command of the sovereign through the exercise of sovereign power and that the sovereign had no power to exceed the law of nature. Bodin expected natural law to be found in

constitutional restraints. Although the state was considered to be the highest and final authority Bodin regarded it as a lawgiving authority, instead of one that is arbitrary and capricious.

Legal positivists after Hobbes backed away from his extreme claims. Bentham and Austin concurred that law was the command of the sovereign but rejected the idea that law was the requisite standard of justice or morality. Bentham was concerned with the law's utility in providing the greatest happiness for the greatest number. While repudiating the command theory of law, Kelsen and Hart each advocated that laws are essentially derived from norms for the establishment of law and rules that emanate from society. The main point of disagreement between the legal positivist and natural law theorists is that the latter postulate a necessary connection between legal validity and moral value while the former aver that such a nexus is not necessary. In The Concept of Law, Hart (1964) avers that the natural law jurists believe that "there are certain principles of human conduct, awaiting discovery by human reason, with which man-made law must conform if it is to be valid," however, legal positivists assert that it is not a necessary truth that laws reproduce or satisfy certain demands of morality though in reality they have often done so.

NATURE OF THE STATE: Use of the word state in its political sense first became current during the 16th century. It came into vogue in England later than on the Continent. The French etat and the Italian stato were in use soon after 1500. The modern state is usually accompanied by the notion of sovereignty. The concepts of state and sovereignty are closely linked.

The first perspective of the state that we will examine is that of the Liberal political theorists. It is difficult to suggest a starting date for liberal political theory. In British politics, it was only in the 1860s' that the more radical members of the Whigs' referred to themselves as the Liberal Party. Thomas Hobbes may be considered the founder of modern liberalism. This school advocated that all social and political obligations are derived from and are in the individual rights of man. The individual rights, however, are derived from the most powerful selfish passions and desires of men, the need for comfortable living, and the fear of violent death. Since these rights are backed up by passions, they can be self-enforcing. According to Hobbes (1950) civil society is constituted by the social contract, wherein each of the multitude of men obliges himself, by contract with the others not to resist the commands of the sovereign. This sovereign should see that the terror of punishment exceeds the temptation of any benefit that could be expected from a breach of the covenant. Hobbes compared

the sovereign to Leviathan, which rules the minds of men and crushes and eradicates the seeds of human pride. According to the Hobbesian sovereign, the social contract absorbed the natural rights of its subjects, except for the right to self-defence. The state was an absolute lawgiver and neither morality nor any kind of law exists before it is willed by a sovereign whose subjects are obligated by a contract of obedience. According to this version the sovereign not only creates positive law but also establishes criteria of right and wrong of a civil religious doctrine and also of public opinion to some extent. The state creates law and morality and humans submit to it for their self-preservation.

According to Hegel the modern state was the concrete realization of rational freedom. As per this version the state is not a mere monolith. Rather, it is a monarchy moderated by the law-drafting functions of disinterested civil servants and it was moderated by the notion that individuals must be able to find subjective satisfaction by merely being members of a rational, free institution which secures the pursuit of absolute values inherent in philosophy, art, and religion.

John Locke carefully avoided the terms sovereignty and state because he considered government as the rule of an impartial judge, who was set up by voluntary agreement. The judge simply enforced God-given natural law and protected

natural property rights which were earned through an amalgam of one's labor with the world. For Locke the legislative branch of government is representative and was therefore amenable to popular control. The people could topple a government that did not preserve natural law and rights. The Lockean state advocated a balance between the state and society. The balance is usually referred to as the liberal notion of the state.

Locke was among the early Liberals. Liberalism is concerned with avoiding absolute and arbitrary power. For many centuries, English constitutional theory had a strong dislike for anything that reposed absolute power to anyone. Neither the parliament, judiciary nor the king was entitled to a monopoly over political authority. Liberals were averse to absolute rule because, according to liberals, absolute rule violates the personality or rights of those over whom it is exercised. In the Second Treatise, Locke (1952) claimed that absolute and arbitrary authority were so inconsistent with civil society that these could not be regarded as a form of government. Locke advocated that government should be limited in its powers and that it exists only by the consent of those governed. In his Second Treatise, he refuted the principle of divine right, and put forward his perspective on political power, which consists of the right of making laws, with penalties for the regulation and preservation of property, and in the use of

force for the enforcement of such laws. The state of nature has a law of nature to govern it. The first impression of the Lockean state of nature is one of men living together amicably, in the first ages of mankind, before the coming of civil society, enjoying equality in an atmosphere of peace and goodwill, under the beneficent rule of the law of nature.

One of the most famous proponents of a state-society balance was Montesquieu, who asserted that states should be moderate and avoid oriental despotism. Central power should flow through, and on occasion be checked by intermediate bodies like parliaments, regional nobility and the church. When the executive, legislative, and judicial powers are constituted separately and are substantially independent, power can be a check to power, and these checks and balances can be a civic virtue.

According to Bentham, the functioning of the state should be quite painful, since the state's general measures are unable to maximize the utility of each and every individual. As a consequence Bentham sought to confine the state to primarily supervising those pains which are more harmful such as murder and robbery.

The 19th century liberals such as Alexis de Tocqueville and John Stuart Mill concurred that democratization of politics and the state ensuing from the French Revolution and the Industrial Revolution, along with the new influence

of public opinion, could culminate in a possible "tyranny of the majority." According to Mill, this tyranny could be worse than the earlier tyrannies because there are fewer means of escape when society itself is the tyrant.

Tocqueville and Mill advocated a new type of aristocracy as opposed to feudal aristocracy, where leadership would rest in the hands of those who "stand on the higher eminences of thought" (Mill, 1978). Corresponding to this view, was the belief that public power ought to be limited since the new democratic public had become conceivably dangerous.

The liberal view that the individual is by natural right sovereign over himself, his talents and his property, is at the same time the basis of limited government, the rule of law, individual liberty and a capitalist economy. Under the influence of Roman law, French and German laws, advanced a powerful body of public law regarding the abstract impersonal state. Public law set forth criteria to guide legislation and administration and was applied in a distinct system of administrative courts. This led to the establishment of the intimate relationship between law and the state (Rechtsstaat) in modern continental Europe. But the difference between the Rechtsstaat and constitutionalism is that the rule of law in the former is based on a concession from the ruler (Lapalombara, 1974). In a rechtsstaat the rule of law prevails. Being a rechtsstaat, the modern state, the German state for example, stands

within law and recognizes legal limitations upon its own sovereign will. In a rechtsstaat only the judgements of a competent court are valid and binding.

These different perspectives on the state suggest that with respect to their functions, states are mere artifacts of political or ideological visions of the dominant groups in society.

These preceding perspectives on punishment do not look into the environment within which punishment operates nor do they look into the complex social processes and interactions that make it possible for punishment to exist as a process in maintaining and consolidating social systems. With this criticism we will now look at the Durkheimian perspective on punishment to get a more complete picture.

Chapter Three

III. Durkheim on Punishment:

Durkheim (1964a) regarded crime as a violation of the collective conscience, which consisted of the values commonly held by members of society. Punishment was regarded as a symbol or projection of societal concern. Durkheim theorized that formal punishment for crime could not be explained by all the purposes or functions usually ascribed to it but that it was in essence a ceremonial reaffirmation of societal values that had been violated and challenged by crime. The general function of punishment was to enhance social solidarity by strengthening the basic social values that had been violated by the offender. Punishment of criminals was similar to a sacrifice of individuals for the common good. Durkheim employed this theory to account for historical changes in punishment with regard to the change from "mechanical" social solidarity of simple folk societies to the "organic" solidarity of complex societies, which are based on interdependence as a consequence of the complex division of labor. In complex social systems, punitive sanctions decrease in severity and tend to be replaced by restitutive sanctions.

According to Durkheim, punishment was an institution that was connected to the heart of society. Penal

sanctioning signified a tangible example of the "conscience collective" in operation in a process that portrayed and rejuvenated society's values. Through analyses of the functions and forms of punishment the sociologist could glean insights into the essence of the moral life around which community and social solidarity were constructed. The processes and rituals of penalty constituted the key to the analysis of society itself. Durkheim was interested in discovering the sources of social solidarity that according to him, signified the fundamental conditions of collective life and social cohesion. The culture and ethics of any society are based on a particular social organization, thus forming a functioning social entity. Emerging patterns of social interaction lead to shared classifications by participants, such that categories of conscience and consciousness are constructed to accord with the realities of group life. As a consequence, the emergent categories constitute the collective framework through which social life can routinely exist and via which individuals are bonded to each other and to society in a cohesive way. Societies are composed of material forms of life that are understood, sanctioned and sanctified through the cultural categories that they create. The moral/mental aspects and the social/material aspects of group life are mutually conditioning and constitutive, and normally function together as different facets of a cohesive social whole.

Durkheim's main object of analysis is the relationship between social moralities and their conditions of existence. This forms the basis of Durkheim's 'holistic' approach to society and it is concerned with understanding aspects of social life through their functional significance for the social whole. The conception of the moral and social as two facets of the same coin enable Durkheim to examine a social practice like punishment as a moral phenomenon operating within the circuits of moral life, coupled with the more mundane social and penal functions.

Durkheim was specifically concerned with the changing forms of solidarity that emerged as societies evolved and their basic structure and organization began to change. Specifically he sought to discern the sources of solidarity in modern societies, where the rise of individualism, the specialization of social functions, and the decline of universal religious faith led to the impression of a world without shared categories. His analysis of the modern situation was in sharp contrast with the social conservatives who were afraid that society would inevitably tear itself apart because of competing individual interests, and they advocated a return to traditional forms of morality and religious faith. Durkheim asserted that society needed a moral framework, but the form and content of this moral framework had to mirror the current conditions of social organization. He claimed that the division of labor had led

to a suitable modern morality, which was centered around the cult of the individual along with a cluster of related values like freedom, rationality, and tolerance. These moral conceptions emerged along with the restructuring of society through industrialization, specialization and secularization and were already embodied in the thoughts and actions of individuals. In fact, modern society had started producing the requisite morality, but this had not been done self-consciously, and further moral developments were necessary before the new conditions of social life became fully reflected and meaningful in the realm of social ethics.

Durkheim examined society through his conception of the moral order and its vital role in social life. He tried to demonstrate how this moral order operates to constitute individuals and their relationships, how it creates a symbolic center around which solidarities are formed and how it transforms itself over time as a consequence of the social division of labor and material conditions of group life. The concept of a moral order is an abstraction for a multitude of particular institutions and categories which are shared by the members of a community. It is a 'social fact' that is not amenable to direct observation or scientific analysis. As such, Durkheim was prompted to examine this crucial moral entity indirectly, by reference to other, more tangible, social facts. The visible index

that he adopted and found very valuable in the analysis of modern society was that of law, particularly the kinds of sanctions that each law entailed.

In Division of Labor, as also in his subsequent works, Durkheim regards punishment as a straightforward embodiment of society's moral order, and as an example of how that order represents and sustains itself. He presents a detailed account of the functioning and moral significance of punishment along with an examination of the historical evolution of punishment and its relationship with the evolution of social types, all the time connecting the facts of penal practice to the crucial constituents and processes of social life. In order to substantiate his general social theory, Durkheim furnishes a full-fledged sociological account of punishment. This account is remarkable because it attributes to punishment a moral seriousness and functional importance for society which greatly outweighs its contribution as an instrument of crime control.

Punishment is examined at many points in Durkheim's works, but there are three main works that discuss his theory in detail: **The Division of Labour** (1895), **Two Laws of Penal Evolution** (1902) and a series of university lectures that came to be known as **Moral Education** (1902-1903).

In *The Division of Labour*, Durkheim focuses on the changing nature of social morality and social solidarity, and his elaborate discussion of punishment is addressed

towards illustrating the larger problem of punishment.

Durkheim regards punishment as a social institution that is primarily a matter of morality and social solidarity. The existence of strong bonds of moral solidarity are the prerequisites for the infliction of punishment, and as a consequence, punishments succeed in the reaffirmation and strengthening of these social bonds.

Durkheim discusses punishment by analyzing the crimes against which it is inflicted. According to him, crimes are neither 'given' or 'natural' categories to which societies respond automatically. The composition of these categories changes from time to time and from place to place and is the consequence of social norms and conventions. Crimes are not universally harmful acts for society nor can they be regarded as contrary to the public interest. Nor are they (crimes) mere prohibitions for the purpose of rational social defence. Instead, crimes are those acts that seriously violate a society's conscience collective. They may be regarded as grave violations of the fundamental moral code that society regards sacred and they provoke punishment for this reason. Since criminal acts violate the sacred norms of the conscience collective they generate a punitive reaction. When rules of a less serious nature are violated, the violators are sanctioned by alternative methods -- such as through restitutive laws and regulatory sanctions. However, crimes are moral outrages that 'shock' all 'healthy

consciences' and lead to a demand for punishment rather than a lesser form of social reaction.

According to Durkheim the violation of sacred values always results in an outraged response. The criminal act violates sentiments and emotions that are deeply embedded in most members of society - it shocks their healthy consciences- and this violation leads to strong psychological reactions, even among those who are not directly involved. It provokes feelings of outrage, anger, indignation, and a passionate desire for vengeance.

In modern societies, it is hard to find the operation of these vengeful passions in punitive action, because these emotions have been officially denied and replaced by more reflective and utilitarian concerns. However, Durkheim avers that it is merely our understanding of punishment which has changed, not its reality - 'the nature of a practice does not change because the conscious intentions of those who apply it are modified. In truth it might play the same role as before, but without being perceived'. For Durkheim the essential nature of punishment has not changed. According to him:

the need for vengeance is better directed today than heretofore. The spirit of foresight which has been aroused no longer leaves the field free for the blind action of passion. It contains it within certain limits; it is opposed to absurd violence, to unreasonable ravaging. More clarified, it expends less on chance. One no longer sees it turn against the innocent to satisfy itself. But it nevertheless remains the soul of penalty. (Division of Labor, pp. 90).

For Durkheim the essence of punishment is not rationality or instrumental control, but rather irrational, unthinking emotion fixed by a sense of the sacred and its violation. Punishment is an emotional reaction that erupts at the violation of highly cherished social sentiments. Though the institutional routines try to modify these excesses of rage, and attempt to use them in a productive manner, the dynamic and motivating force of punishment is emotional and unreflecting. It is a genuine act of outrage. The force and strength of punishment and its general direction emanate from sentimental roots. These are the psychic reactions that are commonly felt by individuals when the sacred collective values of the community are violated. Though the modern state has almost total monopoly of penal violence and controls the administration of penalties, a much bigger population is involved in the process of punishment and furnishes the context of social support and synchronization within which state punishment occurs.

The passions provoked by crime are initially, spontaneous reactions of individuals. However, by being voiced collectively and simultaneously, these reactions reinforce each other and lead to an important social consequence -- crime brings upright consciences together and concentrates them. It acts as an occasion for the collective expression of shared moral passions, and this collective

expression operates to strengthen these same passions through mutual reinforcement and reassurance. For Durkheim, crime and punishment are important because they set the moral circuitry in motion. Punishment eventually achieves a definite objective -- the eruption of common sentiments which are concentrated and organized within the rituals of punishment that lead to an automatic solidarity, a spontaneous reaffirmation of shared beliefs and relationships that act to enhance the social bond.

Like all moral phenomena, punishment has a dualistic character. Along with being a matter of individual psychic emotion it is also one of collective social morality. Both these aspects coexist in a functional spiral that helps create and re-create social cohesion. Durkheim asserts this to be the character of punishment in all societies.

The penal law and the common conscience that it enforces, play a crucial role in the cohesion of simple societies. It is the basis of mechanical solidarity in simple societies. However, in modern, organic societies, the division of labor, functions as the chief source of solidarity. In modern societies the penal law and common values play a reduced though essential role.

In the Division of Labor, Durkheim focuses on the organized nature of the collective punitive response. He delineates how the spontaneous social action of the outraged community crystallizes in a tribunal and a penal apparatus,

which is responsible for the expression of public feelings and meting out punishment. After its establishment, the governmental agency draws its force and authority from the common conscience. Its powers are derivative and are based on public feeling.

Though Division of Labor gives a detailed account of the sources, functioning and social significance of penal law it does not deal with the forms of punishment, nor does it examine the historical context of punishment.

A theory of punishment which does not account for historical change and does not consider penal forms leads to many unanswered questions. In order to rectify this deficiency Durkheim returned to these issues in The Two Laws of Penal Evolution (1902). Here Durkheim attempted to round out his original theory of punishment by demonstrating how the facts of penal history can be encompassed within it and interpreted accordingly. At this juncture Durkheim was confronted with a paradox when faced with the evident historicity of punishment in that there is copious evidence to show that penal methods have changed substantially over time. However, he also stressed the ahistorical and unchanging nature of punishment as a social process. The solution to this problem may be found in the argument that since the nature of social organization and the conscience collective change over time, these changes substantially affect the kinds of sentiments and passions that are

provoked by criminal violations. Variant passions coupled with different forms of social organization, lead to different penal forms, in such a manner that although punishment is still an expression of collective sentiments, and a means of reinforcing them, the forms that it embraces have totally changed. Durkheim refines his thesis by making a distinction between the forms and functions of punishment. He suggests that although underlying mechanisms and functions of punishment remain constant, its institutional forms undergo historical change. In order to reach this stage, Durkheim has to specify how different forms of collective morality lead to different forms of punishment.

According to Durkheim penal history displays two major changes. As societies have become more advanced, the intensity of punishment has tended to become less severe. The deprivation of liberty has eclipsed all others as the preferred form of punishment. The different corporal and capital methods that formerly existed have been replaced. The general trend of evolution that he delineates is one of decreasing penal severity and an increasing reliance upon the prison. These collateral trends have been in operation with the wider evolution of societies from 'simple' to 'advanced' social types. However, this general pattern is neither definite nor uninterrupted. He points out that the development of societies does not follow a unilinear trend, because societies develop from different starting points and

at different rates. Further, he advocates that another separate factor -- the nature of political power -- independently influences punishment and leads to counter-evolutionary changes in its form.

By accepting the contemporary conventional historical opinion, Durkheim posits that 'intense' or 'severe' punishments are mainly characteristic of simple societies, while, modern-day societies have become much more lenient in their penal methods. For Durkheim, the simple societies adopted harsh penal methods on account of the intensity of the conscience collective that prevailed in these societies. Their identifying social morality is intrinsically severe, rigid and demanding, since they are chiefly religious in form and depict all its rules as transcendental laws that are authorized by the gods. In these societies individuals are deeply imbued with a feeling of the sacred nature of social rules, and conformity to the rules is considered a sacred duty which is rigorously scrutinized. Since social solidarity here is based chiefly upon the sharing of collective beliefs, Durkheim implies that the very existence of society itself depends on their strict enforcement. As a consequence a violation of the common conscience poses a grave threat to society and an affront to deeply held religious beliefs. Accordingly, it provokes an intensely violent reaction that manifests itself in suitably violent penal forms. The strength and intensity of early penal

systems are thus the product of religious morality that tolerates no opposition for fear of avenging the gods and resulting in social collapse.

As opposed to the above, the collective sentiments that exist in more advanced societies are less demanding and take up a less prominent place in social life. Modern organic societies are characterized by moral diversity and the interdependence of co-operating individuals who are unique and differentiated to some extent. The collective beliefs shared by these individuals do not have the character of intensive religious prohibitions that regulate all spheres of life by strict decree. Rather, the common beliefs focus chiefly on the value of the individual and collateral virtues like freedom, human dignity, reason, diversity and tolerance. These collective values which are embedded in the foundations of social life, are given a sort of transcendental status, and are highly cherished in the consciences of individuals. However, the tone and quality of these sentiments can be distinguished from the harsh, religiously sanctioned beliefs of earlier times. In essence this new moral faith calls for reflection and rational consideration in ethical matters. It no longer signifies the imperious will of gods who must be unquestioningly obeyed. As such, social morality has a different psychological resonance, and also leads to a more moderate reaction when its tenets are violated. Durkheim highlights

this crucial difference, by distinguishing between 'religious criminality' and 'human criminality'. Basically all offenses against the conscience collective of simple societies have the status of 'religious criminality'. These offences bring out genuine horror amongst the reverential onlookers, whose disgust at this abomination, and whose fear of its consequences, propels them to take violent measures against the criminal. Religious passions are thus the source of atrocious punishments, and the fact that a deity has been attacked makes such punishments seem to exhibit little concern for the offender's suffering.

As opposed to this the criminality that is characteristic of secular, modern societies is 'human criminality', such as offences against persons and their property. Although these crimes still provoke strong reactions and lead to public demands for punishment, the sentiments involved in these reactions are qualitatively different because the offence of man against man does not lead to the same indignation as an offence of man against God. With the growth of humanism and individualism, a new dialectic creeps into punishment. Durkheim avers that the same moral sentiments which are outraged when an individual is offended against are moved to sympathy at the plight of the offender's own suffering when he/she is punished. The combination of these interlinked changes leads to a reduction in the average intensity of punishments in modern

societies. The intensity of punishment may be regarded as a direct consequence of the nature of the conscience collective, and the development of a modern, secular morality leads to a general reduction in the severity of penal measures. Durkheim emphasizes that this evolution signifies a change in the quality of collective sentiments instead of a mere weakening of their strength.

He further elaborates that the relationship between social types and the intensity of punishment is complicated by another variable, namely, the emergence of absolutist political regimes. Absolutist governments are identified by an absence of checks on their powers, a potential to assume an ascendancy over the rest of society, and an inclination to treat individual subjects like the property of the state rather than as its citizens. These governmental forms can occur in any social type, and are independent of the general pattern of change that leads societies to become more organic and punishments become more lenient. Absolutist regimes are notoriously inclined to employ draconian forms of punishment. According to Durkheim, 'the apogee of the absolute monarchy coincides with the period of the greatest repression.' (Division of Labor pp. 112).

Upto this point in the examination of the changing form of penal measures, Durkheim has exclusively focused on the 'intensity' of punishment, however in his Second Law of Penal Evolution he focuses on the 'quality' rather than the

'intensity' of punishment. He avers that 'deprivations of liberty, and of liberty alone, varying in time according to the seriousness of the crime, tend to become more and more the normal means of social control.' (Division Of Labor pp. 114). In its essence Durkheim regards the prison as an example of modern leniency in punishing, instead of a specific penal measure with definite attributes. He points out that a result of the tendency of punishment to become more lenient as societies developed, there was the eventual necessity of discarding practices like executions, mutilations, tortures, etc. and substituting these with less severe measures. The new institution of the prison, which replaced the old atrocities was, according to Durkheim, itself a product of the same processes that tend to decrease the severity of punishment. The breakdown of undifferentiated societies and the development of individualism resulted in the demise of the ethic of collective responsibility and led to an increase in social mobility, resulting in the use of places of detention for offenders awaiting trial. Simultaneously another social process through the differentiation of the organs of government, started manifesting itself through the construction of functional buildings and the development of administrative and military potential that would later provide the managerial and architectural climate necessary for incarceration. Therefore, the social need for a place

of detention emerged at the same time as the material conditions for such an institution. Later, it was established the prison shed its custodial or preventive character and gradually came to signify punishment per se. Slowly it came to resemble the 'necessary and natural substitute for the other punishments that were fading away'. (Division of Labor pp. 120).

Durkheim tangentially indicates that imprisonment is increasingly an anachronism that is out of touch with the framework of contemporary life. However he does not specify how the current forms of punishment are out of touch with the new moral conscience. Nor does he identify new penal measures that express these collective sentiments better. Durkheim fails to delineate the supposed links between social sentiments and penal forms.

Durkheim discusses the function of the school in socializing individuals in his Sorbonne lectures on moral education (1902-3). Here he examines the appropriate forms of punishment for the task of socialization. In this discussion he elaborates on his theory of punishment and also proposes more precise specifications regarding the forms which penal measures should adopt.

In Moral Education, Durkheim furnishes us with his most fully developed, as also his most subtle account regarding the moral importance and effects of punitive measures. The function of modern education is to develop a secular,

rational morality and to locate the best means of socializing the child into the new conscience collective. The task of punishment in this setting is exactly the same as its role in the wider society — it is an expression and an enforcement of social morality. This discussion of punishment in the classroom is undertaken as a sequel to the theory he had developed in his earlier work.

Durkheim argues that modern secular moralities are open to rational discussion and are not dependent on mysticism and blind faith that are characteristic of religions. However, these modern secular moralities are also perceived as 'transcendental' and 'sacred'. According to Durkheim the 'transcendent' is the authority of society and social conventions as they are experienced by the individual; however, it is still regarded as powerful inspite of the fact that it is man-made rather than divine. As a consequence of the perception of such beliefs and sentiments as transcending the individual, any infringement of their rules leads to the same violent reprobation that the blasphemer arouses in the believer's soul. Durkheim further clarifies that by itself, punishment cannot create moral authority. On the contrary, punishment suggests that authority is already in place and has been breached. Without pre-existing rules and forms of authority, punishment does not exist. The construction of authority and a sense of the sacred is actually a work of moral

training and inspiration that occurs in the family, the school and other areas throughout society. Punishment can merely protect and regenerate that which is already well constituted by other methods. It is a supplement to moral education and not its integral part. Punishment plays a crucial role in preventing the collapse of moral authority. On being established, it guarantees that the moral order will not be destroyed by individual violations which reduce the confidence of others in authority. Punishment functions as a mechanism for reducing the 'demoralizing' effects of deviance and disobedience. 'Punishment does not give moral discipline its authority, but it prevents discipline from losing its authority, which infractions, if they went unpunished, would progressively erode'. (Moral Education, pp. 167).

The task of punishment is to demonstrate the reality and actual force of moral commands. Conventional rules can only elicit the prestige and authority of sacred things if it is demonstrated that violators will certainly be punished, and further, that the moral order is robust enough to fend off direct attacks. Social relations are analogous to credit relations. They are based upon trust and on being underwritten and guaranteed by a powerful agency. A breach of trust, or doubts regarding the ability of the guarantor, could quickly lead to an erosion of the credit system. Further, individual offences must be punished, not merely on

account of the harm that they inflict, but on account of the ramifications these violations might have on the moral order itself. Thus there is a sort of 'system requirement' for punishment, where moral order is fragile and it depends on the teacher's actions. In the case of the larger social system, similar system requirements exist, but these may be less easily ascertained.

Durkheim points out that this reassertion of the moral order is the main function of punishment, in the courts as also in the classroom. This functional effect at the level of the system, is to a degree automatic, and not always well understood by the administrators of punishment -- be they teachers or criminal court judges. He further argues that this 'meaningful demonstration' of moral strength ought to be the primary objective of punishing, as also its primary function. He suggests that punishers should realize the real moral function of punishment, and to make it the focus of their task. He furnishes an argument which shifts from the abstractions of punishment's social functioning to the concrete specifics of how one must punish in certain cases.

He commences this argument by negating the conventional idea of punishment as a deterrent instrument that can control individual conduct coercively. According to him there is evidence that 'the prophylactic influence of punishment has been exaggerated beyond all reality'. (Moral Education pp. 162). Isolated threats of dire

consequences do not have any moral content. They merely represent practical obstacles that obstruct the path of a criminal's desires.

Based on these considerations, Durkheim avers that we should regard punishment as an expressive form of moral action rather than as a utilitarian instrument. Essentially, punishment is a medium through which a moral message is conveyed, and it indicates the strength of feeling that lies behind it. It is obvious that pain is only an incidental repercussion of punishment rather than being its essential element. Various degrees of suffering and hardship are imposed upon the offender, not for what they can achieve in themselves, but rather to indicate the moral force of the message being conveyed. According to Durkheim, stigmatization, physical harms, monetary penalties and prison cells are all concrete examples through which we express disapproval, reproach and the strength of the moral order.

Penal forms that are not expressive in this manner, but are rather designed to be effective as deterrents or cause maximum suffering are not appropriate. They distort the true purpose of punishment and should not be employed. Though penal sanctions are unpleasant, however, this ingredient of suffering should be minimized.

At this juncture Durkheim introduces a new ingredient into his theory of punishment. In prior accounts the force

of the punitive reaction was dependent upon the passions that were provoked by the offence. However by examining the idea of punishment in the new metaphor of a communication, Durkheim focuses on another element in this operation: the receptivity of the audience. In order to transmit a forceful moral reproach, its intended audience should comprehend its meaning and feel its force. The language of penalty should suit the participants, and should be understood by them. Further, the concrete language of punishment through which moral reproach is effected, will be subject to the sensibilities of the society in question. In case of some societies, it is hard to affect individual sensibilities and therefore it necessitates blame to be translated to some violent form. But in more advanced societies, sensibilities are more refined, as such, ideas and feelings do not have to be expressed via gross physical methods.

Durkheim's account of punishment in Moral Education is revealing and important. It refines his account about the functioning of the social institution of punishment and reveals how his theory corresponds to the practical use and design of penal sanctions. It also reveals a concern with changing sensibilities that are considered important while determining punishments. However, no attempt is made to link the history of sensibilities to the history of the conscience collective. It is revealing for the reason that

it demonstrates very lucidly why Durkheim has so little to relate about the actual apparatus of the instrumentalities of punishment.

Durkheim's concern is not to comprehending punishment in all its aspects but rather to point out its moral content and its moralizing social effects. For him penalty's coercive apparatus of threats, physical restrictions, and monetary penalties are interesting only as a means for conveying moral passions and messages. The ideal punishment for Durkheim is one of pure expression, a moral statement that conveys condemnation without pursuing any lesser goals. Accordingly, the best punishment is one that puts the blame in the most expressive but least costly manner. (Moral Education pp. 232). The whole analysis of punishment within society is arranged around this ideal figure. His theory looks at punishment only as a moral phenomenon. His orientation is toward the explication of punishments' moral content and its moral consequences and an examination of how punishment functions within the circuits of moral life. To the degree that punishment has other sources, meanings and effects, Durkheim's work has very little to offer.

Critique of Durkheim:

Durkheimian theory presents a characteristically problematic reading of the social meaning of punishment. Rather than looking at penalty as an instrument of crime

control, Durkheim examines the buried moral content of punishment and on discovering and elaborating this moral dimension he regards it as the main basis of society's penal practice. This version of punishment-as-a moral-process presents problems for application and understanding. However, inspite of its problems his reading of punishment uncovers crucial aspects of the penal complex and details dimensions and dynamics that are not normally visible.

One of the most sustained criticisms of Durkheim's theory of punishment refers to the number of serious errors in his account of penal evolution. A plethora of studies have indicated that he overstates the importance of 'repressive law' in early societies but understates its role in the advanced ones (Spitzer, 1975). Coupled with this is his erroneous perception of the normative frameworks of primitive societies. Most of these primitive societies are based on flexible reciprocities and co-operation, and not on the harsh religious conformity that Durkheim outlines (Malinowski, 1969).

The historical development of penal forms did not adopt the trajectory outlined by Durkheim, nor were its dynamics congruent with the pattern that he advocates. Rather than being an emergent property of an evolving social solidarity, penal forms arose from the continuing struggle between different social forces and different perceptions of society. In some instances, the narration of 'absolute

power' and its independent function in the emergence of punishment may be regarded as an indication of a historical trend where political forces endeavor to recast social relations and beliefs. However, Durkheim overlooks the possibility of a tussle between the ideological claims of absolutism and the conscience collective of the respective society, unjustifiably assuming that these two will possibly merge to constitute a unified and coherent system of authority and belief. From whatever angle it is examined, his historical account is unable to substantiate his functional theory through historical illustrations. His main concern is to examine punishment's moral functioning within an established social framework, rather than look into the concrete processes that are involved in penal change. An examination of these historical highlights indicates the extent to which the 'moral order' or the 'legal system' of any society are actually the result of historical struggles and an ongoing process of negotiation and contestation. His positivist attitude to social facts and his evolutionary functionalism ought not to be permitted to hide the fact that certain forms of society do not merely emerge. In fact, they are fragile and contested results of struggles between rival social groups and forms of life, implicit with their own conflicts and contradictions.

The cornerstone of Durkheimian theory of punishment is the conception of the common moral order which is referred

to as the conscience collective. However, Durkheim does not outline how this common conscience emerges. We discover nothing about history or the conditions of emergence of this crucial entity. Rather than scrutinize the historical emergence of a common mentality, Durkheim merely assumes this to be a necessary component of any established, functioning society. The assumption of a conscience collective is one of the most problematic and contentious features of Durkheimian theory and has repercussions for his theory of punishment.

According to Durkheim, laws based on vested interests and utilitarian obedience are indicators of transition and demoralization. States that do not echo the collective sentiments of the whole society are pathological and will have problems of survival. However, contemporary empirical evidence indicates a contrary trend: long term group conflict that is premised on race, sex, class, ideology and regional identity. Although these features are inherent in most modern societies, however, these same societies continue to function, survive and reproduce themselves. It is thus possible for a level of order to be maintained without the existence of a universal commitment to the morality of that order.

By concentrating on the interface between the individual and society, Durkheim omits another major avenue of social life and social conflict. This is the

relationship between competing groups. Except for the most simple social formations, different social groups have existed and struggled with each other in order to accomplish their own vision of social life and its proper organization. Forms of moral beliefs and social relations that come to the fore in any society are thus the result of a continuous process of struggle and negotiation. These are not the inherent features of a particular social type, nor are they the obvious result of functional evolution. If a certain form of society and collective sentiment gets established at a certain time in history, it must be regarded as the temporary result of a struggle between competing powers and forces, rather than the 'appropriate' or 'functional' prerequisite for such a social type. Unless the dominant social groups are able to destroy all opposition, new groups and forces will perennially challenge the established order in some manner. It is thus obvious that social order is constantly being negotiated and contested. Establishing society is not merely a problem of socializing deviants, but also one of subduing competing social groups and social movements.

Individuals are socialized not into 'society' per se, but rather into specific forms of social relations that come to dominate over alternative forms. One should look at the 'ruling morality' or a 'dominant moral order' instead of a 'conscience collective'. Further, the conscience collective

is not a universal or natural feature of society, we ought to examine how it emerged in its particular form. History is absolutely essential for its understanding and not merely as a supplementary illustration of its various forms. We ought to discern the forces that led to a particular moral order, as a result of alternative possibilities that have been in existence.

Rather than examining society as the conscience collective as a feature of 'society-as-a-whole', we ought to examine the dominant moral order that has been historically associated with certain social forces. This is exactly the gist of the terms 'dominant ideology' and 'hegemony' that have developed in the Marxist tradition, so as to deal with this issue, and in some respects provide a better understanding of the political determinants and effects of social morality.

However, the Marxist perspective has to be conditioned by the following point that is raised by Durkheim: Normative regimes are not entirely a product of alien imposition. Social moralities are vigorously enforced by particular social groupings because they correspond with the deeply felt beliefs of common people. If ascendant social elites legislate their preferred categories into institutional practices and laws, they do not normally ignore the moral culture of the mass of the people. If they contravene this principle, they would be faced with deep resistance and

antagonism, and it would undermine the extent of voluntary co-operation that is a requisite for stable authority. Thus even autocratic rulers are to some extent, bound by collective sentiments. With this critique of Durkheimian theory we proceed to examine the next penal perspective -- the Conflict or Marxist theories.

Chapter Four:

IV. Conflict Theories:

As opposed to the Durkheimian view, Marxists adopt a critical perspective on the state, by directing their attack on a key assumption of state theory -- the idea of a distinction between state and civil society. This idea is a precondition to the state's ability to take a disinterested view of the public interest and its claim to embody a unique authority. Marxist theory ranges from those which have denied the autonomy of the state altogether regarding it as a 'mere super-structure' for class rule, to others who confer 'relative autonomy' to the state. Gramsci (1971) emphasized the 'hegemonic' role of the state as an ideological actor and not merely a coercive force. Habermas (1971) postulated that the state though fragile, could play off one capitalist interest against another. Poulantzas (1973) regarded the state as a unifying social formation that organized and reconciled different social forces. These Neo-Marxist theories of the state have been important in providing a more dynamic analysis of the functioning of the modern state.

Few studies have examined the political and economic determinants of penal policy, the function of penal institutions in the craft of class rule, and the manner

whereby penalty serves to enunciate state power in a symbolic and material sense. Structural theories, which provide a highly developed set of theoretical tools for some types of social scientific enquiry are an important conceptual resource for most of the critical work in this area. Many of these concepts are not restricted to a Marxist orientation, in fact, many of the studies that most effectively employ the Marxist concepts do so without specific assent and in combination with concepts that derive from elsewhere (Hay; 1975, Ignatieff;1978, Garland;1985).

Neither Marx nor Engels made any major contribution to examining penal institutions (Melossi; 1976, Cain and Hunt; 1979). Economistic analyses of punishment examined the broad theory of social structure and historical change. This foundation is employed for their own specific analyses. Since these penal studies evolve from an extended framework, instead of from a single point of origin in Marx or Engel, they show a variety of approaches and starting points instead of a singular type of analysis.

Marxist theorists suggest a holistic approach to social life and argue that society has a definite structure and organization, besides a central dynamic, that pattern social practices in specific and predictable ways. As a consequence the political and economic spheres are brought together. In this structured social formation, the main determinant of social organization is furnished by the mode of production,

this follows from the fact that the manner whereby economic activity is organized and controlled will tend to shape the other aspects of social life. As a consequence, the economy (the sphere of activity that produces the material necessities of life) will be the locus of power in any society. Groups dominating this arena will be able to impose their power, and their distinctive social relations that this necessitates, on the other spheres of social life. As a result, the institutions of politics, morality, law, philosophy, and religion, among others will tend to be forcibly adapted to fit the conditions of economic life, and these will take on forms and values that match the dominant mode of production. This structural organization of society, wherein the mode of production is crucial and determinative of non-economic relations, tends to be expressed in terms of the "base and superstructure" metaphor. The economic level is the crucial foundation on which the "superstructure" of political and ideological relations are based. Though superstructural forms have a real effect in molding social life, and have distinctive features of their own, they are ultimately dependent on an underlying framework of productive relations. These economic relations in effect furnish the support on which the superstructures are based and so broadly determine the forms which these social realms can accommodate.

Initial studies of punishment came from within the

Frankfurt school of social research. In the 1970s, major historical studies scrutinizing penal sanctions and the criminal law were conducted by Hay, Linebaugh and Thompson (1975) from within an economic perspective. The question of locating punishment from a Structural perspective prompted writers like Rusche and Kirchheimer (1939) or Melossi and Pavarini (1981), to emphasize the interconnections between penal institutions and the economic requisites of modes of production. However, Pashukanis, Hay or Ignatieff prefer to emphasize the role of punishment in political and ideological class struggles and in the preservation of state power or ruling-class dominance. As a consequence we discern three different accounts. One regards punishment as an economic phenomenon that is ancillary to the labor-market. The second examines its political role as a repressive state apparatus and a third that regards it as an ideological institution dealing in symbols of legitimacy and the authorization of class rule. In spite of this divergence in emphasis, they all share a common perspective on punishment which links it to a particular set of property relations and with the struggles of a ruling class to maintain its social and economic dominance over the subordinate classes.

Pashukanis and Juridical Forms: The Russian jurist E.B. Pashukanis, writing in 1924 advanced a string of contentions about punishment. His general thesis is a combination of a

sociological and a jurisprudential one, which detail how the juridical categories that constitute modern law are dialectically linked to capitalist economic relations. According to Pashukanis, the chief forms and classifications of bourgeois law are direct corollaries of forms that are incorporated in capitalist commodity exchange. Law facilitates legal expression to a specific form of economic relations whereby it legitimizes and facilitates these relations. Legal categories of the person define individuals as 'isolated egoistic subjects, the bearers of autonomous private interests, and ideal property owners' who relate to one another through the forms of contract, ownership, and exchange (Pashukanis, 1978). In this garb, the law reproduces conceptions of the person and of social relations that are specifically capitalist, although it does so in a way that implicitly denies this partiality. The law materializes and universalizes categories that are specific to a particular class-based mode of production. Through the passage of time this bourgeois shape of the law has been fashioned by legal responses to economic development, in such a way that it seems economically determined. However, the legal form also provides an important regulative structure that sanctions capitalist relationships and enforces the appropriate economic rules. Simultaneously, the law provides a powerful ideology that helps legitimize these relations by phrasing particular economic interests in a

vocabulary of universal right. Accordingly, the law is an institutional structure and a regulative discourse that has its own forms of existence and affectivity, but it is also bound up with the sphere of capitalist economic life. Legal relations therefore form a united whole with the material relations of which they are an expression. Pashukanis avers that this analysis can be applied to cover the area of criminal law and punishment, since the commodity form predominates here too. Within the drama of criminal court proceedings, real concrete persons and their disputes are converted into 'a peculiar juridical reality, parallel with the real world'. In this court-room environment individuals are viewed as legal subjects, having all the attributes of free will, responsibility, and hedonistic psychology that the normal bourgeois individual is deemed to possess. The defendant's personality and actions are examined through this ideological prism, which conjures up a mythical and socially effective image. As a consequence, even the most destitute and desperate victims of market society are judged to be free, equal and in control of their own destinies the moment they appear in court (Barthes; 1973). The procedure of sentencing and the underlying philosophy of punishment seems to be molded by the general form of law and its bourgeois bases. The main idea behind sentencing is that punishment should be an 'equivalent' of the offence, such that justice embodies a type of equity or fair trading that

exchanges one harmful action for another equivalent one. This idea of equivalence considers punishment to be an exchange transaction whereby the offender 'pays his debt' and the crime becomes 'an involuntarily concluded contract'. In this manner the courts aid the regeneration of the basic cultural forms of capitalist society that are actually riddled with inequality, unfreedom, and destitution, which could otherwise have a disturbing influence. By reiterating the illusions and facts of the market system the courts help maintain the continuity of meaning and 'the dialectical connection between the various aspects of culture' where ideological influence hinges (Ericson and Baranek; 1982).

In reality, crime and punishment are in stark contrast with their legal and ideological portrayals. For Pashukanis, the criminal law is an instrument of class domination and occasionally of class terror. It safeguards the property claims of the dominant classes, along with the social and moral structures that support them. It is specifically directed against those sections that have lost their position in society, or against those who are potentially dangerous. According to Pashukanis, 'every historically given penal policy bears the imprint of the class interests of that class which instigated it'. Except in the fantasies of the jurists, society does not exist as a monolith, instead there are classes with contradictory, conflicting interests. Penal practice is a mechanism of class rule

incorporated in a legal form which endeavors to mask its class content. When the legal form accomplishes its ideological effect, criminal law enhances the claims of 'the constitutional state' along with its claim to be a neutral guarantor of individual freedoms. Besides being an embodiment of the abstract legal form, the criminal court is also a weapon in the immediate class struggle. During political contingencies the state authorities may do away with the niceties of legal form and seek their class objectives through more direct means. While protecting class interest, the legal and cultural forms that embody penal practice make way for a more direct deployment of penal violence. Penalty is a political instrument of repression, which is normally circumscribed by ideological concerns and legal procedures. As such, the resolution of punishment by economic forms and class interests sets express limits on the prospects for penal reform or for a rational penal policy. For Pashukanis, a rational penal policy would lay more emphasis on rehabilitation than on retribution. However, this would virtually detach penal practice from its ideological base and this change would be opposed by the state and the ruling classes. Pashukanis reiterates that the irrational commitments of the penal system are overdetermined symptoms that have a reason for their existence and cannot be removed by gentle criticism, since this absurd form emerges from the material relations

of society based on commodity-production and not on account of the quirks of individual criminologists.

While focusing on actual penal sanctions, Pashukanis argues that certain penal practices and institutional forms could be comprehended by reference to the commodity form and its related consciousness. The tendency to develop sentencing tariffs that calibrate punishments in mathematical terms results from the exchange principle in the penal sphere, and the modern use of monetary fines fits within this structure. However, Pashukanis avers that imprisonment can also be viewed as a specifically bourgeois invention which utilizes the conceptions of the person and of value that crop up from the capitalist mode of production and thereby replicate bourgeois mentality in the process of punishing. Capitalist economic relations led to the concept that individuals were the owners of labor power and of liberty, both of these could be regulated and measured in periods of time, as a consequence it was capitalism which gave rise to modern imprisonment, which seems to be based on precisely this rationale (Thompson, 1967). Pashukanis reiterates that industrial capitalism, the declaration of human rights, the political economy of Ricardo, and the method of imprisonment for a specified duration, are events characteristic of one and the same historical epoch. Just like Rusche and Kirchheimer did earlier on, Pashukanis discerns an intense association that connects imprisonment

to capitalism. However, while R&K view this as an economic relation, Pashukanis indicates a cultural form that springs from the realm of production and comes to be replicated and augmented elsewhere.

While concluding his analysis of the prison, Pashukanis reiterates his thesis of the cultural-form-as-ideology and also opens up a significant intuition regarding the prison. Detailing a stance that was later adopted by Michel Foucault, he avers that although imprisonment seems to be a deprivation of liberty and is thus represented in legal discussions, in reality it is much more than a mere deprivation. It encompasses express disciplinary, punitive, and corrective practices that are wreaked on the prisoner without being declared in the law. In effect, it violates the legal maxim: *nulla poena sine lege* (there can be no punishment that is not declared in law). The consequence of this fact is that the legal representation of imprisonment as merely the denial of freedom is as misleading and deficient as the law's customary portrayal of personal liberty.

Pashukanis has made two important contributions to the study of punishment. 1) He identifies the formal similarities that connect the apparent penal practices to other realms of social practice which indicate that specific cultural forms tend to penetrate different spheres of social life. The notion of equivalence, the autonomy of the legal

subject, the concept of liberty and its regulated deprivation, are all facts of penal life that have their genesis elsewhere but which seem obvious because of extension and repeated use. By demonstrating their links to a historically specific economic process, Pashukanis reveals a layer of significance in penal practice that lay submerged under its very 'naturalness'.

2. By emphasizing that punishment is a form of social action that operates within a legal framework and is beset with legal forms and procedures he offers a valuable appraisal. For Pashukanis, the legalism of penalty was not as unreasoned, absurd or irrational as the criminological progressives considered it to be; It is a necessary consequence of the fact that penal laws and institutions are situated within the system of ideological forms that symbolize and uphold capitalist power. Removing the absurd legal element from punishment would entail a dislocation of penal practice from the network of power relations.

Critique of Pashukanis:

With the passage of time we note that Pashukanis was inclined to exaggerate the moorings of the legal forms within which penalty was encased. In the twentieth century, most of the capitalistic societies in Europe and the U.S. altered their devotion to juridical forms in the procedure of punishment. We have witnessed the introduction of indeterminate sentences, conceptions of irresponsibility,

and classifications of criminal psychology which are in marked contrast with the classical legal forms and conceptions of penalty. Neither of these changes have entirely eradicated the older legal forms from penal practice, rather, they have changed their operation substantially, and this change has come about without any essential change in the economic realm. In retrospect, it appears that Pashukanis exaggerated the extent to which capitalist economic forms need a particular legal framework for survival. He underestimated the flexibility of the economic system and the variety of social and legal forms with which it is compatible. It is possible that capitalist commodity exchange demands a legal framework that requires free legal agents, forms of property, and an enforceable apparatus of contract, however, the forms that this framework can assume are more diverse and varied than Pashukanis could have conceived. Similarly, penal molds must be compatible with the economic and social relations within which they exist, however, there are many forms in which this stipulation can be fulfilled.

2. Pashukanis lays out a very simple-minded conception of penalty's class function, which is merely the opposite of the Durkheimian view that he so strongly contested. According to Durkheim, punishment expresses the interests of society as a whole, whereas for Pashukanis only the ruling class finds its stakes represented in penal practice because

for the rest of society, criminal justice in the bourgeois state is 'organized class terror'. Durkheim's view is untenable, but so also is the stance adopted by Pashukanis. The criminal law renders protection and 'terror' for the working classes, and there is doubtless a general social function implicated in some of its aspects like the prohibition of violence and the punishment of predatory criminals. If penalty ministers to a class, it does it in a manner that garners support among the subordinate classes and protects universal interests instead of specific ones. Further, it may apply to some crimes but not to others such as "white collar" crimes. The answer to understanding criminal law in class terms is to understand the manner in which particular interests are enmeshed with general ones. An analysis of the class dimension in penalty should grasp and incorporate these complexities instead of pretending that they do not exist.

3. Paradoxically, Pashukanis furnishes all the ingredients for a sophisticated account of the type mentioned above, but surprisingly, fails to produce one. Using his analysis it can be argued that the legal form that penalty assumes simultaneously furnishes a degree of equality and protection for all, besides contributing to a system of inequality and class domination. By examining social regulation in legal language, all persons in society are entitled to claim the protections afforded by law for his or her person or

property and are furnished the status of a free and equal entity in the eyes of the law. Viewed as a defence for the poor and the vulnerable, against attack or as a protection against state power when arraigned, these legal stipulations are of unfeigned value to members of all classes. However, since the law regards all persons to be free and equal and since it protects the rights of property without discrimination, it quells the real imbalance of power, status, and freedom that separate the rich from the poor and the owners of the means of production from those groups whose real property is small. Therefore, the forms of law furnish a real measure of social protection against crime and criminal assaults, but none against the harms of the economic domination and the social injuries of class (Sennett and Cobb, 1972). In effect this is the Marxist critique of the form of law as applied to criminal law and penal practice and it can be used to produce meaningful insights regarding the social effects of punishment. What is interesting is that although Pashukanis drew us to its existence, he failed to employ it himself.

Hay and the Ideological Functions of Criminal Law:

Pashukanis considers punishment as a politico-ideological instrument of the bourgeois state which is designed by economically derived groupings and deployed to foster ruling-class power. While building upon the economic

analyses of Rusche and Kirchheimer, Pashukanis adds a major new dimension into the Marxist version. However, the attempt to understand punishment from within the ideological and political applications is developed by historian Douglas Hay, while analyzing eighteenth-century English criminal law. As opposed to Pashukanis, Hay concentrates on express human endeavors and the vital calculations of those in power. As a historian he attempts to discern, in human terms the genesis of the structures, the cultural figures, and the methodical social formations that give substance to the philosopher's preoccupations. He converges mainly upon penal decision-making, like legislative processes, sentencing choices, organization of penal ceremonies, and the mentalities that inform these different processes, instead of the penal forms and cultural patterns that ensue.

Hay commences his arguments by scrutinizing a pair of interrelated contradictions that induce him to ask certain questions regarding the unstated purposes of penal practice in English society during the eighteenth century. The first contradiction pertains to the question of capital punishment. The challenge is to explain the inflexible decision of succeeding English governments and judiciaries to preserve and augment the range of capital statutes and their related custom of pardon and commutation, during an era when fewer and fewer death sentences were actually

executed, and when reformers vehemently criticized the absurdity of this state of affairs. Hay poignantly questions the irrational determination of Parliament to retain all the capital statutes, though these were outdated, and 'to continue to create new ones even when they fell stillborn' (Hay, 1975; Radzinowicz, 1948; Langbein, 1983).

The next paradox, which is more abstract comes to the fore when Marxist discernment of class societies is superimposed on the facts of social organization in eighteenth-century England. How was the English ruling class able to maintain its sovereignty even after the social relations of feudalism had broken down, and during a period before a modern apparatus of rule had been forged? What were the social institutions and political arrangements that enabled them to govern eighteenth-century England without a large army or a police force, during a period when social divisions and dislocations made England an unruly, disorderly, and nearly anarchic society (Stone, 1987)? While trying to decipher these puzzles, Hay produced an impressive account of the informal levers of power and influence in English society and the manner whereby these were orchestrated via the justice system. Imbedded in his version is a theory of the ideological and political functions of the penal process that can, with suitable modifications, be extracted from its historical context and used in the analysis of punishment in the present context.

Hay argues that the seemingly unsound devotion of eighteenth-century legal policy actually had deep roots in the mental and social structure of English class society. Although this system seemed abnormal, the ruling class was content to live with it specifically because it viewed the unreformed law to facilitate its foremost interests. The criminal law was crucial in maintaining the bonds of obedience and deference, towards legitimizing the status quo, by constantly recreating the structure of authority that ensued from property and thereby protected its interests. Hay contends that the criminal justice apparatus performed supportive functions through a judicious combination of physical and symbolic persuasion that was determined to shape the sensibilities whereby the many acquiesced to the few. The criminal law and its related penal practices operated, virtually, as an ideological system, and as such, transmitted a set of ideas aimed at vindicating and disguising class interest. From this perspective the inconsistencies and irrational weaknesses, acted as mechanisms that enabled the exercise of personal discretion and the sustenance of ideological interests.

While scrutinizing criminal justice as ideology, Hay distinguishes three main dimensions through which its effectiveness circulated. These were: Majesty, Justice and Mercy. The Majesty of the law conjured up a powerful imagery and symbolism that was sustained by legal ceremony.

Eighteenth-century English justice was staged as a string of sensational displays with meticulous attention to detail. These ceremonies were regarded as avenues for dealing with the crowd and the judges' deeds were dominated by the prominence of spectacle. During the course of this ceremony the criminal law echoed the dominant psychic components of religion. However, the faith that these rituals nourished and sustained were of a fixed political substance. These trials were, actually, figurative rituals of the strength of the law that demonstrated its basis in property and social class.

In spite of the class connections and their de facto enactment by a legislative elite, law and the legal process displayed a real dedication to legalism and the goals of legal justice. The integrity of the legal system was visibly flaunted and worked as a strong ideological element. The equal operation and application of the law gave a real substance to the rhetoric of equality before the law.

The legal process of this period left huge crevices for discretionary findings and personal influence. These personal initiatives connected criminal justice into the wider social network of patronage and deference and enabled the local elite to have a powerful leverage on the mechanisms of the law. The processes of the law could be gently manipulated in order to serve the interests of the social elite. Hay relates that the authorities gauged

public opinion prior to making decisions regarding the execution or timing of death sentences, and this discretionary use of mercy enabled the rulers of England to convert the courts into a selective instrument of class justice, while harking upon the incorruptibility and determinate character of the law. As a consequence, these different avenues of influence enabled the criminal law to become a convenient object of private, extra-legal transactions through which the king, judges, magistrates and the gentry bent the statute and common law for their own convenience. In actual functioning, the themes of majesty, justice and mercy provided the law with an ideological structure that seemed universally social, but was deeply class oriented in reality. It was not an automatic effect of class structures or juridical forms but instead an achievement of human action and the 'cunning' of a ruling class that knew the art of government.

Critique:

While Hays' work constitutes an important epic in radical criminology and sociological studies of punishment, subsequent criticisms of his arguments lead us to qualify many of his conclusions.

i. Many historians point out that class interest played a minor role in shaping legal decisions, and that popular support for the legal system emanated from a recognition of

the real protections furnished by the law, and not from an unfounded ideology (Langbein, 1975; King, 1984; Stone, 1987). Langbein (1975) argues that in most of the property offenses that made up a major part of the Courts' work, the victims who made use of the legal machinery were members of the poorer classes and were economically similar to the persons they prosecuted.

ii. Regarding the intercession of private interests and the extra-legal manipulation of major decisions pertaining to sentencing, empirical research by King (1984) indicates that the official handling of reprieve and pardon matters was actually more ethical than Hay makes it out to be. An examination of the case papers indicates that a simple assortment of factors (like good character, youth, poverty, respectability, and the absence of violence) affected the decisions, such that matters were settled according to their own merits instead of bowing to the wishes of a well-placed supplicant. Langbein's (1975) assertion that the poor supported the law and were amenable to using it against others, is supported by later studies (Brewer and Styles, 1980; Beattie, 1986) and this element is even acknowledged by radical and Marxist criminologists.

According to Thompson (1975) the law is by definition part of a superstructure adapting itself to the necessities of an infrastructure of productive forces and productive relations. Thus it is evidently an instrument of the de

facto ruling class: it simultaneously defines and defends these rulers' claims upon resources and labor-power. It says what shall be property and what shall be crime - and it mediates class relations by a set of appropriate rules and sanctions, which collectively and ultimately, confirm and consolidate existing class power. The rule of law is only a mask for the rule of a class. Law is looked upon as a phenomenon of ruling class power and hypocrisy. Thompson (1975) accepts some parts of the Marxist-structural critique. He states that it has partially confirmed the class-bound and mystifying functions of the law but rejects its ulterior reductionism and modifies the typology of superior and inferior structures. The Whig oligarchy of England created new laws and bent old legal forms so as to legitimize their own property and status. In order to do this the Whig oligarchy employed the law instrumentally and ideologically, very similar to that which a modern structural Marxist would expect. This did not imply that the rulers needed the law in order to oppress the ruled, while those who were ruled did not need the law. Often the main issue was a matter of alternative definitions of property rights. The law may be seen instrumentally as mediating and reinforcing existing class relations and ideologically, as offering these a legitimation. The essential precondition for the effectiveness of law, in its function as ideology, is to display an independence from

gross manipulation and it should seem to be just. Thus there is no simple conclusion, rather, there is a complex and contradictory one. In one respect, the law did mediate existent class relations to the advantage of the rulers. With the passage of time the law became a superb instrument through which rulers were able to impose new definitions of property to their ever increasing advantage. A good example is the legal extinction of the indefinite agrarian use rights and the furtherance of enclosure rights. However, on the other hand, the law mediated these class relations through legal forms, which repeatedly imposed inhibitions on the actions of the rulers. In effect there emerged the concept of the rule of law to which the rulers and the ruled were bound alike.

Chapter Five

V. PUNISHMENT AND MODELS OF EXPLANATION:

This section will examine incarceration patterns from a historical perspective. It will review and critique the competing views and also the quantitative studies for their methodology. The research findings will be evaluated in the light of the relevant theories.

One effort to address the rates of punishment over time can be found in a series of articles by Alfred Blumstein and his colleagues. Based on the views regarding the stability of punishment advanced by Durkheim (1964a, 1964b) these studies tried to show that rates of punishment are quite stable over relatively long periods of time in a variety of Western countries and in the U.S. (Blumstein and Cohen, 1973; Blumstein, Cohen, and Nagin, 1977; Blumstein and Moitra, 1979).

Blumstein and colleagues suggest that punishment follows a stable pattern over time. However, the problem with this perspective is its temporal specification. Although their temporal span seemed to be in agreement with the theoretical model specified, however, we note that the data from the latter part of 1970 does not support their theoretical model. Since the middle of 1970 punishment seems to have followed a unilinear trend of moving upwards and does not reveal any pattern of stability or stabilization. Therefore, the theoretical model specified

has severe temporal limitations.

Berk et al. (1981) also built on the works of Emile Durkheim, which claimed that for a given society over time and in the absence of major societal upheavals, such as wars, the proportion of persons punished by the state would tend to resemble a constant. Berk et al. (ibid) empirically tested the stability of punishment hypothesis postulated by Durkheim (ibid) and Blumstein et al. (ibid) using data from California for the period from the opening of the prison system in 1851 to 1970. The stability of punishment hypothesis was formulated via a macroeconomic technique through which the presence of equilibrating tendencies were represented and direct tests were taken. They found that demographic trends and crucial historical events such as wars and depressions affect the punishment growth rates in a substantial fashion. As opposed to this, penal reforms had very little effect. They did not find any evidence of stability.

It seems that the model specified by Berk et. al. (ibid) was deficient. It is possible that had the question been rephrased there may have been a different result. Had the social system been envisioned as a complex and interconnected system and analyzed as such there may have been a different conclusion. Instead of trying to determine if there was stability in punishment it should have tried to examine the factors that cause a change in homeostasis

because a dynamic system such as the social control system is by nature unstable. The concept of stability is not properly specified. The concept is a fuzzy one and should have been examined from a multivalent perspective (Zadeh, 1973; Negoita, 1985)

According to Chiricos and DeLone (1992) the L-P nexus has converged around these main issues: the value of labor, systemic needs of capitalism, and judicial action. Some theoretical works involve more than one of these issues, but the general trend seems to be to emphasize that the nexus between labor surplus and harsher punishment is mediated by three factors:

1. the diminished value of labor.
2. the systemic needs of capitalism.
3. the interaction of ideology and the motivated action of judges and others.

Chiricos and DeLone (1992) aver that the explanatory links are not mutually exclusive but complementary and they reflect different levels and issues of analysis. The top layer is economic, the middle layer is political and the bottom layer is ideological. Most of these linkages are regarded as unidirectional.

Although criminal motivation is an intervening variable that is a direct result of the diminished value of labor during cycles of labor surplus, many researchers have examined the deterrent role of punishment in relation to

unemployment with express reference to labor value. As such Greenberg (1977) relates that unemployed persons are assumed to have a greater inclination to steal. If this logic is correct, then judges will act by meting out prison sentences more frequently.

According to Jankovic (1977) growing unemployment leads to a rise in prison commitment, since the policy of deterrence necessitates an increase in punishment so as to neutralize the growing temptation to commit crime. A surplus of labor can be presumed to decrease the value of labor, this results in prison labor becoming less profitable, prison conditions less pleasant and criminal motivation more probable. Each of these constituents contributes towards harsher punishments.

Structural Factors: This view looks at the role of the state in reproducing capitalist productive relations (Carnoy, 1984). These functions mainly deal with the systemic requisites of accumulation, legitimation and control. To some extent the profitable exploitation of prison labor and the principle of less eligibility each involve the state directly during the process of accumulation.

However, many have pointed out that surplus labor creates problems of legitimacy and control which the state's punitive apparatus helps to address. For many theorists, control of the 'surplus populations' (Spitzer, 1980) is

regarded as a means towards thwarting questions of legitimacy regarding productive relations that repeatedly make human workers superfluous.

According to Spitzer (1980), while surplus populations are increasingly necessary in state-monopoly capitalism, the surplus labor can undermine the principle of equality which is crucial to the legitimation of capitalist production relations. Further these populations need to be neutralized or controlled so that production relations and increased accumulation can stay undisturbed (Spitzer, 1980). In this framework, the legal system facilitates the control of that proportion of surplus labor that is according to Spitzer "social dynamite" (i.e. young, active and potentially most threatening). Wallace (1980) and Adamson (1984) seem to espouse a similar view. According to Wallace (ibid) the purpose of criminal justice is to assist the "legitimization" of the capitalist order and its function is to partially contain and maintain labor power (1980). According to Adamson, the ruthless regimes of punishment may be partially attributed to "potential political threat" that is posed by surplus labor during the troughs of business cycles (1984).

Systemic requisites for marshalling surplus labor have also been examined without express mention of the question of legitimacy. According to Lynch (1988) "marginalized workers" are not governed by conventional "work-place

controls" and thus incarceration constitutes one mode of managing "marginalized labor." Jankovic (1977) also advocates that incarceration may also be employed to manage the volume of the surplus labor force.

Echoing Spitzer's idea of "social dynamite" many researchers have honed their focus on systemic control requisites (1980). Myers and Sabol (1987) aver that "prisons seem to siphon off the most superfluous class of workers, such as young black men." Box and Hale (1982) theorize that the nexus between imprisonment and unemployment would be strongest for young males. According to Melossi (1989) the phrase "dangerous classes" connotes a "mix of economic and racial, ethnic and national references" such that unemployed young black men have become a "privileged target group" for incarceration in England and the U.S.

From a critical perspective we may note that the resources of society are divided between competing groups through various social mechanisms. The group that has control of the resources makes the rules to consolidate its interests. This group is usually middle-age, white, more conservative and has landed property. It therefore criminalizes and punishes many forms of behavior that are resorted to by the young and unemployed because they threaten the established social order. The criminal justice system is an instrument of privileged groups because it

echoes their values and interests. Instead of dealing with the problems of social justice and a more efficient distribution of resources, these privileged groups attempt to hold on to their position by becoming more punitive and increasing the number of activities that are defined as criminal.

Judicial Ideology: This approach to the nexus between punishment and labor surplus dwells on the human "agency" and ideology of criminal justice personnel, mainly judges. Greenberg (1977) who pioneered this approach avers that in order to explain the strong empirical nexus between rates of unemployment and incarceration, it is logical to suppose that judges are less inclined to allow probation to offenders who are unemployed, or that unemployment affects the degree of community endurance towards offenders, such that judges react by sentencing them to prison.

Box and Hale (1982) also examine the daily microprocesses of interaction between the accusers and the accused and the opinions of judicial decision-makers in order to deal with the "lacunae" that exists in the structural approaches mentioned above. According to them structural explanations that reside at the systemic level call forth a tacit conspiracy theory wherein the powerful intentionally labor to splinter and discipline the unemployed, thereby increasing the rates of imprisonment.

This view of agency sans conspiracy, by emphasizing the

unintended consequences that arise from the accumulated responses of individual judges who habitually respond to defendant characteristics such as unemployment, is suggested by Box and Hale (1982). Since these judges have a conservative inclination they regard unemployment as a cause for the growth in crime and thus regard imprisonment as the normal and rational outcome for unemployed offenders. An accumulation of these decisions by conservative judges reveals an economic and social system that is endangered by its own contradictions. However, this objective consequence was not intended by those individual judges whose decisions resulted in the consequence (Box and Hale, 1982).

Box(1987) and Hale (1989) have both separately built upon the elements of the previous position. According to Box (ibid) the different crime control actors, from the judiciary to the police, each make an "unintended and unwitting" contribution towards a reduction in the existence of the surplus population. These apprehensions combined with the assumption that "unemployment causes crime" apparently affect the outcomes of legal action.

Examining the training and experience of magistrates, Hale (ibid) notes that their normal constituency is "conservative" and they are defenders for the preservation of private property. As such, a growth in the level of unemployment causes them much anxiety because they believe that the unemployed are weak and amoral and are therefore

more likely to be criminal (Hale, 1989).

Melossi (1985a, 1985b, 1989) has also scrutinized the purely structural accounts. Concerning the "great synchrony" of activity that describes unemployment and imprisonment, he notes that what usually passes off as explanation are mere structuralist formulas regarding the 'needs of capital' or the 'need for social control'. (1985b). According to Melossi the problem lies in the fact that these explanations "hypostatize collectivities' behavior such that it is independent from the motivated actions of those involved."

Melossi also points out that neither the state nor the motives of individual agents of control has to be summoned to narrate the relationship between punishment and labor surplus. He submits that these explanations imply a "discursive chain" that links the business cycles to the conditions of punishment. According to him, during periods of economic stagnation, a "discursive chain" of punitiveness and severity engulfs society. Attitudes of moral panic espoused by business leaders and moral entrepreneurs are linked to ways whereby citizens, police, courts and correctional authorities perceive behavior as deviant and/or criminal (Melossi, 1985).

In my opinion this discursive chain may be an indication of a dysfunctional social system in which the dominant social group attempts to hold on to power and

privileges. It suggests that punishment is affected primarily by economic factors. In the next section we will examine the model of punishment put forth by Rusche and Kirchheimer.

Chapter Six

VI. RUSCHE AND KIRCHHEIMER'S MODELS OF EXPLANATION:

This section will describe and examine the Rusche and Kirchheimer model of punishment. The work of Rusche and Kirchheimer is important because it provides a new dimension to the study of punishment. According to Rusche and Kirchheimer, punishment is a social phenomenon that has a set of determinants and a social significance that goes much further than the needs of technical crime control.

The function of state punishment in controlling labor surplus was initially described by Rusche and Kirchheimer (1939). Since their seminal work, a range of accounts have elaborated on their historical assessment (Adamson, 1984; Foucault, 1975; Melossi and Pavarini, 1981). Recently, there have been a range of empirical studies that have scrutinized the relationship between labor surplus and punishment (also referred to as L-P). Several theoretical models have been suggested to explain the L-P nexus. These models are by no means exhaustive but are merely regarded as heuristic sketches that emphasize the key concepts and linkages.

The most famous and puissant use of a Marxist explication of punishment was advanced by Rusche and Kirchheimer in Punishment and Social Structure, and an essay by Georg Rusche in 1933 entitled Labor Market and Penal Sanction. The theoretical propositions that were advocated

may be summarized as under:

i. According to Rusche and Kirchheimer, punishments are considered as historically specific phenomena that occur in particular, concrete forms. Thus, punishment, per se, does not exist, only concrete systems of punishment and specific criminal practices exist. R&K examine punishment in its specific manifestations.

ii. As a consequence of the Marxist interpretation, the historical specificity of punishment is construed rather strictly. It is the emergence of a specific mode of production, its culmination, and its eventual supersession by a revolutionary new mode which punctuates the history of society and typifies its basic processes. Accordingly, the mode of production is the key determinant of particular penal methods in particular historical periods and only a unique development of the productive forces enables the introduction or rejection of corresponding penalties. R&K propound a formula that summarizes the Marxist angle to human history and the locus of punishment therein: every system of production tends to discover punishments which correspond to its productive relationships.

iii. The reason why the R&K analysis is so unique is that it takes the study of punishment in its own right. Although all systems of punishment are invariably oriented towards the control of crime, specific penal methods are never determined by this criteria only, but rather, by wider

social forces and determinants. They argue that penal forms must be looked upon as social artifacts, that cannot be understood solely, by penological ends. Punishment is to be looked upon as a social phenomenon, that has a set of determinants and a social significance which go beyond the technical requisites of crime control.

iv. In their interrelationship with other social institutions, penal institutions are examined with other non-penal aspects of social policy. Penal policy is merely one constituent within a wider strategy of controlling the poor, where the factories, workhouses, the poor laws, and the labor-market all play their respective parts. According to Rusche (1933) the criminal law and the routine of the criminal courts are solely aimed at those people whose class background, poverty, neglected education, or demoralization drove them to crime. Punishment is aimed at the control of the lower strata of society.

v. As a consequence, punishment is not merely a social response to the criminality of individuals, but rather, it is a mechanism which is deeply rooted within the class struggle between rich and poor, bourgeoisie and proletariat. For R&K the class struggle, and the role of punishment, is mainly played out in and around the labor-market, and the emphasis of their research is directed mainly to the economic instead of the political or ideological apparatuses of society.

vi. One of the basic propositions of Marxist theory is that the social relations and institutions in a class society are distorted and misrepresented by the operation of ideology so as to mask their real significance. It is this ideological distortion which enables punishment to be considered as an institution that benefits the whole society, when in reality its real function is to support the interests of one class against another.

One of the main arguments of Rusche and Kirchheimer (1939) was that during a labor surplus akin to that which occurred during the first half of the nineteenth century in Europe, exploitation of labor by the state was substituted with harsh punishment in prison. Penal practices were mainly determined by the economic, fiscal, and social forces. According to them some of the reasons for the diminished value of labor were:

1. The profit, which had ensued to prison managers when men were scarce and wages were high, vanished as did the motive and the means for maintaining reasonable prison conditions (Rusche and Kirchheimer, 1939). As a consequence, harsher prison punishments were the direct outcome of the devaluation of prison labor.

2. The value of free labor and the need to reproduce it was another factor. During the first half of the 19thth century, wages were normally lower than the minimum that was necessary to reproduce the labor power of free workers. In

order for the prisons not to undermine the requisites of free wage labor and the principle of "less eligibility" there was a need to ensure that the upper limit for the maintenance of the prisoners be maintained at a level that was "below the living standard of the lowest classes of the free population." (Rusche and Kirchheimer, 1939).

3. Besides impoverishing the working class the condition of labor surplus also increased the motivation to commit crime. Rusche and Kirchheimer (1939) observed that punishments seemed to get harsher as the masses became poorer, so as to deter them from committing crimes.

Research on Punishment: Longitudinal as well as cross-sectional studies also seem to reveal a relationship between punishment and labor surplus. A series of empirical studies attempted to test the R&K perspective on punishment.

Using national statistics for U.S. and monthly data for Sunshine County, California, Jankovic (1977) performed a test of the Rusche and Kirchheimer theory of punishment to post-industrial society. He examined imprisonment and economic conditions in the U.S. from 1926 to 1974 and discerned a relationship between unemployment and imprisonment that was positive and statistically significant, irrespective of the volume of criminal activity. However, there seemed to be two exceptions to this trend: The relationship did not obtain during the Great Depression (1930-1940) and the Federal imprisonment rates

did not correlate with unemployment rates before 1960. Insofar as the utility hypothesis (eg, imprisonment eventually reduces unemployment) is concerned, there was a negative relationship between imprisonment and lagged unemployment rates in the national sample, though this was not statistically significant. However, at the state level, this negative relationship could not be established.

Joubert et al., (1981) generated a structural model of crime and imprisonment for the U.S. with data from the 1970 census of 49 states examined through a series of path and regression analyses. Aggregate and disaggregate crime rates were examined as dependent variables and the independent variables examined were -- population size, percentage urban, percentage black, per capita income, median educational attainment, and age distribution. Some of their main findings were that crime rates were effectively predicted by structural characteristics, especially urban population attributes. Consequently, prison admissions were predicted by the crime rates. Prison releases did not register a strong correlation with crime rates and prison admissions. However, prison admissions were significantly and positively related to prison releases. Changes in the social structural determinants of violent and property crimes were noticed.

Carroll and Doubet (1983) criticize these findings on the grounds that these findings have several serious

methodological flaws. Using a similar data set, they conducted a second analysis which revealed that these methodological problems could have led them to erroneous conclusions pertaining to social structural variables on prison admission and release rates. They introduced a dummy variable for region which seems to be the strongest predictor for the prison admission rate and the second strongest predictor for the release rate.

Inverarity and McCarthy (1988) examined the Rusche and Kirchheimer thesis that unemployment affects imprisonment directly with crime held constant. They examined an alternative explanation to the R&K thesis : that unemployment plays a diminished role in the dynamics of imprisonment when the labor market is less freely competitive. Their analysis of the post-World War II trend (1948-1984) revealed strong support for the R&K thesis, but revealed little empirical support for dissimilarities in labor markets.

Michalowski and Pearson (1990) conducted a cross sectional, panel analysis of the 50 states for 1970 and 1980. Their findings indicated that neither public revenue nor the level of unemployment were significantly related to interstate variation in rates of imprisonment. The breakdown of data by southern and non-southern states seemed to be the most significant predictor of imprisonment. A scrutiny of the non-southern states revealed that only the proportion of

black males and the rate of violent crime in the population were significantly correlated with the variation in the rates of imprisonment.

Hale (1989) examined the nexus between unemployment, crime levels and use of imprisonment in England and Wales after WWII. The analysis found that there was a statistically significant positive relationship between unemployment and imprisonment after controls were instituted for relevant variables that could affect imprisonment.

Sabol (1989) explored the relationship between unemployment and prison admissions in the English criminal justice system. This study reported: a) There was a gradual growth in prison admissions and the increase in unemployment played an important role in this relationship. b) While developing a behavioral model of judicial expectations, it avers that judges use their expectations as heuristic mechanisms to simplify sentencing decisions, such that unforeseen changes in unemployment have affected sentencing patterns.

All the above trends seem to suggest the presence of extra-legal factors that affect punishment. However, these studies do not examine the role of the fiscal crisis.

Gardner (1987) advocates that it is the over emphasis on labor market conditions, rather than the general political-economic aspects of imprisonment, or the relationship between imprisonment and the development of

capitalism, which is responsible for much of the reductionism in the Rusche and Kirchheimer model as well as in other contemporary Marxian efforts. According to Gardner (1987) the history of the rise of the American prison is the history of models of prison employment. The relationship between imprisonment and the mode of production is not essentially dependent on the industrial nature of imprisonment. Though prison manufacturing made a significant economic contribution to the late mercantilist and more competitive stage of capitalism in the U.S., the demise of prison manufacturing, did not dissolve the economic nature of the relationship between imprisonment and capitalist development.

Punishment and Social Structure, spurred on a profusion of research on crime, economics, and punishment. It has had a major impact on many historical studies and constitutes the point of reference for most debates on punishment. While merely expounding upon the Rusche and Kirchheimer thesis, Melossi and Pavarini, in The Prison and the Factory, narrate the history of prisons in Europe and the U.S. which served to discipline a proletarian work-force by inculcating the factory-based virtues of obedience, hard work and docile behavior. They contend that the state of the labor market directly shapes the internal mechanics of prison regimes. These regimes tend to become rehabilitative when labor is scarce, and destructive when there is a labor

surplus. In spite of its importance, *Punishment and Social Structure*, is not immune from criticism. Much of the historical and sociological research that it spurred demonstrates the limitations of the original arguments, and a need to revise many of its judgements. Historians have indicated many points at which the thesis needs to be qualified as a consequence of more detailed evidence (Innes, 1987; Spierenburg, 1984; Beattie, 1984; Ignatieff, 1971; Rothman, 1971).

Most of the empirical revisions indicate an underlying problem in the theoretical method that is adopted by Rusche and Kirchheimer. They did not propose to offer an extensive accounting of penal events and their historical growth. Instead, the economic arguments in *Punishment and Social Structure* are augmented by references to a range of non-economic forces that are recognized to function in the penal sphere. However, in spite of the presence of a plurality of forces (which the authors themselves suggest), that converge to shape penological outcomes, R&K aver at every stage that the economic causes are always the primary ones that are involved. When other forces like religious enthusiasm, penal theory, social politics, or humanitarianism can be seen as more closely tied with the development of the phenomenon, they are quickly reduced to secondary importance just like 'shadows cast by a more substantial economic reality' (Garland,

1991). As opposed to recent Marxist writers who are cautious to concede the relative autonomy of political and ideological forces and their separate capacity for causal action, Rusche and Kirchheimer advocate a materialist reductionism where economic forces are 'real relations' and the rest of the social complex is merely epiphenomenal.

As such the R&K Model was modified to include the fiscal aspect into the equation. This model will incorporate the effects of fiscal factors on the dynamics of punishment.

Chapter Seven

VII. A MODIFIED MODEL OF RUSCHE AND KIRCHHEIMER:

Although Rusche and Kirchheimer allude to the effect of fiscal factors in the adoption of penal strategies by the state, they did not empirically scrutinize this aspect. This variable was left unexplored in their book, *Punishment and Social Structure*. Recently many scholars have delineated the importance of fiscal forces in the penal strategies adopted by the state. This section examines some of these studies.

According to O'Connor (1973) the volume and composition of government expenditures and the distribution of the tax burden are not determined by the laws of the market but instead reflect and are structurally determined by social and economic conflicts between classes and groups. Some of the basic premises advanced by O'Connor (1973) are: i. The capitalistic state must try to fulfil two basic and often mutually contradictory functions--accumulation and legitimization. The state must try to maintain or create conditions where profitable capital accumulation is possible. The state must also try to maintain or create conditions for social harmony. ii. The fiscal crisis can be understood only in terms of the basic Marxist economic categories. State expenditures have a twofold character corresponding to the capitalist state's two basic functions:

social capital and social expenses. Social capital consists of expenditures required for profitable private accumulation; it is indirectly productive. (There are two kinds of social capital: Social investment and Social consumption). Social investment consists of projects and services which increase the productivity of a given amount of labor power and ceteris Paribus, increases the rate of profit, eg. state financed Industrial Development Parks. Social consumption on the other hand constitutes projects and services that lower the reproduction costs of labor and, other factors being equal, increase the rate of profit eg. social insurance expands reproductive powers of the work force as well as lowers labor costs.

Social expenses consist of projects and services that are required to maintain social harmony in order to fulfil the state's legitimization function. These are not even indirectly productive.

1. The first basic thesis is that the growth of the state sector and state spending is functioning increasingly as the basis for the growth of the monopoly sector and total production. On the other hand, it may be postulated that the growth of state spending and state programs is the result of the growth of monopoly industries. The growth of the state is both a cause and effect of the expansion of monopoly capital. The socialization of the costs of social investment and social consumption capital increases over

time and increasingly is needed for profitable accumulation by monopoly capital. The general reason seems to be that the increase in the social character of production (specialization, division of labor, interdependency, growth of new social forms of capital like education, etc.) either prohibits or makes unprofitable the private accumulation of constant and variable capital. The growth of the monopoly sector is irrational since it is accompanied by unemployment, poverty, and stagnation. In order to insure mass loyalty and maintain its legitimacy, the state has to meet various demands of those who foot the "costs" of economic growth.

2. The accumulation of social capital and social expenses is a contradictory process which creates tendencies toward economic, social and political crisis. Two separate lines of enquiry are explored: i. Though the state has socialized more and more capital costs, the social surplus continues to be appropriated privately. The socialization of costs and private appropriation of profits creates a fiscal crisis or "structural gap", between state expenditures and state revenues. This leads to a tendency for the state expenditures to increase more rapidly than the means of financing them. Although the accumulation of social capital indirectly increases total production and societys' surplus and thus in principle appears to underwrite the expansion of social expenses, large monopoly

sector corporations and unions strongly resist the appropriation of this surplus for new social capital or social expense outlays.

ii. The fiscal crisis is exacerbated by the private appropriation of state power for particularistic ends. Many "special interests" (corporations, industries, regional and other business interests) make claims on the budget for various kinds of social investment. These claims are politically processed in a manner that is legitimated or obscured from public view. Organized labor and workers make different claims for various kinds of social consumption, and the unemployed and poor (including businessmen in financial trouble) stake their claims for expanded social expenses. Very few claims are coordinated by the market. Many claims are processed by the political system and are won or lost due to the political struggle. Since the accumulation of social capital and social expenses occurs in a political framework there is a lot of waste, duplication, and overlapping of state projects and services. Some claims conflict and cancel one another out. The accumulation of social capital and social expenses is a highly irrational process from the standpoint of administrative coherence, fiscal stability, and potentially profitable private capital accumulation.

O'Connor avers that the monopoly sector produces surplus capital and surplus people. Surplus capital leads

to the development of foreign markets, which call for warfare expenditures by the government. An increase in the surplus population endangers social harmony, which calls for an absorption into control agencies such as jails, mental institutions, prisons and welfare programs. It is during the fiscal crises that these control needs are most acute.

King and Gurr (1988) examined the combination of expanding social welfare expenditures and shortfalls in revenue, with emphasis on the role of the state and its capacity to address, absorb, and resolve pressures associated with crisis tendencies. After analyzing comparative data on national and urban fiscal stress in six western countries they found that the state, via its policies not only contributes to the incidence of economic difficulties but also attempts to control their consequences so as to realize its own best interests. They argue that O'Connor's thesis does not adequately consider the independent role and impact of state interests beyond mere legitimation requirements in short-term fiscal crises.

Boswell (1981) constructs a theory of the State using Poulantzas (1979), Althusser (1971), and O'Connor (1973) and applies it to the repression of union strike activity. Reviewing the national and local context during World War I, he presents case studies of state repression in the copper industry employing data from newspapers, court cases, and other documents. According to Boswell's theory, a process

of state repression along with legitimation of the state effectively disorganized labor. The factors having a determinate effect on this process are the organization and ideology of capital and labor, mediated by the relative autonomy of the state. The federal state is relatively more autonomous than the local state, since more factions of capital are under its jurisdiction. A comparative analysis of case studies shows that legitimacy lost by highly repressive local and state actions, such as deporting strikers, was resorted to by the federal state. According to this analysis the greater relative autonomy of the federal state enabled it to act against the immediate interests of capitalists in order to benefit capital. Differences between liberal and radical labor unions also seemed to have had important effects.

O'Connor (1981) examines former President Ronald Reagan's economic and budget policies, based on the view that economic crises and inflation are caused by federal deficits, government over-regulation, the welfare system, and government intervention. As opposed to this view, traditional Marxism holds that the crisis results from insufficient government spending because of declining tax revenues from the steadily sinking private sector. A middle ground is examined as opposed to the above two views. O'Connor suggests that the crisis stems from social class struggle that leads to an expanded social budget (partly

supporting Reagan's idea) and that the present economic malaise lays a heavy burden on state and local governments (reifying the Marxist view). According to O'Connor the fall in the rate of profit is not a result of the over production of capital as asserted by Marx, but because of underproduction. O'Connor postulates that the fiscal crisis of the government has been gradually developing on its own, independent from the trend in capitalist development. In this article O'Connor implies a departure from the ideas advanced in the Fiscal Crisis of the state (1973).

Loxley (1982) discusses the early attempts at social class analysis to the field of public finance: Goldscheid's "A Sociological Approach to the Problems of Public Finance" and O'Connor's "Fiscal Crisis of the State" . Although Goldscheid wrote over fifty years before O'Connor, both these authors advocate the view that state expenditures play a crucial role in monopoly capital accumulation, that there is tax exploitation, that the structure of state budgets should be explained in social class terms, that the capitalistic state is dispossessed, and that finally social justice would require the expropriation by workers of the share of their companies' income going to profits. Aside from these points both their works differ greatly. Goldscheid argues for state capitalism to solve the problem of social justice. O'Connor suggests a socialist solution. The main drawback of both these works is that they fail to

clarify the social class structure of monopoly capitalist society. The main weakness in O'Connors' work is the outright absence of social class struggle in an otherwise insightful perspective on capitalism.

According to Gold, Clarence, and Wright (1975) the instrumentalist, structuralist, and Hegelian-Marxist concepts of the state have not been able to provide an understanding of its role in advanced capitalist societies. They examine three other theories to remedy this defect. a. The first theory advanced by Offe (1972) attempts to give a more precise specification of what is capitalist about the capitalist state. O'Connor builds a theory of state finance based on the process of accumulation of monopoly capitalism. Wolfe (1974) attempts to make the abstractions of Hegelian Marxism more concrete. Although when taken together, all the above approaches fail to provide a fully elaborated theory of the state, they do lay the basis for such a theory, and question the rigid structure of the state as a superstructure perched on the economic base of society. The state is seen as relatively autonomous, but not absolutely so.

These studies suggest a "dirty hands" theory (Coady, 1993) which can be explained via Machiavelli who advocated that the Prince 'must learn how not to be good'. The idea that political life involves the violation of ordinary morality is a perennial theme. During the nineteenth

century it was a common, though not universal view. Many philosophers echoed this view. Sartre characterized it as the problem of "dirty hands".

I will analyze the prison population by race because I am interested in assessing the effect of penal policy on the marginal populations. Thus, race will be employed as an indicator of marginality and will signify African Americans. This group constitutes a very responsive barometer to the contextual economic change. During an economic downturn this group is the first to turn to crime, to be laid off, and to show an increase in incarceration. It is on this basis that I will justify my analysis of African Americans.

Chapter Eight

VIII. METHODOLOGY:

The main purpose of this research is to test the hypothesis that socio-economic factors exert a variable influence on the application of punishment. State level data from 1926 through 1986 were chosen for the purpose of analysis. This study employs prison admission rates as a proxy for punishment. Thus the dependent variable (output) for this study consists of annual prison admissions rates. The prison admissions rates are controlled for by ethnicity in order to discern differential patterns. This research endeavor also examines independent variable constructs (inputs) that had not been examined fully in punishment research.

RESEARCH QUESTIONS:

This enquiry will examine the following questions:

- What is the relationship between penal policy and socio-economic and fiscal factors?
- a) Are marginal groups more likely to be punished b) are marginal groups more likely to be punished during periods of fiscal/economic crisis?

This research will improve upon prior research by incorporating a longitudinal design for state-level data. It seeks to overcome some of the problems of time series

analysis by employing abductive networks to analyze the data. State level data are much more pertinent than national level data since prison policy is directed by states and a majority of the decisions about penal practices are made at the state level (Sabol, 1989). State level data also enable us to analyze variables that are not easily available at the county level.

This research makes a contribution to the labor-surplus punishment research in two respects. Firstly it employs a new technique to analyze the data by using abductive networks and secondly, it examines the fiscal variables more closely in their relationship to punishment. Six basic clusters of independent variables are created to examine the dynamics of punishment --- social, economic, inequality, fiscal, control and crime.

Prior race and imprisonment research is improved upon by incorporating race specific data for unemployment and illegitimacy rates. Further, divorce, suicide and immigration rates are also examined longitudinally to determine their effect on punishment. Fiscal constraint research is further enhanced by examining the fiscal factors such as the amount of deficit and the total public debt to discern the effect of these variables on punishment.

OPERATIONALIZATION:

The dependent variable, punishment was operationalized

as the rate of total state prison admissions for a given year. The harshness of punishment will be defined by the frequency of persons punished for any given year. This will be signified by the prison admission rate. A higher prison admission rate will signify a harsher punitive response whereas, a lower prison admission rate will signify a relatively lenient punitive response. The independent variables for this study consists of five different components: social, fiscal, economic, crime and social control. Each of these components will be outlined below.

DEPENDENT VARIABLE: The dataset that was used to compute prison admissions is entitled: Race of Prisoners Admitted to State and Federal Institutions in the United States, 1926-1986. This data was obtained from the National Archive of Criminal Justice Data which is sponsored by the Bureau of Justice Statistics, U.S. Department of Justice, and is operated by the Inter-university Consortium for Political and Social Research. This dataset includes tabulations of the yearly adult admissions to Federal and State correctional institutions by race. It is in machine-readable format. Data are compiled for the years 1926 through 1986 and include data for prisons in each of the 50 states and the District of Columbia, along with Federal prison totals and U.S. totals. The data are derived from a voluntary reporting program where each state, the District of Columbia and the Federal Bureau of Prisons, reported

summary and detailed statistics as part of the National Prisoner statistics series. Data for each state and the U.S. population are provided according to racial criteria. These data belong to the class II category. Table I lists all the variables along with the sources from which these have been obtained.

The dependent variable was computed by taking the total state prison admissions for the year divided by the total population and multiplied by 100,000.

STOTRATE (V2) will signify the Total State Prison Admission Rate for the year. For any given year this will signify the total number of prisoners admitted to prison per 100,000 of the population. SWHIRATE (V3) and SBLKRATE(V4) will signify the total state prison admission rates per 100,000 for whites and blacks respectively. These rates were computed for the period from 1926 through 1986. For some years (1951 to 1959; 1961, 1963, 1965 to 1969; 1971 to 1973) the admissions data were not available. In these years the researcher employed the technique of extrapolation to fill in the missing data.

TABLE I: LIST OF VARIABLES

Var num	SPSS Variable	Variable label	Source
v1	YEAR	Relevant year	
v2	STOTRATE	Total State Prison Admission Rate	I1
v3	SWHIRATE	White State Admission Rate	I2
v4	SBLKRATE	Black State Admission Rate	I3
v5	WAR	War years	D1
v6	UNEMP	Per cent Unemployed	D2
v7	BLUNEMP	Percent Black Unemployed	D3
v8	WHUNEMP	Percent White Unemployed	D4
v9	SURDEF	Surplus or Deficit	D5
v10	TOPUBT	Total Public Debt	D6
v11	BIZFAIL	Business Failure Rate	D7
v12	SUIRATE	Suicide Rate	D8
v13	ILLIRATE	Illegitimacy Rate	D9
v14	ILLIBLK	Black Illegitimacy rate	D10
v15	ILLIWH	White Illegitimacy rate	D11
v16	DIVRATE	Divorce Rate	D12
v17	RESRATE	Rate of Resident Prisoners	U1
v18	CRM RATE	Total Crime Rate	U2
v19	VCRATE	Violent Crime Rate	U3
v20	PRCRATE	Property Crime Rate	U4
v21	HOMRATE	Homicide Rate	U5
v22	IMGRATE	Immigration Rate	D13
v23	GINIAG	Aggregate Gini Ratio	C1
v24	GINIWH	White Gini Ratio	C2
v25	GINIBLK	Black Gini Ratio	C3

Sources for Table 1:

I1= Race of Prisoners Admitted to State and Federal Institutions in the United States, 1926-1986. Inter university Consortium for Political and Social Research. (ICPSR# 9165)

I2= Race of Prisoners Admitted to State and Federal Institutions in the United States, 1926-1986. Inter university Consortium for Political and Social Research.

I3= Race of Prisoners Admitted to State and Federal Institutions in the United States, 1926-1986. Inter university Consortium for Political and Social Research.

D1=War years. This variable dummy coded 1 for years when there was a war and 0 when there were no war conditions. The war years may be divided into three periods: a) World War II from December 1, 1941 to December 31, 1946; b) Korean war: from June 25, 1950 to July 27, 1953; c) Vietnam war from August 4, 1964 to January 27, 1973.

D2= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data from 1926 through 1986 were taken from page 75, Series D85-86.

D3= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1948 through 1986 and were taken from page 76, Series D87-101.

D4= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1948 through 1986 and were taken from page 76, Series D87-101.

D5= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1926 through 1986 and were taken from page 443, 441. Series Y339-342, Y335-338.

D6= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1926 through 1986 and were taken from page 443, 441. Series Y339-342, Y335-338.

D7= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1926 through 1986 and were taken from page 369. Series Y20-30.

D8= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1926 through 1986 and were taken from page 157. Series Y971-986.

D9= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1940 through 1986 and were taken from page 40. Series B 28-35. Data were not available for the following years 1941 to 1949, and 1951 to 1954.

D10= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1940 through 1986 and were taken from page 40. Series B 28-35. Data were not available for the following years 1941 to 1949, and 1951 to 1954.

D11= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1940 through 1986 and were taken from page 40. Series B 28-35. Data were not available for the following years 1941 to 1949, and 1951 to 1954.

D12= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1926 through 1986 and were taken from page 46. Series B 216-220.

D13= These data were obtained from Kurian, George Thomas (1994) Datapedia of the United States 1790-200. America Year by Year. Lanham, MD: Bernan Press. Data were only available from 1926 through 1986 and were taken from page 60-62. Series C 89-119. The immigration rate was constructed by dividing the total number of immigrants for the year by the total number of persons in the resident population for the year and then multiplied by 1000000.

U1= U.S. Department of Justice, Bureau of Justice Statistics, Sourcebook, Washington, D.C.: U.S. Government Printing Office, 1988, Page 540.

U2= Data prior to 1930 were not available or were of very poor or doubtful quality. Data from 1930 through 1959 were obtained from U.S. Justice Department. Investigation Bureau. Uniform Crime Reports for the U.S. Federal Bureau of Investigation. Data from 1960 through 1986 were obtained from the publication entitled: U.S. Department of Justice, Bureau of Justice Statistics, Sourcebook, Washington, D.C.: U.S. Government Printing Office, 1994, Page 305.

U3= Data prior to 1930 were not available or were of very poor or doubtful quality. Data from 1930 through 1959 were obtained from U.S. Justice Department. Investigation Bureau. Uniform Crime Reports for the U.S. Federal Bureau of Investigation. Data from 1960 through 1986 were obtained from the publication entitled: U.S. Department of Justice, Bureau of Justice Statistics, Sourcebook, Washington, D.C.: U.S. Government Printing Office, 1994, Page 305.

U4= Data prior to 1930 were not available or were of very poor or doubtful quality. Data from 1930 through 1959 were obtained from U.S. Justice Department. Investigation Bureau. Uniform Crime Reports for the U.S. Federal Bureau of Investigation. Data from 1960 through 1986 were obtained from the publication entitled: U.S. Department of Justice, Bureau of Justice Statistics, Sourcebook, Washington, D.C.: U.S. Government Printing Office, 1994, Page 305.

U5= Data prior to 1930 were not available or were of very poor or doubtful quality. Data from 1930 through 1959 were obtained from U.S. Justice Department. Investigation Bureau. Uniform Crime Reports for the U.S. Federal Bureau of Investigation. Data from 1960 through 1986 were obtained from the publication entitled: U.S. Department of Justice, Bureau of Justice Statistics, Sourcebook, Washington, D.C.: U.S. Government Printing Office, 1994, Page 305.

C1= These data were culled from the Internet home page of the U.S. Bureau of the Census CD-ROM, Income and Poverty: 1993. Data were available from 1947 onwards for the general population.

C2= These data were culled from the Internet home page of the U.S. Bureau of the Census CD-ROM, Income and Poverty: 1993. Data for the white population were available from 1947 onwards.

C3= These data were culled from the Internet home page of the U.S. Bureau of the Census CD-ROM, Income and Poverty: data were not available. In these years the researcher employed the technique of extrapolation to fill in the missing data.

INDEPENDENT VARIABLES:

In order to discern the temporal effects of socio-economic variables on punishment the independent variables were lagged by two years. For dependent variables in 1928, socio-economic data for 1926 were employed.

The use of this two year lag for independent variables was employed to mitigate causal order problems. The justification for this lag was the fact that it takes about two years for a criminal case to reach a decision and therefore, for punishment to take effect.

Independent variables were grouped into the following causal clusters: a) social; b) economic; c) fiscal; d) social control; e) crime; f) social inequality.

The effect of fiscal factors on punishment was sought to be captured by variables V9 (SURDEF) the surplus to deficit ratio and V10 (TOPUBT) the total public debt. These were employed to test the hypothesis that fiscal crises lead to a legitimation crisis which in turn lead to an increase in punishment (O'Connor, 1973).

The economic dimension was sought to be captured by the variables: V6 (UNEMP) percent unemployed, V7 (BLUNEMP) black percent unemployed, V8 (WHUNEMP) white percent unemployed, V11 (BIZFAIL) business failure rate. Earlier studies found that greater unemployment leads to an increase in punishment (Greenberg, 1977; Box and Hale, 1977; Jankovic, 1977). Melossi (1985) found that during periods of economic decline

a discursive chain links business cycles with conditions of punishment.

The Gini ratio was also incorporated as a proxy for social inequality. This variable was further broken down by race to examine the separate ratios for blacks and whites. The Gini coefficient is computed from the distribution of aggregate income. It is constructed by first dividing the population into five groups. The lowest and the highest fifth (quintile) is added and this is then divided by the population. The total is then divided by the residential population and multiplied by 100,000 in order to create a standardized, per capita inequality statistic. The higher the value of the Gini coefficient the greater is the amount of social inequality in a society, the lower the value of the inequality ratio the lesser the amount of inequality. This statistic was obtained from the U.S. Bureau of the Census. The Gini ratio is available from 1947 through 1986, prior to this date it was not available. However, for the black population, this statistic was only available from 1966 onwards.

The social dimension was sought to be captured by variables V5 (WAR), V12 (SUIRATE) suicide rate, V13 (ILLIRATE) illegitimacy rate, V14 (ILLIBLK) black illegitimacy rate, V15 (ILLIWH) white illegitimacy rate, and V16 (DIVRATE) divorce rates; Each of these variables signifies a rate which is computed per 100,000 of the

resident population. According to Hale (1989), magistrates and other crime control actors have a conservative ideology. They believe the unemployed tend to be weak and amoral and thus are more likely to be criminal. V5 (WAR) however is a dummy variable which is coded 1 for years when the U.S. was at war and 0 for years when there was no war.

Social control measures are also examined through variables V17 (RESRATE) rate of resident prisoners and V22 (IMGRATE) immigration rate. The immigration rate and the rate of resident prisoners are sought to echo this concept.

In order to gauge the impact of crime on punishment the following variables were computed: V18 (CRMRATE) total crime rate, V19 (VCRATE) violent crime rate, V20 (PRCRATE) property crime rate and V21 (HOMRATE) homicide rate. One of the key elements of labor surplus-punishment theory is that labor surplus has a direct effect on punishment independent of its indirect effect on crime. If crime is not controlled for the indirect and direct effects of labor surplus are confounded, however, controlling for crime isolates its direct effects (Box, 1987; Chiricos, 1987). This researcher recognizes the limitations of early crime data. Most of the early crime data may not reflect a true picture of reality because crimes other than homicide may be more an indicator of police activity than the actual number of crimes that were committed.

HYPOTHESES:

1. Ceteris Paribus, the punitive index will vary inversely with the fiscal status of the state. Punishment will tend to be more severe when the economy is not healthy.
2. Ceteris Paribus, punishment varies in indirect proportion to the value of labor; when there is an increase in unemployment (i.e. decrease in the value of labor) the state tends to be more punitive.

The present methodological paradigms in criminal justice seem to be deficient with respect to analyzing complex social phenomena. As opposed to natural phenomena, social phenomena are in constant flux, and have very rich and intricate processes. The methods for analyzing and explaining social phenomena and social structures will need to employ some of the new methodological paradigms that have recently been unfolding. Compared with the probabilistic, and linear methods that have been prevalent, my proposed new non-probabilistic, and non-linear method acknowledges the deficiency and incongruence of these methods and suggests one that is more amenable to the study of complex social phenomena (Anderson et al., 1988; Gleick 1987; Rossomo, 1992; Wells and Hanson, 1992; Barton, 1994; Hastings et al., 1993; Forrest, 1993; Vila, 1994). Probabilistic accounts of human activities are based on strictly deterministic or mechanistic accounts. Many of the conventional accounts of probability have an underlying deterministic procedure with

a mindlessly random process overlaid on it. In many statistical applications to the social sciences, the random processes are considered as "noise" which has to be removed in order to reveal underlying causal or predictable processes.

This study will improve on prior analyses by adopting a different method for looking at the data. It will employ a non-linear technique to longitudinally examine state level data on prison admissions. A parallel database of socio-economic conditions during this period will also be constructed from the sources outlined in Table I. This approach will be adopted to rectify the problems encountered by Time Series analysis, which seems to exhibit artifactual strength by providing positively biased coefficients and masking the real nature of the socio-economic determinants of punishment.

ABDUCTIVE INFORMATION MODELING:

This study is among the first to employ the non-linear technique of Abductive Information Modeling (AIM) to the analysis of criminal justice data. AIM is a numeric modeling tool that automatically learns numeric knowledge through a database of examples. It is an artificial intelligence tool that allows us to automatically develop powerful computer solutions from examples. From a database of examples, AIM automatically synthesizes a mathematical model of the relationships in the data. AIM then proceeds

to implement the resulting model as a standard computer program. It provides excellent results for modelling numeric parameters like expert judgements, probabilities, fuzzy values, prices, costs, sensor readings and control settings. These models are not implemented as rules, but rather as mathematical models called abductive networks. Some of the typical applications of AIM are: financial analysis, credit evaluation, process control, simulation, data analysis, forecasting and decision aiding. AIM is based on two key factors: 1. Mathematical functions are an extremely powerful representation for numeric knowledge; and 2. A network structure greatly simplifies the task of learning functional models. A consequence of this is networks of powerful functional elements which are called abductive networks. An abductive network is a network of functional nodes. Each of these nodes consists of a mathematical function which computes an output given a number of inputs. In an abductive network, information flows from the input variables through the network to the output variables.

Most production rule expert systems work best for problems that involve certain or crisp data and knowledge that can easily be represented by symbolic rules. The general features of problems where abductive methods are better than conventional system methods comprise of applications where there are:

- a. missing, unreliable, imprecise, or contradictory data.
- b. continuously valued factors that make it impractical to apply symbolic rules.
- c. unknown relationships among the variables.
- d. data derived from human experts whose data is derived from numeric judgements;
- e. approximate solutions to problems that cannot be solved exactly.

AIM networks can be easily integrated with conventional software and production-rule expert systems to create hybrid systems that can benefit from both types of software.

Writing more than 2,400 years ago Aristotle created a problem when he defined and developed the forms of logic. Since then these problems have been with us. Aristotelian logic is the basis for digital computers, most of the sciences and mathematics and most modern machines and appliances. Aristotle got it all wrong. We ought to concentrate on a different kind of logic, one that more closely resembles the manner in which humans think and use words. This new "Fuzzy logic" has the potential to change almost everything in our lives, from our automobiles and appliances to our computers as also the way whereby we understand our world and our interpersonal relationships. The two fundamental axioms of Aristotle's formal logic were so self-evident that they defied self-examination. These

were the law of Contradiction and the law of the Excluded Middle. Fuzzy Logic is not the same as probability, rather, it is a rigorous logic of fuzzy values. Once a membership or inclusion values have been assigned all of fuzzy logic's operations are precise mathematical steps. What differentiates fuzzy logic from classical logic is its ability to work with "fuzzy" shades between complete truth (1.0) and complete falsehood (0.0) (Brothers, 1995).

Fuzzy logic is a multi-valued extension of classic logic and was invented by Lotfi Zadeh in 1964. Zadeh initially suggested that fuzzy logic would be most useful in psychology, philosophy, and the human-oriented sciences, because it can represent the meanings of everyday speech. Later he demonstrated how fuzzy logic could control complex systems.

THEORY: The theory of Abduction capitalizes on theories and approaches that have been generated in related fields of research. Some of the chief areas of research related to abductive reasoning include: statistics, machine learning, expert systems, fuzzy set theory (Zadeh, 1973), qualitative reasoning, and neural science.

The main purpose for defining a new form of abductive logic is to provide a name for the unique amalgamation of techniques, development methods and philosophy. A major impetus for developing abductive modeling is to develop a very simple and useful problem solving method based on the

concepts of reasoning with numeric functions and function-finding by employing networks.

While comparing Abduction with regression we may note that regression is the process whereby we find a mathematical function that best represents the relationships among input (independent) and output (dependent) variables in a database. Regression techniques are usually parametric and require the researcher to specify the functional form of the solution. Linear regression is one of the basic forms of parametric regression. Unless the researcher knows or happens to guess the correct underlying form of the relationship this form of regression generally results in inaccurate models. Researchers need to invest much time experimenting with different functional relationships and regression algorithms to obtain acceptable models. In cases where the underlying form of the function is known, linear regression is more appropriate than AIM, however, the form of this relationship is known in very few cases. When no assumptions regarding the type of function or variable distributions are employed the regression is non-parametric. The AIM network synthesis process may be classified as a form of non-parametric regression because it discovers the network architecture automatically for a given database of examples. AIM produces very compact and rapidly executable models and gives a practical method for applying non-parametric regression. AIM effectively estimates conditional

probabilities and does not require the user to make assumptions such as the underlying distribution or that the input variables are independent. In the absence of the independence assumption, conditional probabilities will be needed for all combinations of input variables -- this results in the need for an unrealistic amount of data for most complex applications. AIM captures functional, fuzzy, structural, and probabilistic relationships among the variables automatically without making unrealistic assumptions.

Compared with neural networks which are based on analogies to biological neurons for learning relationships, abductive networks are not limited to neuron analogies. The development of abductive networks is performance motivated rather than biologically motivated.

AIM relies on an innovative new approach to numerical problem solving. It is based on a novel form of numeric reasoning called Abduction and revolutionary machine learning techniques called Abductive modeling. These are combined to yield a problem solving technology that offers practical solutions to problems that are impractical to solve with other computer methods.

In the late 1800s, the philosopher Charles S. Peirce popularized the term Abduction (1956). Though his description of Abduction and later definitions differed in various ways, they centered around one common issue ---

reasoning under uncertainty. A state of uncertainty exists when there is insufficient information to draw conclusions with absolute certainty. This is caused by factors such as missing, noisy, unreliable or contradictory data. Since Abductive modelling furnishes a practical and cost-effective method for solving problems that involve uncertainty, it is useful for real-world problems. Abduction can be distinguished from deduction, where decision factors are assumed to be known with complete certainty. Conventional software and expert systems generally perform deduction and are thus unable to effectively deal with uncertainty. Deductive reasoning is accomplished by employing true/false and black/white relationships instead of continuous numeric ones.

Numeric functions aptly describe complex relationships that could otherwise require many thousands of symbolic rules or decision table entries. Thus since abduction involves reasoning using functions, it can handle much more complexity than deductive methods.

FUNCTIONS: Functions are very powerful means of knowledge representation. Though production rules (if/then) are very effective at modeling discrete symbolic knowledge, there are many cases where knowledge contains complex numeric relationships that are impractical and cannot be modelled by production rules alone. AIM can develop functional models for many of these cases in a manner that is generally more

compact and faster to execute than production rules.

The power of a function is based on the fact that the outputs can have any numeric value and can represent any concept irrespective of the fact that the concept has a physical interpretation or it is an abstraction. A function can be employed to represent probabilities, variables like speed and altitude, concepts like "old" or "tall", or abstract concepts that have no direct meaning such as a desirability.

NECESSITY OF INDUCTION: Based on the fact that functions are a powerful means of knowledge representation, the task that we face is to discover the best functional model. On account of the inherent uncertainty associated with abduction, analytical derivation of the functions is generally precluded and empirical methods like induction must be employed. Subtle relationships that may not be detectable through an analytical analysis may be discovered through the induction process. Inductive methods have many practical advantages for discovering relationships. In the process of learning complex relationships AIM can automatically evaluate a variety of potential models. Further, induction can simplify the maintenance of a system. On new knowledge or information being acquired, a new model can be synthesized to automatically learn from the new examples.

NETWORKS AND THE LEARNING PROCESS: The process of

inductively determining the best function for a model is a complex problem. One practical method of finding the best model is to employ a network of functions. Networks simplify induction since only the relationships among small subsets of variables have to be discovered at any period. The strength of abductive networks is based on the fact that they are capable of dealing with complex problems by splitting them up into smaller and simpler ones. This is similar to the concept of an organizational chart in a company. At each layer of a company, information is summarized and passed on to higher levels of management. This enables decision making based on a smaller number of factors at each level, irrespective of all the details associated with the various options. The networking concept is similar to the concept of chunking that was proposed by George Miller in 1956. Miller (1956) averred that human beings are only capable of processing seven, plus or minus two, items effectively at a time. This processing constraint is overcome by chunking, or grouping together a number of elements and treating the group as a unit.

DEVELOPING AN ABDUCTIVE NETWORK MODEL: AIM has developed from almost thirty years of statistical modelling, neural network, and artificial intelligence research. It is a robust supervised inductive learning tool for automatically synthesizing abductive network models from a database of

input and output values for example situations. The database in question may be comprises of observed, historical, simulated, or expert generated data. The model that emerges from the AIM synthesis process is a robust and compact transformation that is implemented as a layer of feed-forward functional elements. The functional element coefficients, number of network elements, types of network elements, and the connectivity are all learned from the data. AIM has seven type of nodes or elements¹.

All the terms in an equation may not appear in a node because AIM will carve (throw out), terms that do not contribute significantly to the solution. Singles, doubles and triples are elements whose names are based on the number of input variables. These elements are third degree polynomial equations, and the doubles and triples have cross-terms, allowing interaction among the node input variables. Output from any given element can feed into subsequent layers, along with the original input variables. Networks are synthesized from layer to layer until the network model ceases to improve based on the PSE criterion. Eligible inputs for each layer and the network synthesis strategy are defined in a set of rules and heuristics that are an inherent part of the synthesis algorithm.

¹ These seven nodes/elements are: singles, doubles, triples, white elements, normalizers, unitizers and wire elements.

Chapter Nine

IX DATA ANALYSIS:

The data set obtained from ICPSR was first read by the statistical program SPSS. After combining the data file with the other variables that were constructed from collateral sources for social, economic, crime and Fiscal indicators, the researcher then combined the whole data set into a master file. The SPSS master file was then ported as a column-delimited ASCII file into AIM so that it could read the data. AIM was then employed to test the data for the extra-legal effects on punishment.

AIM proceeds through a four-stage process so far as data analysis is concerned. These are:

1. Database construction.
2. Creation of an AIM model.
3. Evaluation of model performance.
4. Implementation of model

An ASCII file was checked and read into AIM. This file had 25 column variables and 61 row cases. The next step was to synthesize the network. The network size, connectivity and parameter values were all determined by AIM. Some of the parameters could be adjusted to fine-tune the synthesis process. The only parameter that significantly affects model performance is the Complexity Penalty Multiplier

(CPM). As the CPM is increased, the network is penalized for more complexity. If the CPM is decreased AIM will allow much more complex networks that may overfit the data. When the CPM is left at the default of '1' AIM selects a best estimate for the complexity penalty based on the variance of the output variable observations.

After synthesizing the network the researcher must determine how well it performs. The Evaluate module in AIM assists in determining how well a network performs on a specified database. Usually a database is split into training and evaluation data prior to synthesizing a network. With the present database, the researcher did not split the database because it is was too small to be split, however, the evaluate module was carefully checked to see how well the data was being modeled.

Through the Evaluate option AIM generates Individual Errors and an Error Histogram. The Individual Errors table displays the difference between the actual output value and the AIM network output value for each observation in the evaluation database. Summary statistics of the overall performance for the model are displayed. The Error Histogram file generates a histogram of errors for each of the output variables. This histogram is very useful because it visually depicts the quality of the results. Normally the errors for an accurate unbiased model should mirror a gaussian distribution with a mean of zero.

Once the model performance has been deemed satisfactory there are two ways that the network can be used. Through the Query module one can give the network a set of input values which are then used by AIM to compute the network output values. AIM can also generate 'C' source code that can be integrated into application programs.

For each of the outputs (dependent variables) the results were analyzed to come to the following conclusions: For variable V2 (STOTRATE) an analysis of the results reveals that when the lagged data were used, all but three inputs (independent variables) were carved out. Figure 1 reveals that STOTRATE is a function of the following three variables: V16 (DIVRATE) Divorce rate, V17 (RESRATE) Rate of resident prisoners and V21 (HOMRATE) Homicide rate. Since all the other variables did not contribute significantly towards explaining the change in the output they were carved out (dropped) from the model.

These data were actually lagged at three levels and the researcher examined the results at lag zero, lag one and lag two. Figure 2 depicts the Histogram of errors for V2. The histogram reveals that the data are fairly evenly distributed. Most of the errors center about the mean. Table 4 depicts these data in numeric form. This data tells us how well the network model is performing. Table 3 displays the list of summary statistics for variable v2. It reveals that the network has a FSE=14.284 and a PSE=24.125.

This network was tuned by adjusting the Complexity Penalty Multiplier (CPM) to obtain the optimum performance. Table 11 details the results and the tuning parameters for variable V2. Initially, the researcher lagged the data for up to 5 lags. However, it was noted that after two lags the network became unstable and depicted very complicated models. It was therefore decided to conduct the analysis for up to two lags only. It is interesting to note that at lag zero the variables that remained in the model were V10 (TOPUBT), V11 (BIZFAIL) Business Failure Rate, and V19 (VCRATE) Violent crime rate. Table 2 depicts the relevant data for V2.

White Prison Admissions: After running through the database only three nodes (variables) were left in the network model. The model displayed the following three nodes: the divorce rate (DIVRATE), the homicide rate (HOMRATE), and the rate of resident prisoners (RESRATE). Figure 3 displays a network with three nodes with normalizers and unitizers and a triple network. Since none of the other variables made a significant contribution towards explaining the change in the output they were carved out from the model.

Figure 4 displays a histogram of errors for the white prison admissions (SWHIRATE). The histogram reveals that the data are evenly distributed. Most of the error distributions tend to center around the mean. Table 7 gives

details of information about network errors for white prison admissions. A perusal of the data reveals that the network performs well so far as predicting the data is concerned. Table 6 reveals that the network has an average squared error or FSE=8.5235 and a PSE=16.682. This network was tuned by adjusting the CPM to obtain optimum performance. Table 12 gives details of the tuning parameters employed and the results achieved. Data for SWHIRATE were also lagged for up to 5 years. However after 2 lags the network became far too complex to be meaningful. Therefore, the researcher decided to limit the analysis up to two lags. The relevant nodes that remained in this model at lag 0 lag 1 and lag two are summarized in Table 8.

Black Prison Admissions:

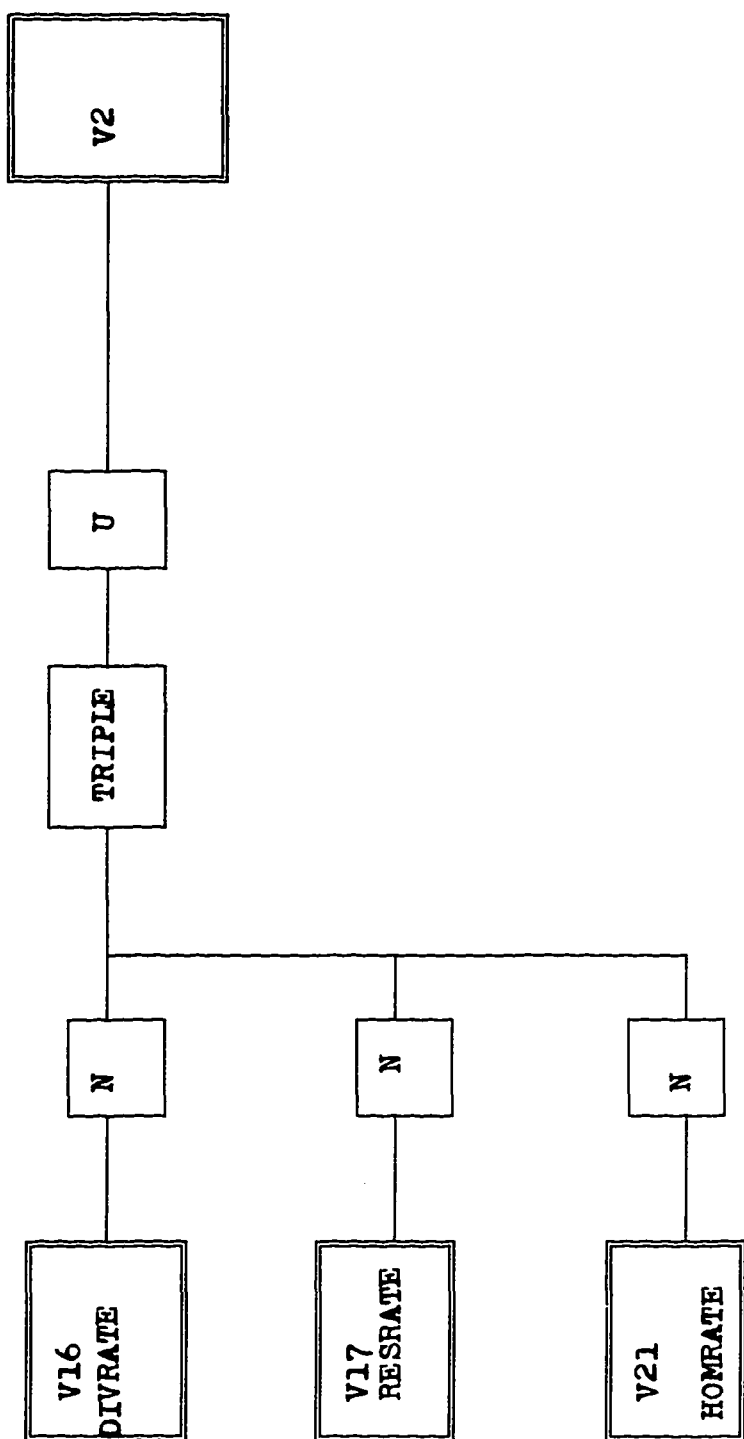
After running through the database only three nodes (variables) were left in the network model. The model displayed the following three nodes: the divorce rate (DIVRATE), the homicide rate (HOMRATE), and the rate of resident prisoners (RESRATE). Figure 5 displays a network with three nodes with normalizers and unitizers and a triple network. Since none of the other variables made a significant contribution towards explaining the change in the output they were carved out from the model.

Figure 6 displays a histogram of errors for the black prison admissions (SWHIRATE). The histogram reveals that

the data are not so evenly distributed. Table 10 gives details of information about network errors for white prison admissions. A perusal of the data reveals that the network performs well so far as predicting the data is concerned. Table 9 reveals that the network has an average squared error or FSE=143.14 and a PSE=221.80. This network was tuned by adjusting the CPM to obtain optimum performance. Table 13 gives details of the tuning parameters employed and the results achieved. Data for SBLKRATE were also lagged for up to 5 years. However after 2 lags the network became far too complex to be meaningful. Therefore, the researcher decided to limit the analysis up to two lags. The relevant nodes that remained in this model at lag 0 lag 1 and lag two are summarized in Table 8.

An examination of the results of all the three outputs reveals that they are all affected by the same nodes in the network. Divorce, Resident prisoner populations and homicide rates are all instrumental in affecting how the state will punish. In the next chapter the researcher will examine the results in the light of the present theoretical knowledge about punishment.

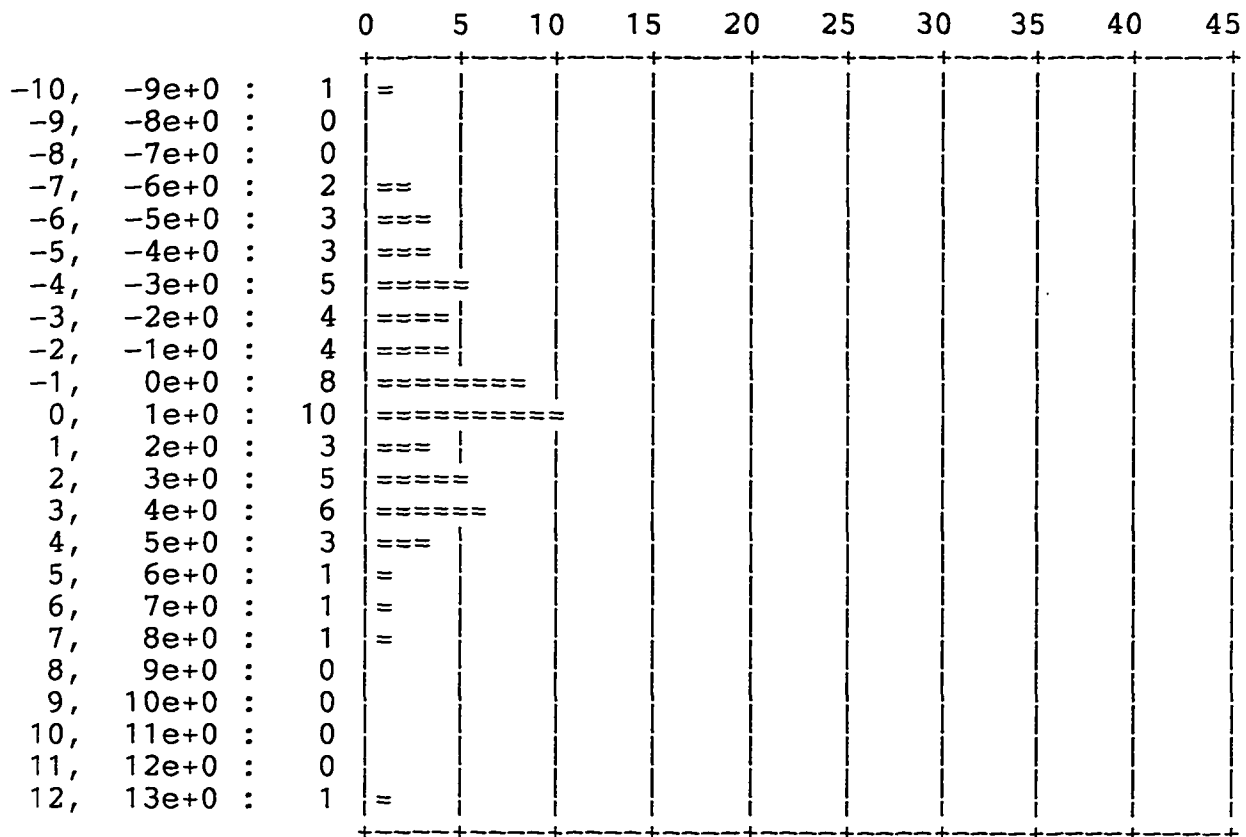
Figure 1: Network Structure for V2 (STOTRATE)



$$\begin{aligned}
 V2 = & -0.268 - 1.04X_1 + 0.639X_2 - 0.195X_3 + 0.708X_2^2 + 0.13X_3^2 - 0.147X_1X_2 - 0.814X_2X_3 + 1.19X_1X_2X_3 \\
 & + 0.124X_1^3 - 0.168X_2^3 - 0.0945X_3^3
 \end{aligned}$$

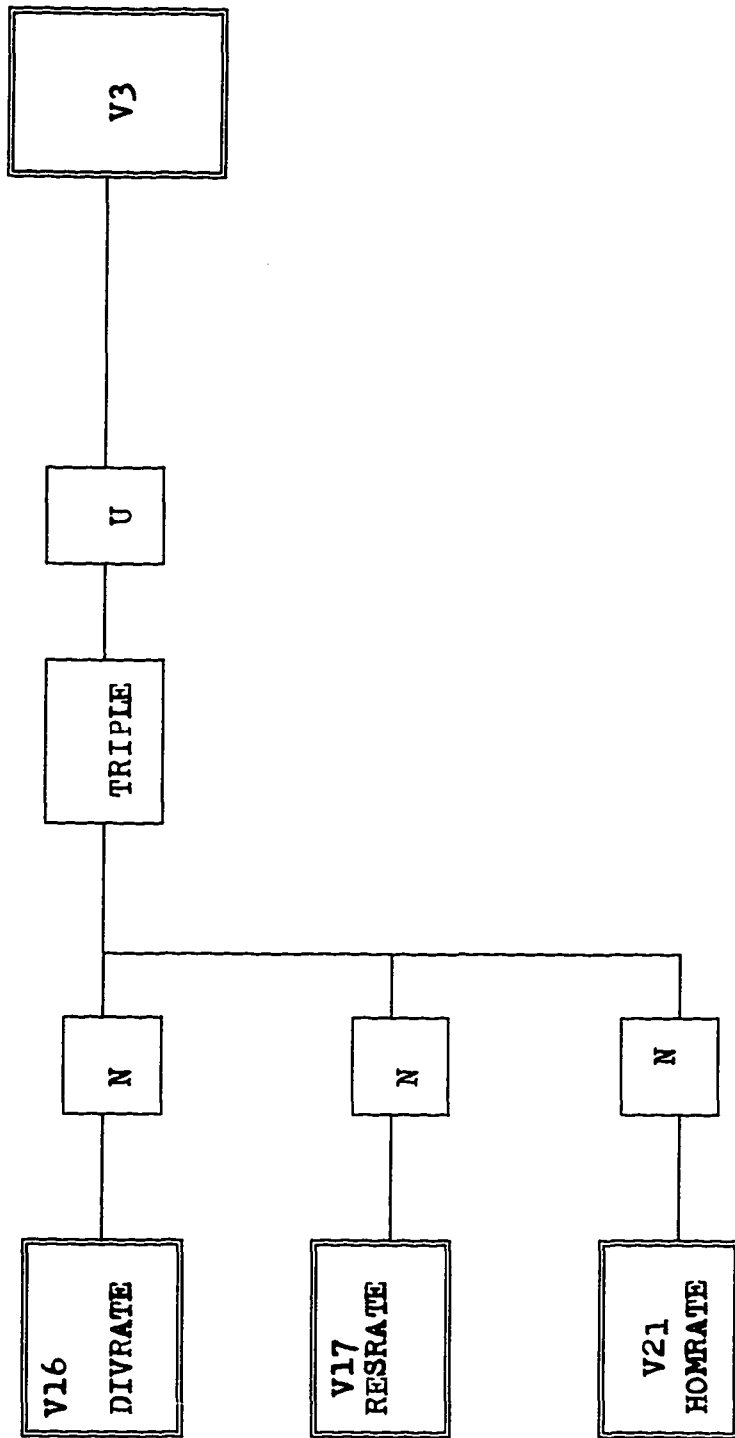
FIGURE 2:

Histogram of Errors for Output 'v2'



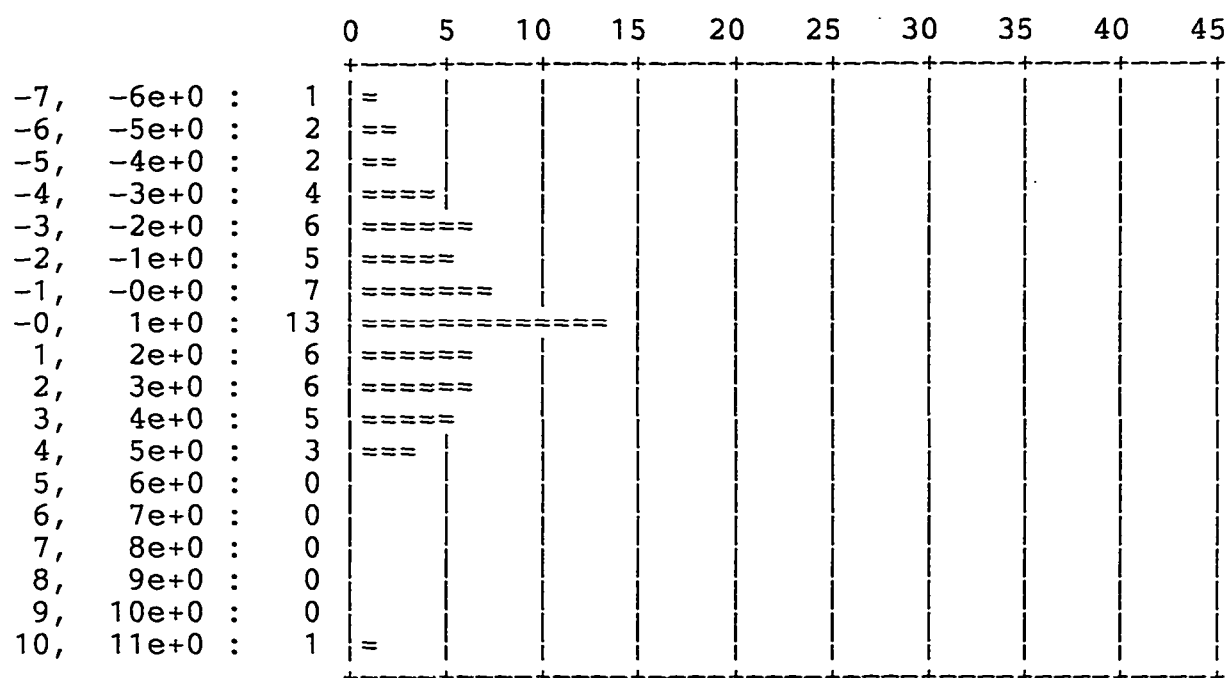
Each '=' represents one point.

Figure 3: network Structure for V3 (SWHIRATE)



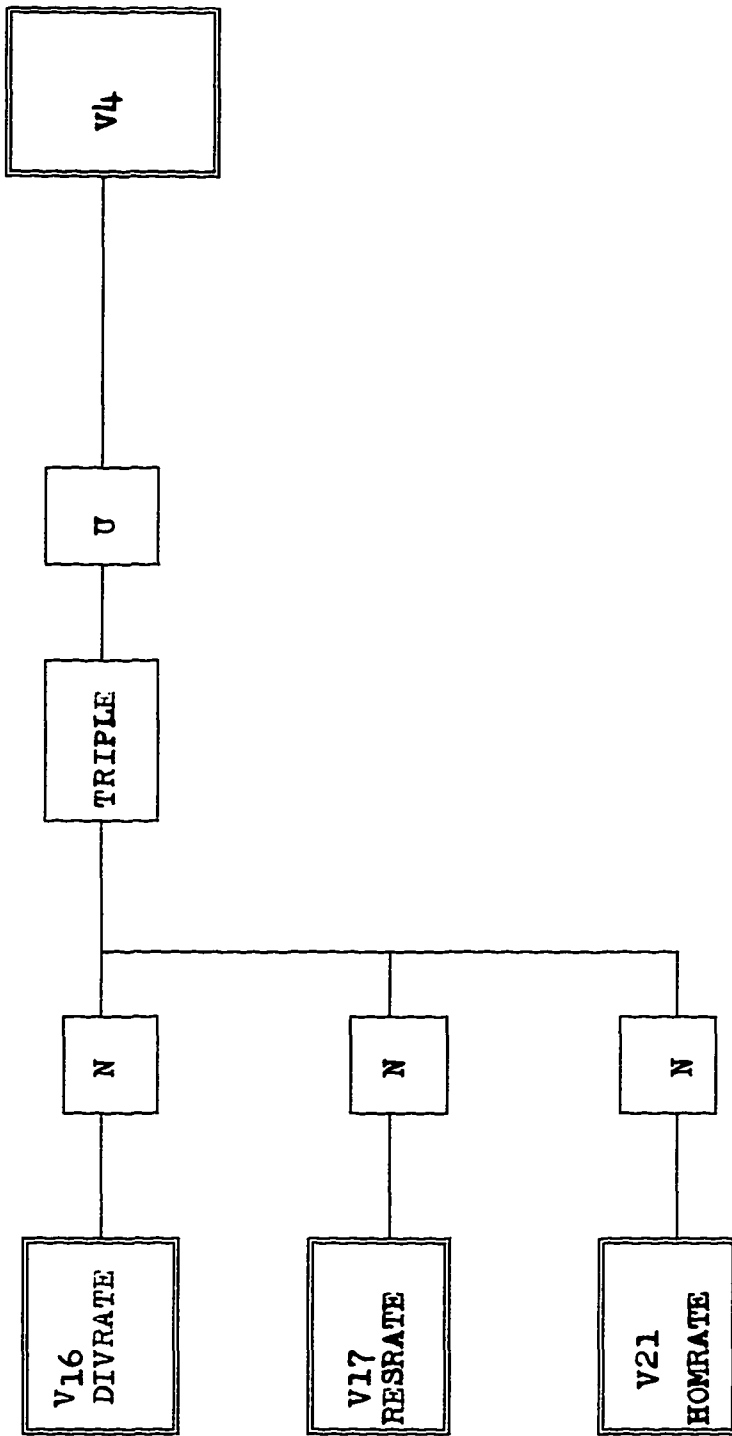
$$\begin{aligned}
 V3 = & -0.288 - 1.22X_1 + 0.644X_2 - 0.196X_1^2 + 0.709X_2^2 + 0.28X_3^2 - 0.321X_1X_2 - 0.278X_1X_3 + 1.21X_1X_2X_3 \\
 & + 0.323X_1^3 - 0.16X_2^3 - 0.177X_3^3
 \end{aligned}$$

Figure 4:
Histogram of Errors for Output 'V3':



Each '=' represents one point.

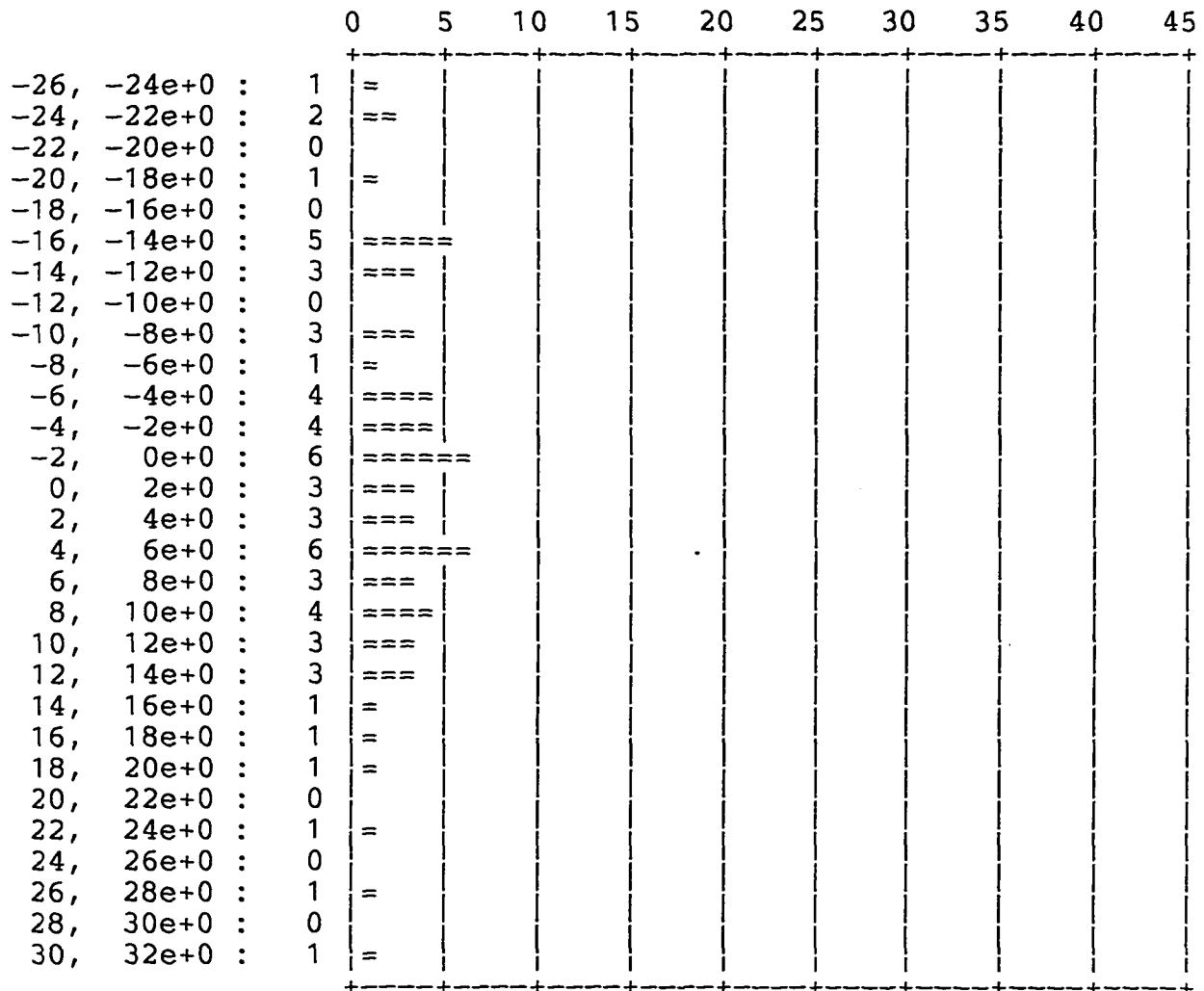
Figure 5: Network Structure for V4 (SBLKRATE)



$$V4 = -0.577X_1 + 0.74X_2 - 0.345X_3 - 0.113X_1^2 + 0.686X_2^2 + 0.172X_1X_3 - 0.56X_2X_3 + 0.948X_1X_2 - 0.179X_2^3$$

Figure 6:

Histogram of Errors for Output 'V4':



Each '=' represents one point.

Table 2:

RESULTS FOR V2 (AGGREGATE STATE ADMISSION RATES)

VAR #	LAG 0	LAG 1	LAG 2	VARIABLES
v1				Relevant year
v2				Total State Prison Admission Rate
v3				White State Admission Rate
v4				Black State Admission Rate
v5				War years
v6				Percent Unemployed
v7				Percent Black Unemployed
v8				Percent White Unemployed
v9				Surplus or Deficit
v10	.			Total Public Debt
v11	.			Business Failure Rate
v12				Suicide Rate
v13				Illegitimacy Rate
v14				Black Illegitimacy rate
v15				White Illegitimacy rate
v16		.	.	Divorce Rate
v17		.	.	Rate of Resident Prisoners
v18				Total Crime Rate
v19	.			Violent Crime Rate
v20				Property Crime Rate
v21		.	.	Homicide Rate
v22				Immigration Rate
v23				Aggregate Gini Ratio
v24				White Gini Ratio
v25				Black Gini Ratio

TABLE 3:

Summary Statistics for output 'v2'		
	evaluation	training
number of observations	61	61
average absolute error	2.8655	
error standard deviation	3.8108	
average squared error	14.284	14.284
squared error standard deviation	25.190	
maximum absolute error	12.741	
database minimum	0.0000	0.0000
database maximum	52.960	52.960
database output mean	32.391	32.391
database output standard deviation	11.115	11.115
network output mean	32.391	
network output standard deviation	10.441	
root of predicted squared error		4.9119
predicted squared error		24.126

Table 4: Network Errors for V2

obs	v2	v2_aim	error
1	0	0.063341	0.063341
2	0	12.741	12.741
3	32.94	23.648	-9.292
4	33.07	27.402	-5.6679
5	35.6	38.688	3.0879
6	40.48	45.543	5.0631
7	45.63	47.395	1.7647
8	49.08	48.248	-0.83172
9	48.26	44.767	-3.4928
10	43.27	40.246	-3.0238
11	41.78	39.555	-2.225
12	42.2	35.89	-6.3096
13	38.47	37.41	-1.0597
14	35.85	40.087	4.2369
15	38.48	38.173	-0.30678
16	36.81	35.388	-1.4218
17	35.91	33.851	-2.0591
18	30.73	31.413	0.68337
19	26.21	30.067	3.8568
20	21.42	25.418	3.9981
21	20.48	14.725	-5.7547
22	22.19	24.697	2.5068
23	30.4	31.037	0.63724
24	27.89	30.971	3.0815
25	27.05	31.443	4.3927
26	29.41	31.876	2.4657
27	30.72	32.278	1.5585
28	31.8	32.281	0.48071
29	32.9	33.377	0.47679
30	33.8	34.166	0.36614
31	34.1	34.3	0.1999
32	35.8	35.262	-0.53763
33	36	37.655	1.6548
34	37.1	36.696	-0.40376
35	37.9	40.232	2.3318
36	38	42.059	4.0585
37	38.61	41.465	2.8555
38	38.02	37.836	-0.18416
39	37.8	34.251	-3.5492
40	36.7	31.58	-5.1201
41	35.94	28.972	-6.9677
42	33.2	28.614	-4.5857
43	30.2	29.022	-1.1781
44	28.9	26.996	-1.9037
45	25.2	25.605	0.40471
46	22	24.485	2.4852
47	18.42	21.894	3.4736
48	17.8	17.671	-0.12885
49	17.5	14.291	-3.2092
50	17.1	14.026	-3.0743
51	17.44	16.964	-0.47585
52	12	19.333	7.3332
53	23.5	22.717	-0.78329
54	24.61	25.367	0.7568
55	34.71	30.257	-4.4533
56	35.47	42.376	6.9061
57	51.76	49.324	-2.4363
58	52.96	48.299	-4.6609
59	49.47	47.17	-2.2996
60	44.35	47.567	3.2173
61	50.47	50.728	0.25799
	1975.86	1975.858	0.000151

Table 5:
RESULTS FOR V3 (AGGREGATE STATE WHITE ADMISSION RATES)

VAR #	LAG 0	LAG 1	LAG 2	VARIABLES
v1				Relevant year
v2				Total State Prison Admission Rate
v3				White State Admission Rate
v4				Black State Admission Rate
v5				War years
v6				Percent Unemployed
v7				Percent Black Unemployed
v8				Percent White Unemployed
v9				Surplus or Deficit
v10	•			Total Public Debt
v11	•			Business Failure Rate
v12				Suicide Rate
v13				Illegitimacy Rate
v14				Black Illegitimacy rate
v15				White Illegitimacy rate
v16		•	•	Divorce Rate
v17		•	•	Rate of Resident Prisoners
v18				Total Crime Rate
v19	•			Violent Crime Rate
v20		•		Property Crime Rate
v21			•	Homicide Rate
v22				Immigration Rate
v23				Aggregate Gini Ratio
v24				White Gini Ratio
v25				Black Gini Ratio

TABLE 6:

Summary Statistics for output 'v3'		
	evaluation	training
number of observations	61	61
average absolute error	2.2303	
error standard deviation	2.9437	
average squared error	8.5235	8.5260
squared error standard deviation	16.229	
maximum absolute error	10.629	
database minimum	0.0000	0.0000
database maximum	41.490	41.490
database output mean	24.007	24.007
database output standard deviation	8.7490	8.7490
network output mean	24.014	
network output standard deviation	8.2197	
root of predicted squared error		4.0844
predicted squared error		16.682

Table 7: Network Errors for V3

obs	v3	v3aim	error
1	0	0	0
2	0	10.629	10.629
3	27.54	21.074	-6.4655
4	28.4	24.266	-4.1343
5	31.5	32.666	1.1662
6	34.56	39.087	4.5268
7	38.22	39.41	1.1903
8	41.49	40.546	-0.94407
9	39.08	36.496	-2.5841
10	35.75	32.398	-3.3523
11	34.04	32.5	-1.5404
12	33.85	30.42	-3.4299
13	30.62	29.282	-1.3383
14	28.67	31.871	3.2012
15	30.88	30.31	-0.5685
16	29.76	28.366	-1.3938
17	28.08	28.387	-1.6732
18	23.58	23.097	-0.48335
19	18.11	22.382	3.2719
20	15.57	18.707	3.1365
21	15.05	9.4149	-5.6351
22	16.44	18.447	2.0066
23	21.7	24.282	2.5816
24	21.1	23.619	2.5185
25	20.57	23.402	2.8323
26	22.77	23.312	0.54204
27	23.65	23.973	0.32322
28	23.85	23.998	0.14822
29	24	24.695	0.69545
30	24.1	25.086	0.98555
31	24.8	25.581	0.78144
32	25.2	26.307	1.107
33	25.8	26.856	1.0561
34	26	26.539	0.539
35	28.6	28.62	2.02
36	27.2	30.655	3.4545
37	28.18	29.831	1.6507
38	27.9	27.198	-0.70194
39	27.3	24.386	-2.9138
40	26.1	22.345	-3.7546
41	25.71	19.912	-5.798
42	24	19.728	-4.2737
43	22	20.515	-1.4848
44	20	19.136	-0.86446
45	17.8	18.082	0.28158
46	15.2	17.276	2.0759
47	11.97	15.272	3.302
48	11.75	11.999	0.24931
49	11.6	9.1884	-2.4116
50	11.55	9.1335	-2.4165
51	11.08	11.404	0.32411
52	8.53	12.713	4.1828
53	15.96	15.165	-0.79521
54	17.21	17.857	0.64655
55	22.61	20.356	-2.2538
56	24.38	29.224	4.8439
57	34.98	32.673	-2.3066
58	35.19	31.693	-3.4974
59	31.54	30.928	-0.61232
60	29.4	31.002	1.6021
61	32.79	33.136	0.3465
	1464.44	1464.8318	0.38912

Table 8:

RESULTS FOR V4 (AGGREGATE STATE BLACK ADMISSION RATES)

VAR #	LAG 0	LAG 1	LAG 2	VARIABLES DESCRIPTION
v1				Relevant year
v2				Total State Prison Admission Rate
v3				White State Admission Rate
v4				Black State Admission Rate
v5				War years
v6				Percent Unemployed
v7				Percent Black Unemployed
v8				Percent White Unemployed
v9				Surplus or Deficit
v10	.			Total Public Debt
v11	.			Business Failure Rate
v12				Suicide Rate
v13				Illegitimacy Rate
v14				Black Illegitimacy rate
v15				White Illegitimacy rate
v16		.	.	Divorce Rate
v17		.	.	Rate of Resident Prisoners
v18				Total Crime Rate
v19	.			Violent Crime Rate
v20				Property Crime Rate
v21		.	.	Homicide Rate
v22				Immigration Rate
v23				Aggregate Gini Ratio
v24				White Gini Ratio
v25				Black Gini Ratio

TABLE 9

 Summary Statistics for output 'v4'

	evaluation	training
number of observations	61	61
average absolute error	9.4432	
error standard deviation	12.055	
average squared error	143.14	143.14
squared error standard deviation	199.01	
maximum absolute error	30.852	
database minimum	0.0000	0.0000
database maximum	196.11	196.11
database output mean	101.02	101.02
database output standard deviation	36.284	36.284
network output mean	101.45	
network output standard deviation	34.217	
root of predicted squared error		14.893
predicted squared error		221.80

Table 10: Network Errors for V4

obs	v4	v4_aim	error
1	0	1.4828	1.4828
2	0	27.903	27.903
3	76.27	52.07	-24.2
4	75.22	60.772	-14.448
5	81	88.42	7.4201
6	94.96	108.23	13.271
7	114.03	110.95	-3.0833
8	119.29	115.15	-4.1429
9	112.66	111.62	-1.0432
10	111.38	104.66	-6.7215
11	112.8	103.08	-9.719
12	118.52	95.097	-23.423
13	108.17	107.7	-0.46706
14	101	120.16	19.164
15	107.92	113.99	6.0739
16	101.46	105.73	4.2701
17	107.52	102.06	-5.4647
18	95.41	100.74	5.3332
19	90.21	97.545	7.3352
20	74.24	84.961	10.721
21	69.85	54.285	-15.565
22	74.04	82.702	8.6617
23	108.8	96.017	-12.783
24	88.53	98.143	9.6131
25	84.65	100.78	16.126
26	88.87	102.14	13.271
27	93.04	101.9	8.8635
28	97.5	102.03	4.5277
29	101	105.35	4.347
30	104.8	106.94	2.1387
31	107.5	105.93	-1.5698
32	110	107.42	-2.5775
33	114.2	117.82	3.6226
34	116.1	115.47	-0.62556
35	118.6	127.33	8.7264
36	122.2	132.27	10.065
37	123.99	129.8	5.8056
38	122.8	120.41	-2.3906
39	121.6	111.75	-9.8534
40	120	105.27	-14.725
41	117.47	98.986	-18.484
42	112.2	98.444	-13.756
43	104.9	100.03	-4.875
44	95	94.416	-0.58358
45	86.2	90.068	3.8679
46	75	85.632	10.632
47	63.46	76.465	13.005
48	62.5	62.349	-0.15094
49	61.2	51.99	-9.2105
50	62.8	49.952	-12.848
51	62.68	60.406	-2.274
52	39.78	70.632	30.852
53	76.43	81.683	5.2534
54	84.24	84.909	0.66884
55	128.69	105.25	-23.442
56	123.65	145.85	22.205
57	185.48	180.29	-5.1858
58	196.11	180.88	-15.233
59	192.95	176.96	-15.992
60	161.89	177.03	15.139
61	179.61	180.44	0.83288
6162.37	6188.74	26.36128	

Table 11: TUNING DATA FOR V2 AND NETWORK PERFORMANCE

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CPM	FSE	PSE
0.80	6.29315	22.4948
0.90	14.2839	24.1264
1.00	14.2839	26.4351
1.10	14.2839	28.9869
1.20	14.2839	31.7817

Table 12: TUNING DATA FOR V3 AND NETWORK PERFORMANCE

CPM	FSE	PSE
0.80	5.52955	13.1589
0.90	3.66043	14.3328
1.00	8.52602	16.6824
1.10	5.94089	18.0877
1.20	10.7104	19.7452

Table 13: TUNING DATA FOR V4 AND NETWORK PERFORMANCE

CPM	FSE	PSE
0.80	53.059	198.089
0.90	143.139	221.805
1.00	143.14	240.26
1.10	143.139	260.652
1.20	143.139	282.989

Chapter Ten

X. CONCLUSION

The purpose of this dissertation was to evaluate various aspects of the Marxist model in so far as it helps explain and understand the phenomenon of number of persons punished. However, a closer examination of the data reveals a more complex process that cannot be solely explained by the Marxist perspective, but would suggest the need for a greater synthesis between competing perspectives.

While looking at the different groups of variables this research would summarize the results as follows:

Social Dimension: So far as the social dimension was concerned the variables that were sought to capture this aspect were SUIRATE, ILLIRATE, DIVRATE, and WAR. From this group of variables only DIVRATE (divorce rates) seemed to be relevant so far as punishment rates were concerned.

Although illegitimacy rates were theorized to be a good indicator of social breakdown, this variable was carved out of the network by AIM. One reason for this may be that this variable had missing data for years prior to 1950 and also that the data have only been analyzed up to 1986. This is one limitation of working with historical data. In years when data were not collected by the authorities is not possible to go back and reconstruct the data. Although suicide rate is an indicator of social breakdown this variable too was carved out of the network by AIM. One

reason for this could be that suicide is a variable that does not provoke as much of a moral outrage as homicide. Further, there are problems with the suicide data because there may be instances of misclassification of cases that are actually unresolved homicides. Divorce rates seem to be more reliable and sound because it is important for the legal status of persons and leads to important consequences such as alimony, re-marriage and child support among others.

Crime: The impact of crime on punishment was sought to be gauged by VCRATE, PRCRATE and HOMRATE. Of these variables only homicide rates were relevant for predicting the rate of punishment. An increase in the homicide rate generates fear and alarm within the community and calls for greater punishment within the community. At lag two this was the only variable that remained in the equation. The other crime indicators were carved out of the equation. However, it is pertinent to note that at lag one, property crime remains in the model to explain punishment for the white population. However, at lag zero, the violent crime rate was significant so far as explaining the rate of punishment is concerned.

Economic factors: The economic dimension was signified by unemployment and business failure rates. Earlier studies (Greenberg, 1977) had found that an increase in unemployment leads to an increase in punishment. This did not seem to be

borne out by the data. The business failure rate was also carved out by AIM at lag two. However, at lag zero it was included in the network for explaining punishment rates.

The variable that sought to capture the level of unemployment was also carved out of the relationship because it did not contribute towards explaining the model. It is possible that this variable has problems of validity. It is difficult to determine the real unemployment levels because there may be persons who are not accounted for in the unemployed category because they are either not currently looking for work or further they may be sub-employed or under-employed. It is very difficult to determine legal from illegal employment. Those working in professions that are either not legitimate or legal tend not to report their income. Business failure rate was carved out of the network at lag two however, at lag zero it was included in the network that accounted for the variation in the punishment rates. In the chain of causality it is possible that this factor has an impact at a later stage in affecting the level of punishment.

Social Control: The rate of resident prisoners (RESRATE) and immigration rate (IMGRATE) were sought to capture the social control measures. So far as immigration was concerned this researcher expected it to be included in the model to explain the rate of punishment. However, the network results carved out this variable. This variable also has

validity problems. Presently we do not know how many people immigrate illegally. The statistics that are available are only for legal immigration, it is theorized that had the level of illegal immigration also been factored in it would have been a variable that affects the rate of punishment. Future research could take this into account and could rectify this problem. RESRATE was included in the network for explaining punishment at lag two. In case of the resident prison population the increase in the prison population impacts the manner in which the state exercises punishment. A plausible explanation for this could be that when there is an increase in the number of persons in prison the state becomes more punitive so as to legitimize its status. The state does not want to be considered as soft on crime and therefore politicians and other moral entrepreneurs prod the state into adopting a more punitive attitude towards criminals. The volume of prisoners triggers a moral outrage from the public to punish more frequently.

Fiscal Factors: This aspect was sought to be captured by the total public debt (TOPUBT) and the surplus to deficit ratio in the budget. It was theorized that a fiscal crisis leads to a legitimation crisis and consequently to an increase in punishment (O'Connor, 1973). Both these factors were carved out of the network at lag two. However, at lag zero, total public debt was a relevant factor in explaining the rate of

punishment. It is possible that when there is an increase in public debt the state does not have money for supporting rehabilitative programs and thus tends to become more punitive. Future research may examine these factors at a local level and examine their impact on punishment rates.

Social Inequality: The Gini ratio was sought to approximate social inequality. It was theorized that with an increase in the gap between the top and bottom quintile there would be greater inequality and this lead to a legitimation crises. In order to maintain the status quo the state would resort to more punitive measures (O'Connor, 1973). This variable was also broken down by race to test for differential effects. This variable was carved out of the network and was thus not relevant for explaining the variation in the rates of punishment. The Gini ratio was only available for blacks from 1966 and for whites and the general population from 1947 onwards. It is possible that this variable was not sufficient to capture the effect of social inequality. Future research may include other variables to constitute an index to measure social inequality.

This research found that punishment is primarily a function of the divorce rates, the resident prison population rates and the homicide rates. High divorce rates are an indication of social breakdown. High divorce

rates indicate that the family system does not function as the primary unit of socialization. As a consequence, informal social control through the family has been reduced. In place of the informal social control of the family the formal mechanism of social control plays an increasingly bigger role through punishment. So far as the homicide rate is concerned it may be theorized that an increase in the number of homicides leads to alarm and moral outrage within the community. The increase in the homicide rate calls for retribution by the state and this in turn results in an increase in the rate of punishment. In other words, the data seem to support a Durkheimian model much more strongly than the Marxian model that was initially proposed. The analysis suggests a social disequilibrium model for explaining the penal response of the state. Though the model did include some other measures such as the unemployment and illegitimacy rates these variables were carved out of the network since they do not contribute towards explaining the change in the outputs.

Race Differentials:

An examination of the data did not reveal any effects for race. As tables 2, 5 and 8 reveal, the same set of nodes that operate for blacks also operate for whites. The common set of factors are divorce (V16), homicides (V21) and resident prison population (V17). The only interesting finding was that at lag one, property crime (PRCRATE) was

included in the network for explaining punishment rates for whites. However, in the case of blacks this factor was replaced by the homicide rate for explaining punishment at lag one. A plausible explanation for this finding would be that whites are more likely to commit property crimes as opposed to blacks.

Temporal Dimension:

Another perspective on this data is a temporal one. From the data it may be theorized that punishment tends to initially be affected by factors such as divorce (DIVRATE), homicide (HOMRATE) and resident population of prisoners (RESRATE) however, after a period of time (normally two years) it is affected by factors that are mainly fiscal. The fiscal-economic problems of the state seem to increase its tendency to punish. The total public debt (TOPUBT) and the business failure rate (BIZFAIL) both combine with the violent crime rate (VCRATE) in order to affect the punishment rate that is exercised by the state at a later time. Therefore it may be theorized that the causal process is much more complicated than the simple models that have been suggested in the research. The process of punishment is initially triggered off by social disequilibrium factors and it is compounded by fiscal-economic factors. This suggests a complex temporal process that can be explained by a Durkheimian perspective at the initial stage and a Marxian perspective at a later stage. Moreover it may be stated

that punishment does not operate according to the strict dictates of the rule of law but is conditioned by socio-economic factors.

So far as future research is concerned this researcher would suggest that AIM be employed to examine data at the local level or state level so as to include a richer data set.

XI. REFERENCES

Acton, H.B.(1969) The Philosophy of Punishment.
London: Macmillan.

Adamson, Christopher (1984) Toward a Marxian Penology:
Captive Criminal Populations As Economic Threats and
Resources. Social Problems. 31: 435-458.

Althusser, Louis (1971) Lenin and Philosophy. New York:
Monthly Review Press, New Left Books.

Anderson, Philip W., Kenneth J. Arrow and David Pines
(eds.) (1988) The Economy as an Evolving Complex
System. Redwood City: Addison-Wesley.

Babinec, Tony (1995) A Data analyst's Tour of Neural
Networks. SPSS Inc. New York University, January 25.

Barthes, R (1973) Mythologies. New York: Hill and Wang.

Barton, Scott (1994) Chaos, self-organization and
psychology. American Psychologist 49:5-14.

Bean, P. (1981) Punishment. Oxford: Martin Robertson.

Beattie, J.M. (1984) Violence and Society in Early Modern England, in Anthony Doob and Edward Greenspan eds. Perspectives in Criminal Law. Aurora: Canada Law Book.

Beattie, J.M. (1986) Crime and the Courts in England 1660-1800. Princeton, NJ: Princeton University Press.

Berk, Richard et al., (1981) A test case of the stability of Punishment Hypothesis: The case of California 1851-1970. American Sociological Review 46: 805-829

Blumstein, Alfred and Jacqueline Cohen (1973). A Theory of the Stability of Punishment. The Journal of Criminal Law and Criminology 64: 198-207.

Blumstein, Alfred, Jacqueline Cohen and Daniel Nagin (1977) The Dynamics of a Homeostatic Punishment Process. Journal of Criminal Law and Criminology 67: 317-334.

Blumstein, Alfred and Soumyo Moitra (1979) An analysis of the time series of the imprisonment rates in the states of the United States. Journal of Criminal Law and Criminology 70: 376-390.

Boswell, Terry (1981) State Repression and Legitimation: The Disorganization of Labor in the Arizona Copper Industry in 1917. Theoretical Review 23: 13-24, 36-37.

Box, Steven (1987) *Recession, Crime and Punishment*. Totowa, N.J. Barnes and Noble.

Box, Steven and Chris Hale (1982) Economic crises and the rising prison population in England and Wales. Crime and Social Justice 17:20-35.

Brewer, John and John Styles (1980) eds. *An Ungovernable People: The English and their Law in the Seventeenth and Eighteenth Centuries*. New Brunswick, NJ: Rutgers University Press.

Brothers, Hardin (1995) Fuzzy Logic. *Micro Computer Journal* 1: 36-40.

Cain, Maureen and Alan Hunt (1979) eds. *Marx and Engels on Law*. London: Academic Press.

Carnoy, Martin (1984) *The State and Political Theory*. Princeton, N.J.: Princeton University Press.

Carroll, Leo and Mary Beth Doubet (1983) U.S. Social Structure and Imprisonment. Criminology 21: 449-456.

Caudill, Maureen (1993) Neural Networks Primer. Ann Arbor: Miller and Freeman.

Chiricos, Theodore and Miriam Delone (1992) Labor surplus and Punishment: A Review and Assessment of Theory and Evidence. Paper presented at the State of the Art Conference on Inequality, crime and Social Control, Athens Georgia.

Cohen, Stanley (1985) Visions of Social Control: Crime, Punishment and Classification. New York: Polity Press.

Cook, P.J. (1980) "Research in Criminal Deterrence: Laying the Groundwork for the Second Decade." In Crime and Justice: An Annual Review of Research, vol.2, edited by Norval Morris and Michael Tonry. Chicago: University of Chicago Press.

de Smith, Stanley A. (1973) Constitutional and Administrative Law. Baltimore, MD: Penguin Education.

Dicey, A.V. (1985) Introduction to the Study of the Law of the Constitution (1885). Ed. E.C.S. Wade. Reprint.

Baskingstoke: Macmillan.

Durkheim, Emile (1964a) *The Division of Labor in Society*. New York: Free Press.

Durkheim, Emile (1964b) *The Rules of Sociological Method*. New York: Free Press.

Durkheim, Emile (1973) *Moral Education*. New York: Free Press.

Durkheim, Emile (1983) *Two laws of Penal Evolution*. orig. appeared in *Annee sociologique*, 4(1902) 65-95. Repr. as ch. 4, 'The Evolution of Punishment', in S. Lukes and A. Scull (eds.), *Durkheim and the Law* (Oxford, 1983).

Ericson, Richard Victor and Patricia M. Baranek (1982) *The Ordering of Justice*. Toronto: University of Toronto Press.

Erikson, Kai T. (1966) *Wayward Puritan. A Study in the Sociology of Deviance*. New York: John Wiley & sons.

Fann, K.T. (1970) *Pierce's theory of abduction*. The Hague, Holland: Martinus Nijhoff.

Fienberg, J., and H. Gross (1975) *Philosophy of Law*.
Enrico, Calif.: Dickenson.

Forrest, Stephanie (1993) *Genetic algorithms:
Principles of natural selection applied to computation*.
Science, 13 August: 872-878.

Foucault, Michel (1975) *Discipline and Punish*. New
York: Pantheon Books.

Fuller, Lon (1971) *The Morality of Law*. New Haven,
Conn.: Yale University Press.

Gardner, Gil (1987) *The emergence of the New York State
Prison System: A critique of the Rusche-Kirchheimer
Model*. *Crime and Social Justice* 29:-88-109.

Garland, David (1991) *Punishment and Modern Society*.
Chicago: University of Chicago press.

Garland, David and P. Young (1983) *The Power to Punish:
Contemporary Penality and Social Analysis*. Atlantic
Highlands, NJ: Humanities Press.

Gleick, James (1987) *Chaos: Making a New Science*. New
York: Penguin.

Gold, David, A. , Clarence Lo, Erik-Olin Wright (1975) Recent Developments in Marxist Theories of the Capitalist State. *Monthly Review* 27: 36-51.

Gramsci, A. (1971) The Intellectuals and the Modern Prison, in *Selections from the Prison Notebooks*, edited by Q. Hoare and G.N. Smith. New York: International Publishers.

Greenberg, David (1977) The dynamics of oscillatory punishment processes. *Journal of Criminal Law and Criminology* 68: 643-651.

Hale, Chris (1989) Economy, punishment and imprisonment. *Contemporary Crises* 13:327-349.

Hart, Herbert Lionel Adolphus (1964) *The Concept of Law*. Oxford: Clarendon Press.

Hart, Herbert Lionel Adolphus (1968) *Punishment and Responsibility*. Oxford: Oxford University Press.

Hastings, Alan, Carole L. HOm, Stephen Ellner, Peter Turchin, and H. Charles J. Godfray (1993) Chaos is ecology: Is mother nature a strange attractor? *Annual Review of Ecology and Systematics* 24: 1-33.

Hay, Douglas (1975) *Property, Authority, and the Criminal Law in Albion's Fatal Tree*. New York: Pantheon.

Hewart, Lord Gordon (1929) *New Despotism*. New York: Cosmopolitan Book Corporation.

Hobbes, Thomas (1950) *Leviathan*. New York: Dutton.

Honderich, T. (1976) *Punishment: The Supposed Justifications*. Harmondsworth: Penguin.

Hirst, P.Q. (1986) *Law, Socialism and Democracy*. London: Allen and Unwin.

Ignatieff, M. (1978) *A Just Measure of Pain. The Penitentiary in the Industrial Revolution*. New York: Pantheon Books.

Innes, Joanna (1987) *Prisons for the Poor: English Bridewells, 1550-1800* in F. Snyder and D. Hay (eds.), *Labor, Law and Crime: An Historical Perspective*. London: Tavistock.

Inverarity, James and Daniel McCarthy (1988) *Punishment and Social Structure Revisited: Unemployment and*

Imprisonment in the United States 1948-1984. The Sociological Quarterly 29: 263-279.

Jacobs, J.B. (1983) *New Perspectives on Prisons and Imprisonment*. Ithaca, NY: Cornell University Press.

Jankovic, Ivan (1977) Labor market and Imprisonment. Crime and Social Justice 8:17-31.

Joubert, Paul E., J. Steven Picou and W. Alex McIntosh (1981) U.S. Social Structure, Crime, and Imprisonment. Criminology 19:3. pp 344-359.

King, P.J.R (1984) Decision-Makers and Decision-Making in the English Criminal Law, 1750-1800. *Historical Journal*, 27: 25-58.

King, Desmond and Ted R. Gurr (1988) *The State and Fiscal Crisis in Advanced Industrial Democracies*. International Journal of Urban and Regional Research 12: 87-106

Kurian, George Thomas (1994) *Datapedia of the United States 1790-2000. America year by year*. Lanham, MD: Bernan Press.

Langbein, John (1983) Albion's Fatal Flaws. Past and Present, 98: 96-120.

Langbein, John (1976) Torture and the Law of Proof. Chicago: University of Chicago Press.

LaPalombara, Joseph (1974) Politics within Nations. Englewood Cliffs, NJ: Prentice Hall.

Locke, John (1952) Second Treatise of Government. Ed. Thomas P. Peardon. New York: Liberal Arts.

Loxley, John (1982) Fiscal Sociology and the Fiscal Crisis of the State -- A Review of Goldscheid and O'Connor. Contemporary Crises 6 285-301.

Lynch, Michael J. (1988) The extraction of surplus value, crime and punishment: A preliminary examination. Contemporary Crises 13: 371-404.

Malinowski, Bronislaw (1966) Crime and Custom in Savage Society. Totowa, NJ: . Orig. pub. London, 1926.

Martinson, R. (1974) "What Works? -- Questions and Answers about Prison Reform." Public Interest 35: 22-54.

Mauer, Marc (1991) *American Behind Bars: A Comparison of International Rates of Incarceration*. Washington, DC: The Sentencing Project.

Melossi, Dario (1989) An Introduction: Fifty years later, Punishment and Social Structure in comparative analysis. Contemporary Crises 13:311-326.

Melossi, Dario (1985a) Punishment and Social Action: Changing vocabularies of punitive motive within a political business cycle. Current Perspectives in Social Theory 6:169-197.

Melossi, D. and M. Pavarini (1981) *The Prison and the Factory: The Origins of the Penitentiary System*. Totowa, N.J.: Barnes and Noble Books.

Melossi, D. (1985b) *Punishment and Social Action. Current Perspectives in Social Theory*. Greenwich CT: JAI Press.

Michalowski, Raymond J. and Michael A. Pearson (1990) Punishment and social structure at the state level: A cross-sectional comparison of 1970 and 1980. Journal of Research in Crime and Delinquency 27:52-78.

Miller, G.A. (1956) The magic number seven, plus or minus two: some limits on our capacity for processing information. *The Psychological Review* 63: 81-97.

Myers, Samuel Jr. and William Sabol (1987) Unemployment and Racial disparities in punishment. *Contemporary Policy Issues* 5: 46-58.

Nagin, Daniel (1978) Crime Rates, Sanction levels, and Constraints on Prison Population. *Law and Society Review* 12:341-66.

O'Connor, James (1973) *The Fiscal Crisis of the State*. New York: St. Martin's Press.

O'Connor, James (1981) *The Fiscal Crisis of the State Revisited: A Look at Economic Crisis and Reagan's Budget Policy*. *Kapitalistate* 9: 41-61.

Pashukhanis, E.B. (1978) *Law and Marxism: A General Theory*. ed. C. Arthur. London. orig. pub. Russian Ed. 1924.

Poulantzas, Nicos (1973) *Political Power and Social Classes*. London: New Left Books.

Poulantzas, Nicos (1979) *Fascism and Dictatorship*.
London: Verso.

Race of Prisoners Admitted to state and federal
institutions in the United States, 1926-1986. Bureau of
Justice Statistics, U.S. Department of Justice, and
Inter-university Consortium for Political and Social
Research.

Radzinowicz, Leon (1948) *A History of English Criminal
Law and its Administration from 1750*. New York:
Macmillan Co.

Radzinowicz, Leon and Marvin Wolfgang (1971) "The
Criminal in Confinement." In *Crime and Justice*, vol. 3,
edited by L. Radzinowicz and M. Wolfgang. New York:
Basic.

Rao, Valluru and Hayagriva Rao (1993) *C++ Neural
Networks and Fuzzy Logic*. New York: MIS press.

Riley, Patrick (1993) *The State in Grolier's Electronic
Encyclopaedia*. (sixth edition). CD-ROM.

Rossomo, D. Kim (1992) *Chaos theory and Criminology*.
Paper presented at meetings of the American Society of

Criminology, New Orleans.

Rothman, David J. (1971) *The Discovery of the Asylum: Social Order and Disorder in the New Republic*. Boston: Little Brown .

Rusche, Georg and Otto Kirchheimer (1939) *Punishment and Social Structure*. New York: University of Columbia Press.

Rusche, Georg (1980) *Labor Market and Penal Sanction: Thoughts on the Sociology of Punishment*. (orig. pub. in 1933) in T. Platt and P. Takagi (eds.) *Punishment and Penal Discipline*. Berkeley, Ca: Crime and Social Justice Associates.

Sabol, William J. (1989) *The Dynamics of Unemployment and Imprisonment in England and Wales, 1946-1985*. Journal of Quantitative Criminology 5:-147-168.

Sennett, Richard and Jonathan Cobb (1972) *The Hidden Injuries of Class*. New York: Knopf.

Spierenburg, Pieter (1984) *The Sociogenesis of Confinement and its Development in Early Modern Europe, in The Emergence of Carceral Institutions: Prisons,*

Galleys and Lunatic Asylums, 1550-1900. Rotterdam: .

Spitzer, Steven (1980) "Left-wing" criminology: An infantile disorder? Pp. 169-190 in James Inciardi (ed.), *Radical Criminology: The Coming Crises*. Beverly Hills, CA: Sage.

Spitzer, Steven (1975) *Punishment and Social Organization. A Study of Durkheim's Theory of Evolution*. *Law and Society Review*, 9: 613-637.

Stone, Lawrence (1987) *The Past and the Present Revisited*. London, New York: Routledge and Kegan Paul.

Unger, R.M. (1976) *Law in Modern Society*. New York: Free Press.

Thompson, Edward Palmer (1975) *Whigs and Hunters*. New York: Pantheon Books.

Thompson, Edward Palmer (1967) *Time, Work Discipline and Industrial Capitalism*. *Past and Present*, 38: 56-97.

Vila, Bryan (1994) *A General Paradigm for understanding Criminal Behavior: Extending Evolutionary Ecological Theory*. *Criminology* 3: 311-359.

Wade, Emlyn Capel (1959) Introduction to the Study of the Law of the Constitution. New York: St. Martin's Press.

Walker, N. (1969) Sentencing in a Rational Society. London: Allen Lane.

Wallace, D (1980) The Political Economy of incarceration trends in late US capitalism: 1971-77. Insurgent Sociologist 9: 59-65.

Weldon, Thomas Dewar (1953) Vocabulary of Politics. New York: Johnson Reprint.

Wells, L. Edward and Kirk Hanson (1992) Chaos as an emerging theme in criminological theory. Paper presented at meetings of the American Society of Criminology, New Orleans.

Wilson, Francis Graham (1936) Elements of Modern Politics; An introduction to Political Science. New York, London: McGraw Hill Book Company.

Wilson, James Q. (1975) Thinking About Crime. New York: Basic.

User's Manual. AIM for DOS, version 1.2. AbTech Corporation, Charlottesville, Virginia.

Zadeh, Lofti (1973) Outline of a New Approach to the Analysis of Complex Systems and decision processes. IEEE Transactions on Systems Man and Cybernetics 3: 28-44.