

**The System-Wide Effects of Capital
Punishment on the American Criminal
Justice System: The Use of Computer
Modeling in Death Penalty Research**

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Abstract

Issues pertaining to the use of the death penalty are many and varied. Far too often debate regarding the use of the death penalty centers on emotional arguments regarding the moral questions generated by the use of the death penalty. This paper strives to examine issues surrounding capital punishment utilizing a systems analysis approach. Two models were created utilizing the PowerSim modeling program in an effort to explore the brutalizing effect posited by Cochran and Chamlin in their work on the reintroduction of the death penalty in the state of Oklahoma and the deterrence argument presented by those in favor of capital punishment. While neither PowerSim models provides a definitive answer with regards to the issues inherent in the larger capital punishment debate they do shed some additional light on an otherwise highly complicated social issue.

About the Author

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The System-Wide Effects of Capital Punishment on the American Criminal Justice System: The Use of Computer Modeling in Death Penalty Research

Introduction

Issues pertaining to capital punishment continue to spark heated debate in political and academic circles worldwide. In the United States the questions surrounding the death penalty are many and varied. Some maintain that in a free, democratic republic, capital punishment is an unnecessary form of cruel and unusual punishment in violation of our constitution. Others claim that capital punishment serves the primary purpose of deterring crime and punishing society's most violent offenders.

Since the Supreme Court's ruling in *Furman v. Georgia* (1972) 38 states have reinstated the death penalty and 32 states have carried out executions (United States Department of Justice, 2005). From January 1, 1977 to December 31, 2004, 944 inmates were executed by 32 states and the Federal Bureau of Prisons (Bureau of Justice Statistics, 2005). As the media hoopla surrounding capital punishment decisions grows the need for quality research has never been more important. However, despite this need, death penalty research continues to be perplexing, giving contradictory, even confusing results. Conflicting results emerging from research into capital punishment seem to stem primarily from the extreme social reactions and implications brought about by executions.

The Supreme Court, as the highest court of the land, is responsible for policy decision involving discrimination, appeals, and due process. The Supreme Court has been called upon to hear appeals of capital trials often in the last few decades. Although it is not relevant to detail every capital case tried by the Court it is necessary to highlight a few of the most prominent policy relevant cases of the last few decades.

In 1972 in the decision of *Furman v. Georgia* the Supreme Court struck down on Eighth Amendment grounds state and federal capital punishment laws permitting wide discretion in the application of the death penalty (Bureau of Justice Statistics, 1984). The Court then ruled that the arbitrary nature of the application of the death penalty stood in direct violation of the Eighth Amendment prohibition against cruel and unusual punishment. This single ruling signaled the temporary end to the death penalty so as to afford states the time needed to redraft statutes to provide procedural protection against arbitrary use of capital punishment.

This ruling resulted in one of two possible outcomes for states. One potential outcome was the rendering of a “mandatory” death sentence for specified crimes. Another possibility was “guided discretion” statutes which provided explicit guidelines to be followed during sentencing (Clay, 1990). Since the *Furman* verdict, legislatures of 35 states have enacted new statutes authorizing the use of capital sentences for certain crimes.

In a series of related decisions, the Court then proceeded to clarify the guidelines set forth in *Furman*. In *Woodson v. North Carolina* (1976) and *Roberts v. Louisiana* (1976), the Court overturned the state statutes requiring mandatory death sentences for specified crimes. In *Woodson v. North Carolina*, the Court decided that North Carolina’s mandatory death sentence for first degree murder violated both the Eighth and Fourteenth Amendments (Clay, 1990). In *Roberts v. Louisiana*, the Court also held that statutes mandating the death sentence for first degree murder were unconstitutional. It was stated that, “Narrowly drawn categories of first-degree murder under Louisiana law which require mandatory imposition of the death penalty afford no meaningful opportunity for consideration of mitigating factors presented by the circumstances of the particular crime or by the attributes of the individual offender and thus fail to meet constitutional requirements” (*Roberts v. Louisiana*, 1976, p. 633).

In April, 1987, the Court dealt with the question of whether the capital sentencing process in Georgia was being administered in a racially biased manner in the trial of *McCleskey v. Kemp* (Bureau of Justice Statistics, 1987). The issues surrounding *McCleskey v. Kemp* centered on violations of the Eighth and Fourteenth Amendments.

The petitioning attorney utilized statistical data of capital sentences imposed in the state to demonstrate that black defendants accused of killing whites had the highest probability of receiving the death sentence. Eventually the Court rejected the claim stating that “there was no evidence of racial discrimination by decision makers in the petitioners’ case; there was no evidence that the legislature of Georgia adopted or maintained capital punishment for racially discriminatory purposes, and; there was no merit to the argument that the sentence was disproportionate, arbitrary, or capriciously imposed” (Bureau of Justice Statistics, 1987, p. 2).

Due to the often frustrating world of capital punishment research it was posited that perhaps a different perspective might be helpful. It is hypothesized that if a computer simulation model depicting the entire criminal justice system were created with capital punishment as one variable existing within the larger system a better picture might emerge offering some insight into this complex, multifaceted problem. Therefore, the modeling program PowerSim was utilized to design a model encompassing all of the many elements of the criminal justice system. Due to the fact that capital punishment elicits such strong societal and political reactions additional elements such as political pressure, public opinion, and public outrage were included in the models. These are variables rarely included in crime analysis.

Deterrence

At the center of the capital punishment argument sits the concept of deterrence. *Actus reus*, Latin for “criminal act,” represents the very heart of the study of criminal justice (Levine,

Musheno, and Palumbo, 1986; Inciardi, 2005). Hardly a facet of human life exists that is not tempered by the reign of legal constraint. A belief in the deterrent effect of formal sanctions has been a constant of crime and justice since the time of Socrates. The theory of deterrence states that the threat of punishment or actions of the state can cause a change of heart in would-be offenders by instilling a fear of potential unpleasantness of specific threatened consequences (Pogarsky, Piquero, and Paternoster, 2004; Gibbs, 1975; Andenaes, 1979; Zimring and Hawkins, 1973). The threat of legal sanctions decreases any anticipated utility of criminal offending, therefore making individuals less likely to engage in criminal behavior.

Beccaria wrote in 1764 in his seminal essay *On Crimes and Punishment* that “the political intent of punishments was to instill fear in other men” (Beccaria, 1764). Additionally, Andenaes referred to this notion of deterrence as “mere deterrence” and “the mere frightening or deterrent effect of punishment” (Andenaes, 1966, p. 950). Bentham maintained that, “the profit of the crime is the force which urges a man to delinquency: The pain of the punishment is the force employed to restrain him from it. If the first of these forces be the greater the crime will be committed; if the second, the crime will not be committed” (Bentham, 1843, p. 399).

No essay on the issue of capital punishment would be complete without a review of pertinent research on deterrence theory. It is important to understand not only the traditional conceptualization underlying the theory of deterrence but also the more contemporary reconceptualization of deterrence by Stafford and Warr (1993). Due to the fact that Stafford and Warr’s reconceptualization of deterrence builds on established theory it is with traditional research this discussion will begin.

Deterrence can be broken down into two basic categories: Specific deterrence and general deterrence. General deterrence has been defined as the “imposition of sanctions on one

person [in order to] demonstrate to the rest of the public the expected costs of a criminal act, and thereby discourage criminal behavior in the general population” (Nagan, 1978, p. 96). Therefore, the deterrence doctrine postulates an inverse relationship between the perceived certainty and severity of punishment and the involvement in subsequent criminal activity. The greater the perceived certainty and severity of punishment, the less likely a criminal act will occur.

Specific deterrence pertains to the effects of legal punishment on those who have already committed a criminal offense (Stafford and Warr, 1993). Andenaes (1966) stated that if an individual is “deterred by the actual experience of punishment, we speak of special (specific) deterrence” (p. 78). Thus, for the punished offender it is direct experience with formal sanctions that is the ultimate deterrent.

The earliest of the perceptual deterrence literature relied on cross-sectional data and provided evidence that the perceived certainty of punishment, but not perceived severity of such punishment, deterred criminal involvement (Paternoster, 1987). The early cross-sectional studies have gradually been replaced by studies utilizing panel data. Panel studies have largely found no evidence of the deterrent effects of perceived severity of punishment (Nagan and Paternoster, 1991). Some observers have concluded that perceived certainty of formal legal sanctions either have no influence or, at best, only a modest influence on delinquency and criminality. On the contrary, deterrence research continues to demonstrate the empirical regularity that the deterrent effect of the certainty of punishment exceeds that of the severity of punishment (Pogarsky, 2002; Klepper and Nagin, 1989; Paternoster, 1987; Williams and Hawkins, 1986).

Williams and Hawkins (1986) have speculated that the formal sanctioning process is augmented by the possibility of informal sanctions. They argue that community knowledge of

an individual's involvement in a criminal act is a necessary precondition for the operation of the informal sanctioning process. They maintain that the deterrent effects arising from the fear of arrest should be included in a full accounting of the deterrent effects of formal sanctions. Zimring and Hawkins (1973) have stated: "We must recognize that there are other aspects of the administration of criminal justice which, while forming no part of the formally prescribed punishment, must nevertheless be regarded as part of the threatened consequences. It would be illogical to restrict the definition of threatened consequences in such a way as to exclude such aspects of the enforcement process which are integral parts of the system and may often be as significant as the formally prescribed punishments themselves" (p. 174).

Williams and Hawkins identified three varieties of informal sanction costs that provide supplement to formal sanctions: Commitment costs, attachment costs, and the stigma of arrest (1986). Commitment costs refer to a person's perception that "past accomplishments" may be jeopardized by an arrest. Such costs arise from an individual's stake in conformity (Becker, 1960). Attachment costs include the loss of valued friendships with significant others resulting from an arrest. Finally, the stigma of arrest refers to the "reputational damage" of an arrest. The extralegal consequences of an arrest have been observed to be at least as great a deterrent to illicit behavior as formal legal sanctions (Nagin and Pogarsky, 2001; Nagin, 1998; Williams and Hawkins, 1986).

Williams and Hawkins demonstrate how their broadened conception of the preventive effects of sanction threats would operate for an individual:

We would predict that general deterrence is more likely to operate when a person perceives a high probability of arrest and; (1) when others disapprove of or generally discredit the potential offender, thus creating a reputational stigma of arrest; (2) when the arrest is perceived as possibly jeopardizing relationships with significant others or; (3) when the arrest is seen as possibly destroying past accomplishments and/or future opportunities. If these perceived costs are salient to the individual, deterrence may be

achieved even though the person perceives the certainty of arrest as low. If the perceived costs of arrest are minimal, however, we would expect the perceived certainty of arrest to have a weak influence on the deterrence of crime (Williams and Hawkins, 1986: 556-566).

Therefore, the effect of perceived certainty of arrest depends on the level of informal sanction costs.

Reconceptualization of Deterrence

Specific Deterrence

Whereas general deterrence refers to the effect of legal punishment on the general public, or potential offenders, specific deterrence pertains to the effects of legal sanctions on those who have already suffered legal punishment. As stated previously Andenaes (1968) asserted that if individuals are deterred by the actual experience of punishment that was the essence of special or specific deterrence.

For members of the general public it is indirect experience with punishment that deters, whereas for the punished offender it is often direct personal experience with such punishment that deters (Meier and Johnson, 1977). Therefore, members of the general public are deterred by observation or vicarious knowledge of the punishment of others while punished offenders rely simply on their own experiences of legal sanctions for the deterrent effects.

Stafford and Warr (1993) have noted that experience with avoiding punishment is likely to affect perceptions of the certainty and severity of punishment. The perceptions of certainty should be more strongly affected by successful avoidance of punishment due to the fact that such avoidance provides an individual with very little solid information concerning the legal consequences of apprehension (Paternoster, 1987). Stafford and Warr have noted that this conceptualization underscores the fundamental principle that no criminal act is without its consequences. Stafford and Warr (1993) also make the point that what are conveniently

accepted as principles of general deterrence are not necessarily limited to persons possessing an intimate experience with legal sanctions.

The conventional distinction between general and specific deterrence rests more with the fundamental nature of direct experience with legal sanctions than with the mere presence of such sanctions. Research endeavors typically focus on punished offenders and examine the frequency of recidivism for evidence of deterrence. Investigators typically assume that an offender's direct experience with legal sanctions is the only operative variable as far as predicting future behavior is concerned. This assumption virtually ignores an offender's history of punishment avoidance and overlooks the possibility that an individual can sustain a legal sanction while also possessing knowledge of the experience of others.

Stafford and Warr (1993) present several advantages to this reconceptualization of deterrence theory currently in use by scholars and researchers. First, the reconceptualization recognizes the possibility that both general and specific deterrence can operate for any individual in any population. Second, the act of punishment avoidance is analytically distinct from the experience of suffering a punishment.

One central thesis in this reconceptualization is the idea of observational or vicarious learning. Bandura (1977) stated that learning "results from the positive and negative effects that actions produce. When people deal with everyday events, some of their responses prove successful, while others have no effects or result in punishing outcomes. Through this process of differential reinforcement, successful forms of behavior are eventually selected and ineffectual ones are discarded" (p. 17).

As for observational or vicarious learning, Bandura notes that, "people can profit from the successes and mistakes of others as well as from their own experiences. In everyday

situations numerous opportunities exist to observe the actions of others and the occasions on which they are rewarded, ignored, or punished...Observed outcomes can alter behavior in their own right in much the same way as directly experienced consequences” (p. 117).

The basic premise of the reconceptualization proposed by Stafford and Warr (1993) is that the rate of crime in any population will be a function of both general and specific deterrence. Among those persons with limited experience with punishment or punishment avoidance the rate of crime is likely to be a function of general deterrence. Indirect experience with punishment and punishment avoidance is the operative condition under which that population is acting. Among persons who have been punished often or have avoided punishment repeatedly their criminal offending should be a function of specific deterrence. Direct experience with punishment and punishment avoidance is the operative condition under which this population is acting. Stafford and Warr’s implication is that individuals should be viewed as falling along a continuum delineated by general deterrence on one end and specific deterrence on the other.

The purpose of this research is to shed some additional light on the many, varied issues surrounding capital punishment policy. Both proponents as well as opponents of capital punishment have presented good arguments to support their contentions. The two models presented in this project demonstrate how small alterations in capital punishment policy can have a system-wide affect for criminal justice practitioners. Both models utilize the same data. However, by manipulating small “policy” changes within the models it is possible to obtain very different results. One model is found to be in support of the brutalization hypothesis predicted by Cochran, Chamlin, and Seth (1994) and by many opponents of capital punishment. The other model is found to be in support of the basic deterrent doctrine put forth by many capital punishment proponents. The models are intended to demonstrate how small changes in capital

punishment policy can have wide, sweeping effects on the entire criminal justice system. In addition, the models also serve to demonstrate exactly how complex the effects of capital punishment are on society and the criminal justice system.

Systems Analysis

While there is much debate centering on the deterrent effects of the death penalty, little has been written concerning implications for the entire criminal justice system. Policies aimed specifically at the capital punishment issue impact the entire justice system. Police agencies, courts, legislative bodies, and corrections are each affected in various ways by small policy changes in capital punishment legislation.

Deterrence v. Brutalization

Cochran, et al. (1994) conducted research into the implications of the reinstatement of the death penalty in the state of Oklahoma. Namely, the study examined the deterrent effects of the reinstated death sentence, along with any possible brutalizing effects, with specific reference to the crime of criminal homicide. Researchers discovered no evidence of a deterrent effect or a brutalization effect for criminal homicides. The predicted deterrent effects of executions on the level of felony murders were also not observed. However, the researchers did find evidence of a brutalizing effect on the level of stranger homicides.

Often in death penalty studies researchers find little to no evidence of a deterrent effect of such punishment. However, there have been those studies that have reported evidence of a brutalization effect (Bailey, 1983; Bowers and Pierce, 1980; Cochran, Chamlin, and Seth, 1994; Decker and Kohfeld, 1990; King, 1978; Thomson, 1997). There have also been those projects that have reported a deterrent effect for capital punishment (Ehrlich, 1975, 1977; Layson, 1985; Philips, 1980; Stack, 1987, 1990).

As reported by Cochran and Chamlin (2000) if criminal homicides are properly disaggregated the effects of deterrence are clarified somewhat. Executions are thought to deter some forms of criminal homicides while simultaneously increasing other forms. In traditional research into the effects of capital punishment these effects serve to cancel one another thus resulting in no net deterrent effects. However, if criminal homicides are disaggregated into more homogeneous forms the null effect begins to diminish (Cochran et al., 1994).

It has been hypothesized that felony murder, the one form of homicide most likely to result in a sentence of death, is one form of criminal homicide most susceptible to the effects of deterrence (Bureau of Justice Statistics, 2003; Cochran et al., 1994; Peterson and Bailey, 1991). According to this argument an offender, or potential offender, weighs the costs and benefits associated with a particular course of action and chooses which course to take based on a rational cost/benefit analysis. The choice is completely voluntary and rationally chosen from a variety of alternative decisions. In a felony-murder scenario it is believed that the offender enters into the situation with an understanding that lethal force might be necessitated by their criminal actions. Therefore, some level of rationality can be assumed on the part of the offender (Peterson and Bailey, 1991). As a result such murders can be potentially deterred by the threat of capital punishment. Whatever potential for deterrence exists should be manifest only for executions that receive a significant amount of media attention (Bailey, 1990; Philips, 1980; Stack, 1987, 1990). If executions failed to be highly publicized any “potentially deterrable offenders would be uninformed about the objective threat of capital punishment” (Cochran et al., 1994: 109).

Proponents of the brutalization effect maintain that executions actually serve to increase homicide rates due to a “bestly example” presented by the execution itself (Cochran et al., 1994; Beccaria, 1764: 50). According to this philosophy executions demonstrate a devaluing of

human life and “demonstrate that it is correct and appropriate to kill those who have gravely offended us” (Bowers and Pierce, 1980: 456). Therefore, in contrast to the deterrent position those adhering to the brutalization hypothesis maintain that publicized executions simply illustrate the legitimacy of lethal violence.

Bowers and Pierce (1980) observed that rather than decreasing the incidence of criminal homicide, executions in the state of Oklahoma actually served to increase the level of post-execution homicides. Bowers and Pierce (1980) found that on average, the presence of one or more executions in a given month added two homicides to the number committed in the next month. It is assumed that executions stimulate criminal homicides through the process of devaluation of human life as posited by Bowers and Pierce. This brutalization theory is contrary to the supposition that deterrence theory decreases the level of criminal homicides.

In sum, Oklahoma’s return to the use of the death penalty after a 25 year hiatus did not produce any significant deterrent effect on the level of criminal homicides (Cochran et al., 1994). On the contrary, the reinstatement of capital punishment produced an abrupt and permanent increase in the likelihood that “citizens of Oklahoma will die at the hand of a stranger” (Cochran et al., 1994: 123).

Results indicated a significant increase in the number of stranger homicides after an execution, resulting in the hypothesized brutalization effect. Thus the reinstatement of capital punishment produced a brutalizing effect in “situations where the relational distance between the offender and the victim minimizes socially derived inhibitions against killing and where the dynamics of the encounter are likely to enhance the perpetrator’s perceptions of being wronged” (Cochran et al., 1994: 128). This brutalizing perspective suggests that state sponsored killing,

regardless of the political legitimacy, is likely to have a dehumanizing effect on the general public.

Model 1

Figure 1 demonstrates the dynamic effects possible with an increasing number of executions. The model shows the effects of an increase in the number of statewide executions on the number of homicides. Despite the seeming simplicity of the model it nonetheless serves as a reference point for demonstrating the effects over time of even slight changes in capital punishment policy. While the general rate of homicides is small when compared to the vast rate of overall criminal activity it is nevertheless a crime which poses serious challenges to the criminal justice system. This model, relying on previous work of Cochran et al. (1994), examines the effects of an increase in the number of executions in the state of Oklahoma on the percentage of homicide cases brought to trial. It can be seen that as the number of executions rise so, in turn, do the number of subsequent homicides.

The model represents the dynamic structure and nature of the criminal justice system. If one element changes even slightly the other components of the model, or system, change in accord. The variables factored into the model represent such dynamic phenomena as number of imprisoned in the jurisdiction, percent of homicide cases recorded, percent convicted, nature of the offense, public outrage, prosecution, political pressure, number of executions, death sentence, number of police, police investigations, and police fraction.

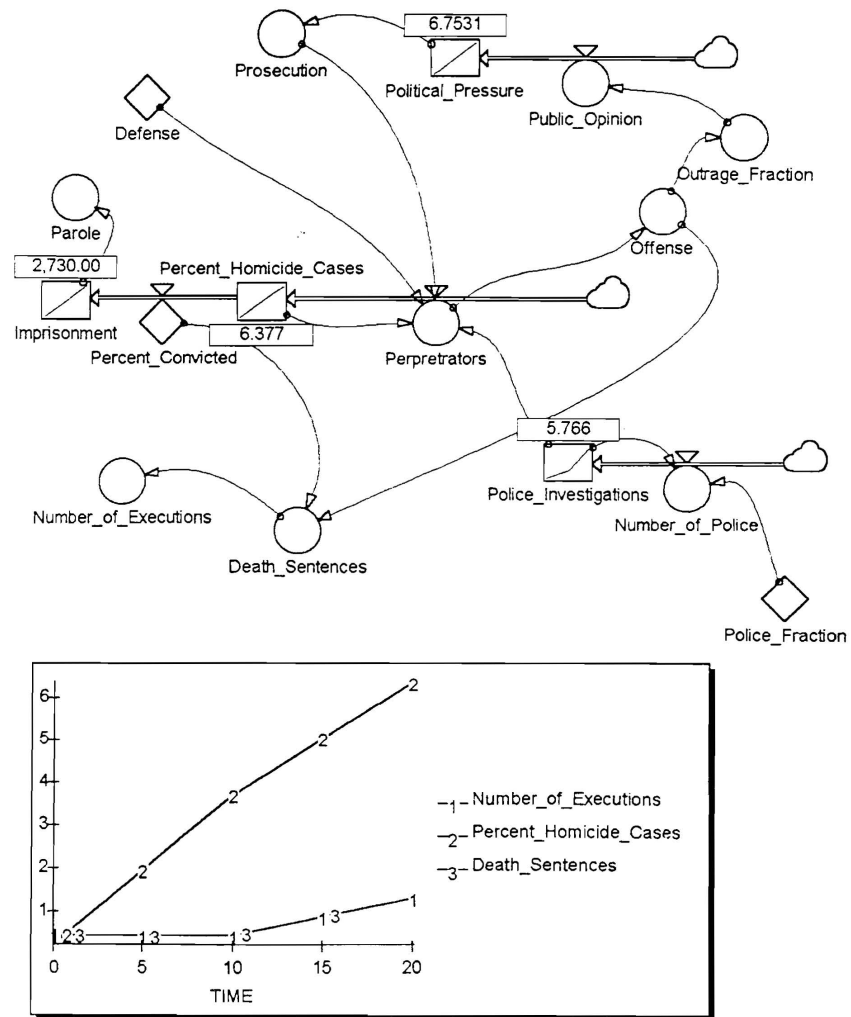


Figure 1. Model 1.

Examining the possibility of a brutalization effect resulting from executions the findings of Cochran et al. (1994) have the potential to pose serious implications for the entire criminal justice system of the State of Oklahoma. If the discussion were broadened to encompass all of the states conducting executions the results indicating the brutalization effect might have ramifications for the nation as a whole.

Cochran et al. (1994) discovered that the level of stranger homicide increased during the time subsequent to an execution, namely that of Charles Troy Coleman. Researchers found significant increases in the level of violence in simple crimes such as arguments involving non-related parties and robberies involving strangers. This fact serves to demonstrate that a general increase in crime that would under ordinary circumstances involve a fight or simple assault, now quite possibly could result in murder.

The potential effects on the criminal justice system are immeasurable. Even a small change in policy could have enormous effects on the entire system. If the brutalization effect becomes a reality as police investigate additional murders this will have an effect on the court system which will in turn affect the corrections departments. Of course the political implications are to be considered as are public sentiment. The implications for a police department experiencing a rising murder rate are numerous. Once the murder rate increases there will be an outcry from the general public for the police to curb the rising tide of violence. This then results in more intense investigations, more detectives, and more expenses. Therefore the criminal justice system as a whole has the potential to be intensely affected by even a small change in policy surrounding capital punishment.

Model 2

The obligation of the Court to put forth policy regarding capital punishment is an enormous responsibility. Figure 2 demonstrates some possible effects a change in capital punishment policy might produce for the justice system as a whole. As is indicated in Figure 2, as the rate of executions increases the percentage of homicide cases decreases. This model sits in direct contrast to the results found in Model 1. The model can not represent every single nuance of the criminal justice system but it does serve to express the dynamic effects inherent in death penalty policy changes. This model does not support the earlier findings of Cochran et al. (1994). Figure 2 illustrates a possible inverse relationship between the number of executions, the number of death sentences, and the percent of homicide cases brought to trial. This rather simple fact generates a dynamic cyclic effect which can impact the entire criminal justice system.

If the Supreme Court placed an injunction against all forms of execution in the nation, components of the model would be completely shut off. Courts across the country would have no recourse save for imprisonment for those convicted of felony homicides and murder. This would place an increasingly large number of violent offenders in the custody of state corrections departments. Prison overcrowding would increase as the number of executions fell to zero. If however, the Court removed some restrictions from states, the increased execution rate would affect law enforcement, the corrections department, the taxpayers, and the court system, as well as related elements of the model. There could be a decrease in homicides due to the deterrent effect of the subsequent execution. It might be extrapolated that violent crime overall might decrease as well. In addition, the lower concentration of serious violent offenders in prisons would mean less tax dollars required to house death row inmates, and the courts, in turn, might anticipate fewer appeals cases.

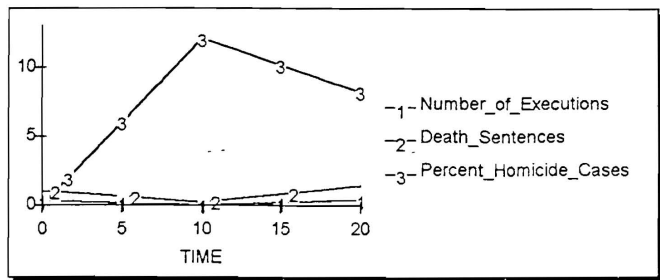
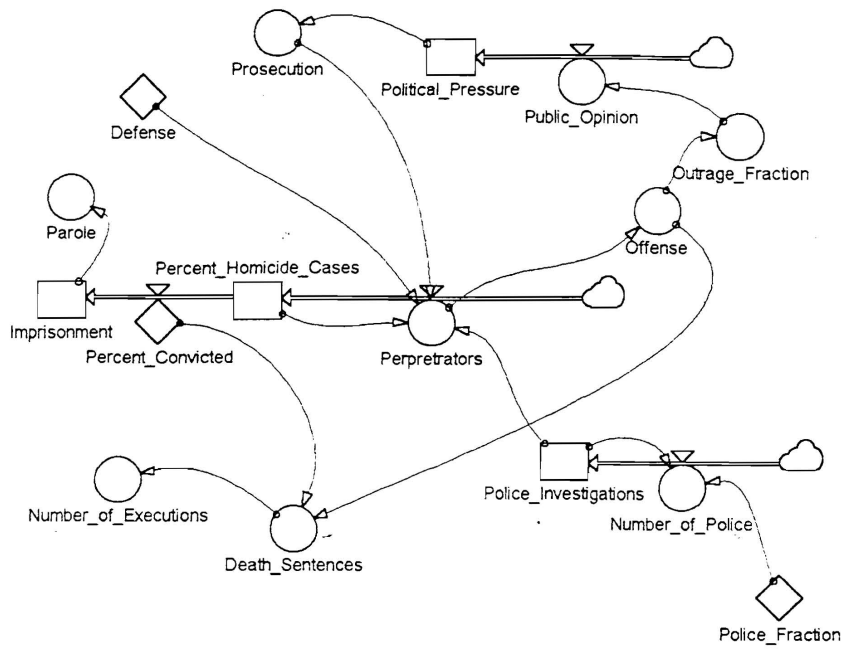


Figure 2: Model 2.

Discussion

Law enforcement agencies are not singly affected by policy changes in capital punishment statutes; courts and taxpayers are also involved. Taxpayers ultimately are required to bear the burden of the costs associated with a capital trial. Of course, courts are affected by capital trials, court dockets, and the prosecutorial process. Courts are responsible for providing judges, juries, and attorneys to hear a trial. In addition, the Supreme Court is provided the ultimate responsibility of forming policy with regard to capital punishment.

At approximately \$22,650 per year it will cost taxpayers in excess of \$45 million dollars to imprison an offender for 20 years (United States Department of Justice, 2004). Due to the expense of imprisoning an offender for their criminal activities, policy makers and legislative bodies have called for an increase in the use of capital punishment. For example, in 1977 only 31 states had the death penalty with only 1 person executed. In 2004, 38 states had the death penalty and 59 persons were executed (United States Department of Justice, 2005). These individuals point to both deterrence and retribution as the foundation on which to institute the death penalty. What is often missing from both proponents' and critics' arguments surrounding the death penalty is a cost estimation. Although it is expensive to imprison an offender, it is far more expensive and time consuming to execute the same perpetrator.

Criminal justice processes are quite different in capital cases than in non-capital cases. One thing that makes capital cases much more expensive is the fact that defendants facing possible death sentences have little motivation to plead guilty. Approximately 90% of criminal cases are resolved with a guilty plea (Inciardi, 2005). This simple fact saves taxpayers tremendous amounts of both time and money. However, in capital cases defendants insist on a trial ten times as often as in non-capital cases (Nakell, 1978). This serves to dramatically

increase the cost of capital trials. Despite going to trial capital cases are generally longer, more complicated, involve more witnesses, and entail significantly more legal maneuvering. For example, a capital case in the State of Kansas averaged 34 days whereas a non-capital case averaged approximately 9 days (State of Kansas, 2003). These motions generally involve longer, more expensive investigations, and often entail the use of expensive testimony provided by expert witnesses. Daily fees for such experts can be as high as \$5000 per day. Jury selection, presentation of arguments, and jury instructions consume even more resources; namely time and taxpayer money. The relatively low amount required for jury payments can range from \$40 per day for a federally impaneled jury to as low as \$4 per day for a small county in Illinois (National Center for State Courts, 2004). The amounts can be increased from \$30 to \$50 per day after approximately 30 days. Capital proceedings cost an average of 48% more than non-capital cases (State of Tennessee, 2004).

Unbeknownst to most, the initial trial to determine guilt or innocence is only the first of two constitutionally required proceedings for offenders in a capital case. A separate hearing must convene to consider aggravating and mitigating circumstances and assess whether a penalty of death is warranted. This trial usually involves the swearing in of still more expert witnesses and an overall review of evidence not presented in the first trial. A Kansas study found that each capital case would cost state and county authorities \$508,000 including defense, prosecution, and court costs (State of Kansas, 2003). These figures did not include the cost of appeals. When appeals were included in the summary it was discovered that costs of a capital case up to and including execution would cost \$4.26 million as compared to non-capital case costs totaling \$740,000 (State of Kansas, 2003).

In a capital case the appellate process involves multiple layers and generally requires years to complete. In the state of Tennessee, for example, offenders sentenced to death have a minimum of 12 layers of appeals available (State of Tennessee, 2004).

It has been stated that capital punishment is not economically profitable due to the fact that many offenders have their sentences overturned during the appeals process. This raises the per case costs of capital trials. It has also been noted in a 2004 analysis that approximately only 29% of death penalty cases actually result in a sentence of death (State of Tennessee, 2004).

Economic Theory and the Legislature

Although the legislature is not directly represented in the dynamic modeling of capital punishment policy, it is an integral part of the system. Whereas most laypersons envision the courts and the police as responsible for outcomes involving capital trials and executions, it is legislature that is also responsible for a great many policies aimed at capital punishment and executions. If economic theories of crime and punishment are examined carefully it is apparent just exactly how difficult the job of legislators is when endeavoring to form capital policy. The legislature must determine prior to the commission of an offense the exact “price” of the crime. The legislators are responsible for much more than just capital crimes. These men and women must determine prices for every crime and offense.

In economic theory the criminal justice system is viewed as a mechanism designed to exact the “price” of a crime from the criminal (Adelstein, 1979). Thus, every crime is a cost imposing activity. It is a transaction in which “the criminal derives some satisfaction while imposing initially uncompensated (external) costs upon a set of victims which includes both the direct victim of the crime and society in general” (Adelstein, 1979, p. 282). Just as in every economic transaction the buyer must pay the seller an acceptable price for the satisfaction

derived from the cost imposing activity. In other words, the criminal must pay a price for the satisfaction derived from the completion of the criminal act.

The seriousness of a crime is, in actuality, a measure of the total cost imposed by crime. No peaceful society could tolerate victims exacting the costs of a crime from criminals so the sentence imposed by the court system forces payment to society in general for the total cost of a crime. The costs imposed by a crime are to be determined by those in the best position to determine and calculate them. In other words, costs imposed on society by criminal activities will be internalized by those in positions in the legislatures and law making fields.

Basic economic theory states that criminal sentencing in the American justice system is an attempt to measure damages caused by an offender's unlawful activity and to impose the cost of these damages upon that offender (Adelstein, 1979, p. 283). The costs imposed on society by a criminal act are then exacted from the perpetrator in the form of a "punishment price." Although the abstract nature of the crime itself is the primary basis for the determination of its costs, the law has recognized two other elements.

First, in the Anglo-American system of law it is believed that a criminal act harms, not only the direct victim of the offense, but indirect victims without any involvement in the criminal transaction. Second, accurate calculations of the costs exacted by a criminal act depend upon the particular circumstances under which it occurs. Each criminal act is said to produce a set of external effects in which there are two distinct costs: Economic and moral. Both types of costs are imposed on two separate classes of victims: Direct and indirect. Economic costs are borne by the direct victim of an offense. Lost income or expenses due to missed work or medical care are examples of direct economic costs. Moral costs are imposed on society by the criminal offense. This is the community's reaction to a crime which is based on individual senses of right

and wrong. Moral costs are measured in terms of a sense of injustice and indignation. A community's outrage over a particularly violent assault is an example of moral costs of crime imposed on society by an offender.

The cost imposing activity of crime is controlled through the extraction from an offender of a price in the form of a deprivation of life or liberty. Pecuniary fines are another method of exacting the price of a criminal act from an offender. Adelstein (1979) notes that the apparent disparity in social costs imposed on offenders for seemingly identical offenses can be traced back to variations in moral cost. This is due, in part, to the social status and identity of both the victim and offender. Circumstances surrounding the offense are also included in any variations in moral cost.

Although the discussion surrounding the economic theory of crime is far from complete or exhaustive it is well suited for any discussion surrounding the issue of capital punishment. Sufficed to explain that it is the legislators of the United States that are ultimately responsible for the "exacting" of the price of crime from criminals. The economic theory highlighted in the previous paragraphs explains the process by which policy is created with respect to not only capital crimes but criminal offenses in general.

Corrections

The last component of the criminal justice system to be impacted by alterations in capital punishment policy is the department of corrections. Due to the fact that the corrections system is responsible for housing those sentenced to the death penalty, it is important to discuss the impact such policy might produce.

Once an individual is sentenced to death by the courts it is the responsibility of the corrections system to house that offender while the appeals process is exhausted until the tile of

execution. In 1991 the average time elapsed from the time of sentencing to the time of execution was 11 years (Bureau of Justice Statistics, 2004). In 2004 there were 1,850 individuals under sentence of death in the United States (United States Department of Justice, 2004). In addition to the number on death row there were a total of 59 offenders executed during the same year (Bureau of Justice Statistics, 2004).

The total corrections expenditure for the fiscal year was \$29.5 billion (United States Department of Justice, 2004). As stated previously, the amount of money to house inmates in a correctional facility is exorbitant. The figures estimated to house a death row inmate are even higher. The State of Texas estimates the annual cost to house one death row inmate to be \$61.58 per day or \$22,477 (State of Texas, 2002).

The correctional system must not only confront the economic costs inherent in maintaining a death row facility but there are numerous other considerations which must be taken into account. The safety of the correctional personnel required to guard those inmates on death row is one salient issue. Due to the fact that an inmate on death row has little to lose and little stake in conformity, guards must be better trained and ever aware for potential problems. The health, safety, and mental well being of correctional officers assigned to death row facilities are issues of growing concern. Death row execution chambers must also be thoroughly inspected and tested prior to a scheduled execution. This again requires monetary expenditures and man hours.

The correctional system, while not immediately involved in capital punishment policy, is ultimately responsible for the housing and execution of offenders under sentence of death. Any policy change affects a great many people; from the warden of a facility, to the guards, and

ultimately the inmates themselves. It is, therefore, important to discuss any implications such policy changes might produce.

Conclusion

As evident from this paper, capital punishment policy and policy changes affect nearly all of the sections of the criminal justice system. The police agencies in charge of curtailing offender misconduct, courts, taxpayers, legislators, and the corrections department are each impacted in various ways by capital punishment policies. Nothing within the criminal justice system can be altered without every other component being affected in some way. The criminal justice system should be viewed as whole and not separate entities with duties and policies unto themselves. Just as no man is an island, no component of the criminal justice system stands alone.

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