CENTER FOR THE STUDY OF
Economy & Society

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CSES Working Paper Series

Paper # 52

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"Is Plea Bargaining a Rational Choice?

Differential Subjective Decision Making as an

Engine of Racial Stratification in the

United States Prison System"

Is Plea Bargaining a Rational Choice? Differential Subjective Decision Making as an Engine of Racial Stratification in the United States Prison System

Douglas Savitsky, Ph.D., J.D.

> The history of the present King of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute Tyranny over these States. … He has combined with others to subject us to a jurisdiction foreign to our constitution, and unacknowledged by our laws; giving his Assent to their Acts of pretended Legislation … For depriving us in many cases, of the benefit of Trial by Jury.
>
> – The Declaration of Independence, 1776

Introduction

In July of 2001, a bailiff escorted Randall Alexander[1] into a Federal District Courtroom in Indiana. Mr. Alexander, a 19-year-old Black man from Richmond Indiana, had been arrested several months earlier after a friend from Los Angeles shipped a compact disc player packed with crack cocaine to him. Mr. Alexander allegedly intended to sell the drugs in the greater Richmond area, as he had done with similar shipments in the past. The purpose of Mr. Alexander's trip to the courthouse was to formally enter a guilty plea before the presiding judge. After his indictment, he had entered a plea of not guilty, and unable to post bail he had been remanded into custody. Since that time, after minor wrangling between his public defender and the prosecutor, a plea bargain had been reached. Mr. Alexander would plead guilty in exchange for a more lenient sentence than he might expect were he to demand a trial.

The judge questioned the defendant in order to get Mr. Alexander's acknowledgment that the plea agreement he was entering into was with his consent. As required by the Federal Rules of Criminal Procedure, Mr. Alexander agreed that he had not been coerced, that he understood he had a right to a trial, the right to force the government to prove beyond a reasonable doubt that he had indeed engaged in the activities he was accused of,[2] and that by entering a plea of guilty he was relinquishing any right he might have to contest his guilt in the future. The judge then entered the guilty verdict and Mr. Alexander was led away to await sentencing. The Federal mandatory minimum sentence for first offense possession of just 5 grams of crack cocaine is 5 years in federal prison. For 25 grams, it is 10 years.[3]

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[1] Not his real name.

[2] Surprisingly, acknowledging guilt is not a requirement for pleading guilty. In a procedure known as an Alford plea, named after the case *North Carolina v. Alford* (400 U.S. 25 (1970)), a defendant may plead guilty while maintaining his innocence.

[3] Sentencing policy is such that there is a 100 to 1 ratio in quantities of powder cocaine versus crack cocaine necessary to trigger these mandatory minimums. That is, a defendant need only be caught with one

Mr. Alexander's situation is not unique. Over the last three decades, the rate of incarceration in the United States has risen at an unprecedented rate (Warren 2008). The United States now houses more than 1 in 100 American adults, or about 2.3 million people, in prisons and jails (Id). This is true even while the rate of criminal activity, particularly violent and property related criminal activity, has dropped steadily (U.S. Department of Justice, Violent Crime Trends 2008, Western 2006). Further, while the rate of much criminal activity has remained equal across races,[4] the rate of incarceration for African Americans and Hispanics has risen far faster than the rate for whites. Indeed, African Americans and Hispanics are considerably more likely to spend some portion of their lives incarcerated than are whites (Scalia 2001, Western 2006). For 20 to 24 year olds, while 1 in 9 Black men and 1 in 24 Hispanic men are currently behind bars, only 1 in 60 white men are (Warren 2008). In addition, 1 in 3 African American males can expect to be incarcerated at some point, as opposed to only 1 in 17 whites, if current incarceration rates continue (Bonczar 2003). For African American males without a high school education, the number facing incarceration is predicted to be almost 3 in 5 (Western 2006).

While these numbers, or some version of them, are widely known and shocking in their own right, they do not necessarily tell the whole story. For instance, the enormous increase in rates of imprisonment is not due to increased sentence length. That is, the prison system is not simply keeping prisoners around longer allowing their numbers to build up. Instead, the increase in prisoners is due to an increase in prison admissions with sentence length only increasing a small amount (Wacquant 2008a). Additionally, if people on probation and parole are considered in addition to those in prison, the number of people controlled by the United States prison system is nearly 7 million, or one in thirty adults (Wacquant 2008b). In order to administer such a system, the prison system has become the third largest employer in the United States, behind only Manpower and Wal-Mart (Id).

These numbers make the United States the current world leader in both prison population size, and percentage of citizens in prison (Western 2006).[5] The reasons for the sheer numbers, as well as the racially biased numbers, are numerous and complicated. These numbers are partially attributable to the so-called war on drugs, which began in earnest in 1980. At the outset of the war on drugs, arrests on drug related charges comprised just under 6% of all arrests (King 2008). By 1990, that rate had increased to

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percent as much crack as powder cocaine in order to receive the same prison sentence. Much has been made about this policy being racist, and many people argue that it has resulted in many more Blacks being incarcerated than whites (Blumstein 2002). Disagreeing with Blumstein, Kennedy (2007) suggests that the sentencing disparity may in fact be justified by the actual differences between the two drugs as well as the typical methods of distribution. However, lost in the debate is that statistics suggest Blacks do not actually use or distribute crack at rates that are considerably higher than whites, certainly not at rates high enough to account for the rate that Blacks are imprisoned for doing so (SAMHSA 1998, Western 2006). This suggests that the racial bias may lie elsewhere.

[4] This is the case for drug related crime (see SAMHSA 1998, Western 2006). For other crime, this is a more controversial claim.

[5] While China reports, as of 2004, a prison population of approximately 1.5 million or about 0.12% of its population (Warren 2008), others have estimated that it could be as high as 16 to 20 million (Adams 2004). Other countries that may have, or may have had, similarly large prison populations include North Korea, The Soviet Union, apartheid era South Africa, Nazi Germany, and Cambodia under the Khmer Rouge (Id).

over 11%, and today is over 12% nationwide (Id). From 1980 to 2003, the prison population of drug offenders increased from approximately 40,000 to nearly half a million (Id). Moreover, over this 23 year span, the total number of arrests for drug offenses was over 30 million with increases in arrests for African Americans outpacing arrests for whites at a rate of over 3 to 1 (Id).

In addition, a change in the political climate in the 1970s away from rehabilitation and toward punishment has been cited as a reason for the increase in incarceration numbers (Blumstein 1988). The reasons for this political change are numerous. Blumstein (1988), for instance, notes that these factors include, "the decline in faith in the effectiveness of rehabilitative correctional programs" (237), a reduction in the use of parole as a "safety valve" to keep prison populations under control, a generalized public sentiment demanding toughness against perceived criminals, and the coming of age of the Baby Boomer generation and increases in crime that came with it (see also Alschuler 1979). Additionally, Irwin and Austin (1994) ascribe the increase in incarceration, at least in part, to increases in economic disparity. Other explanations include high levels of violent crime (Blumstein 1982, 1993), harsher sentencing laws for non-violent crime than in other countries (Mauer 1999), and increased media reports related to crime (Scott 1975). Finally, coupled with these social and perceptual changes in crime rates, many commentators cite basic federalist structures as an important reason why the United States' prison population has increased at a faster rate than in other industrialized nations (Jacobs and Kleban 2003).

While these are all legitimate reasons for the current state of American prisons, this paper argues that plea bargaining is an essential element of both prison growth as well as the racially disparate state of American prisons. Indeed, it argues that none of the above reasons could lead to the prison population explosion but for the existence of plea bargaining. Plea bargaining has become ubiquitous as the primary method of criminal case disposition in the United States. By 1920, it was thought that 88 percent of convictions in New York were via guilty pleas, up from 22 percent just 80 years earlier (McDonald 1985). Most modern commentators consider the number of cases disposed of through plea bargains to be around 90 percent (Newman 1966) though it may be higher (Friedman 1993). Indeed, in one misdemeanor court, Feeley (1979) found the rate to be 100 percent. Although nobody knows the exact number, what is known is that for the vast majority of defendants, the criminal justice system does not involve a jury trial, the presentation of evidence, or any sort of dramatic courtroom scene. Instead, it involves bargaining for justice.

Returning to Mr. Alexander's plea entry, in some sense it is surprising that a defendant would ever agree to plead guilty. After all, the Constitution, in two places no less, guarantees a trial.[6] The burden of proof in a trial is on the prosecutor, and proof

[6] The requirement of a jury trial is in Article III as well as the 6th Amendment. It is the only thing that is mentioned twice in the Constitution. Article III § 2 Clause 3 of the Constitution states, "The trial of all crimes … shall be by jury." Supreme Court decisions interpreting this clause are few and far between, and in general give it only a cursory examination. Indeed, the only modern era cases to directly address this clause are several district court decisions from the first half of the twentieth century, long before the Due Process revolution or even the right to counsel was settled (See *O'Grady v. Hiatt*, 52 F.Supp. 213 (M.D.Pa. 1943) (affirmed 142 F.2d 558) ("The constitutional right of trial by jury is waived by voluntary plea of

guilty."); *Bardwell v. Hiatt*, 50 F.Supp. 913 (M.D.Pa. 1943) ("A defendant's constitutional right to a "trial by jury" has no application where there is a voluntary plea of guilty.")).

When dealing with the Article III requirement of a jury trial, the Supreme Court, while stating, "When this Court deals with the content of this guarantee--the only one to appear in both the body of the Constitution and the Bill of Rights--it is operating upon the spinal column of American democracy"(*Neder v. U.S*, 520 U.S. 461 (1999)), has nonetheless failed to give even a cursory examination to the meaning of the article. However, while not doing a careful analysis of the Constitutional text, the Court did offer the following platitudes:

> William Blackstone, the Framers' accepted authority on English law and the English Constitution, described the right to trial by jury in criminal prosecutions as "the grand bulwark of [the Englishman's] liberties ... secured to him by the great charter." One of the indictments of the Declaration of Independence against King George III was that he had "subject[ed] us to a Jurisdiction foreign to our Constitution, and unacknowledged by our Laws" in approving legislation "[f]or depriving us, in many Cases, of the Benefits of Trial by Jury." Alexander Hamilton wrote that "[t]he friends and adversaries of the plan of the convention, if they agree in nothing else, concur at least in the value they set upon the trial by jury: Or if there is any difference between them, it consists in this, the former regard it as a valuable safeguard to liberty, the latter represent it as the very palladium of free government." The right to trial by jury in criminal cases was the only guarantee common to the 12 state constitutions that predated the Constitutional Convention, and it has appeared in the constitution of every State to enter the Union thereafter. By comparison, the right to counsel--deprivation of which we have also held to be structural error--is a Johnny-come-lately: Defense counsel did not become a regular fixture of the criminal trial until the mid-1800's. The right to be tried by a jury in criminal cases obviously means the right to have a jury determine whether the defendant has been proved guilty of the crime charged. And since all crimes require proof of more than one element to establish guilt (involuntary manslaughter, for example, requires (1) the killing (2) of a human being (3) negligently), it follows that trial by jury means determination by a jury that all elements were proved. (See *Id*. (internal citations omitted)).

Instead, what the Court has interpreted is the jury clause of the 6th Amendment, which states, in pertinent part, "In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury." This, the Court has considered an individual right that, while not always waiveable (see *Lynch v. Overholster*, 369 U.S. 705 (1962) (criminal defendants have no inherent right to have guilty pleas accepted by the court.)), is generally a defendant's to do with as he pleases. However the reasoning behind the Court's holdings in this regard is logically inconsistent with other Court holdings. For instance, the language in the 6th Amendment regarding jury trials is essentially the same as the language in the same Amendment ensuring a right to counsel. However, the Court has found the right to counsel so important that it is guaranteed. While the right to counsel was initially interpreted, like the rest of the bill of rights, to be a negative right, by 1938, in *Johnson v. Zerbst* (304 U.S. 458 (1938)) the Court found that the right to counsel was a positive right. The Court stated:

> [The Sixth Amendment] embodies a realistic recognition of the obvious truth that the average defendant does not have the professional legal skill to protect himself when brought before a tribunal with power to take his life or liberty, wherein the prosecution is presented by experienced and learned counsel. That which is simple, orderly, and necessary to the lawyer--to the untrained layman--may appear intricate, complex, and mysterious (Id. At 462).

Thus, the Court recognized that simply allowing a defendant to utilize an attorney was not sufficient to guarantee that the minimal due process guaranteed by the Fourteenth Amendment was met. Instead, in order that the process due was supplied, the Court required that an attorney be paid for by the court. However, the Court has not made the same application to the right to a jury trial. While convenient, this interpretation is strained for a number of reasons. First, the phrase "shall enjoy" does not imply waver. Second, it is inconceivable that the Court would allow a defendant to trade the right to an attorney for a guaranteed concession from a prosecutor, even though the outcome would be much the same to trading a jury trial.

must be beyond a reasonable doubt. Even when a defendant is clearly guilty, there is always the chance of a prosecutor making a mistake, forgetting to file a form on time, or losing the evidence, or of the defendant getting the jury to sympathize with him.

More important is the consideration of what would happen if every defendant refused to plead guilty. Logically, the criminal justice system would become overwhelmed. If every one of the millions of people who are funneled through the court system every year suddenly required a trial, complete with attorneys, judges, full jury boxes, court reporters, court rooms, and witnesses, the whole system would shut down. The resources required would be staggering. Clearly, if every defendant received the criminal procedure that the law guarantees him, the number of prosecutions would need to drop precipitously which would necessarily lead to a smaller prison population.

Moreover, under this scenario what would likely result in less prosecutions for low-level crimes, and for poor defendants. The reason is that it is currently much more expensive for a prosecutor to prosecute a murder or an embezzlement case involving a lengthy investigation and trial than a case like Mr. Alexander's that can be disposed of quickly via a plea bargain. A prosecutor who wants to show she is effective must win a large number of convictions. As such, she does well to focus on the cases that can be easily disposed of through plea bargaining. However, if the easily disposed of cases were to become expensive due to the need for a trial with the cost of the hard ones staying about the same, then the prosecutor's incentives would shift. She would do better to prosecute cases with real social importance, especially when those cases cost the same, or only slightly more, to prosecute than the ones that are less important. Defining what constitutes a socially important case and what does not is subject to disagreement. However, in the wake of Enron, Bernie Madoff, and the sub-prime meltdown, it is difficult to argue that the prosecution of a smalltime crack dealer is more important than the prosecution of a white-collar criminal.

However, it is unlikely that defendants would be able to cooperate and all refuse to plea bargain. Indeed, it is unlikely that the communication between defendants necessary to do such a thing would even be possible. Further, since each defendant has an incentive to plea bargain, even if collectively all defendants are better off if none of them do, expecting defendants to unilaterally stop plea bargaining is unrealistic.

The importance of the fact that the guarantee of a jury trial appears twice, besides the obvious emphasis, is that a standard canon of textual interpretation is that provisions of text should not be interpreted in such a way as to render other provisions with similar text superfluous (Eskridge et al., 2001). What this means is that if seemingly similar provisions appear in the same body of law, they are interpreted to mean different things. Thus, even if the Court's interpretation that the 6th Amendment jury right is waiveable is a correct interpretation, it is far from clear that this should have any bearing on the Article III clause. Indeed, the fact that the Sixth Amendment's guarantee of an individual defendant's right to a jury trial was added after the ratification of the Constitution, and that the Bill of Rights was included in order to solidify rights not otherwise granted by the Constitution together imply that Article III's requirement for a jury trial should be interpreted differently from the Sixth Amendment.

Finally, other canons of interpretation include the idea that words should mean what they say, and that "shall" is interpreted to mean mandatory (Eskridge et al., 2001). Thus, it is difficult to argue that "The trial of all crimes … shall be by jury" means anything other than what it says. While the Sixth Amendment's jury clause clearly deals with individual rights, Article III clearly does not. The rest of Article III all deals with the structure and powers of the judicial branch of the government, and the definition of treason. Thus, it is overreaching, at the very least, to read any right to waiver into the Article III jury clause.

However, turning around the thought that if every defendant refused to plea bargain it would result in a smaller and more equitably distributed prison population suggests that plea bargaining is in part responsible for the state of American prisons. This is not to say that plea bargaining causes inequality in prison populations as such. It is to say that the institution of plea bargaining is a necessary factor. Additionally, if plea bargaining as an institution leads to such a large level of racial disparity in prisons, then this social fact likely feeds back on defendants, influencing the decisions they make, and thus exacerbating the problem. These two concepts are the focus of this project. The project argues that plea bargaining is the essential factor that has resulted in the large and racially disparate American prison system.

Toward a Sociological Model of Plea Bargaining

Plea bargains account for more than 90 percent of guilty verdicts (Friedman 1993). Their use lowers the transaction cost of criminal prosecutions, facilitating the growing prison population, which has grown to over 2.3 million people (Warren 2008). The literature on plea bargaining is vast.[7] However, it has largely centered on debating whether plea bargaining is proper in an ethical sense, or on exploring models of the plea bargaining interaction, modeling how individual bargains are made. Left out of this literature are analyses of how the micro level interactions involved in plea bargains aggregate into a macro level social phenomenon, and in turn how this macro level phenomenon influences the micro level bargains. This project seeks both to fill in this gap as well as to refine the interactional level plea bargaining model. It explorers how and when a plea bargain is reached, how plea bargains aggregate into a macro level social phenomenon, and how this phenomenon feeds back to influence the interactional level bargain.

The hypothesis of this project is that plea bargaining contributes to the racial inequality found in the American prison population by disproportionately impacting African American defendants. Plea bargaining lowers the transaction cost of criminal prosecutions which combines with political policies favoring large scale incarceration to drive up the prison population. It does this by indirectly pitting defendants against each other in what is in essence a multiplayer Prisoner's Dilemma that induces defendants to take worse bargains than they otherwise might. Moreover, the decrease in transaction costs is generally larger for cases against poor defendants which correlates to a decrease in transaction costs for prosecuting Black defendants. Since prosecutors and the police are interested in maximizing successful prosecutions and minimizing costs, they are thus encouraged to prosecute a disproportionate number of Black defendants.

Additionally, this project hypothesizes that in the plea bargaining process, a defendant negotiates based upon his subjective views of the criminal justice system and his expectation of conviction. He bases these subjective views both on the objective reality as well as his perception of the social, cultural, and economic factors involved. This subjective analysis leads African American defendants to bargain with a more pessimistic estimate of how they will fare as compared to white defendants, resulting in overall worse, from the defendant's perspective, bargains. Thus, the combination of the prosecutor's effort to conserve resources and the defendant's evaluation of his own risk

[7] As early as 1977 it was suggested that the literature had "become characterized by repetitiousness and even sterility" (Baldwin and McConville 1977: 1).

aggregate into a system that produces racially biased prison populations. Finally, not only has the imprisonment of Black men created a norm of acceptance in some Black communities of prison being a way of life (Western 2006), but the norm of plea bargaining as the accepted method of case disposition has emerged as an institution. These norms help perpetuate, and even increase, the very social factors that facilitated the disparate bargains in the first place. Indeed, it also lowers the perceived cost of a conviction, decreasing the resources Black defendants will be willing to invest in a defense.

The proposed model consists of three interwoven elements. First, a plea bargain is an institutional arrangement that enables a prosecutor to secure a conviction at a lower cost than if she were to take the case to trial. As her incentives are generally both to obtain the maximum number of convictions as well as to minimize costs, plea bargains offer a way to do this. Similarly, plea bargains seemingly offer a defendant the best way to minimize his expected costs, both in terms of the transaction costs of a trial and in terms of his expected sentence. Plea bargains are thus generally seen as being in an individual defendant's interest. However, plea bargaining as an institution has a collective action aspect to it. Over the entire set of defendants, plea bargaining induces comparatively bad bargains that, coupled with its efficiency, lead to a larger prison population. Without plea bargains, while individual defendants might be denied the benefit of bargaining, in the aggregate, there would be less man-years of prison time served.

Second, this project argues that the bargains struck by Black defendants tend to be worse than those struck by similarly situated white defendants. There are several reasons for this. At the simplest level, Black defendants are generally poorer, and they are thus less able to afford a competent defense. Similarly, Black defendants tend to be in a position of lower social power vis-à-vis the criminal justice system than are white defendants. Plea bargains are a convergence of the expectations of the two sides to a negotiation. In order for both sides to agree to a bargain, both must believe that they are better off by making the bargain. The prosecutor must believe that the certainty of a conviction and the cost savings of avoiding a trial are worth the concessions made to the defendant, and the defendant must believe that the costs incurred from his guilty plea are lower than his expected costs were he to go to trial.

However, because a Black defendant is more likely than a white defendant to view the criminal justice system as biased against him, his subjective expected sentence is higher than that of a white defendant. That is, Black defendants will tend to be more risk averse than white defendants, owing to a cultural and historical distrust in the criminal justice system. Plea bargains offer a risk averse defendant a way to avoid extreme punishment, often seen by the defendant as inevitable, by accepting costs that are more modest. Consequently, Black defendants will ironically tend to accept bargains with comparatively worse outcomes.

Further, because large numbers of Black defendants are "found guilty" through plea bargains, to a Black defendant first entering the criminal justice system, trial likely appears hopeless. Indeed, one in three African American men will spend some portion of his life in prison, and a social norm of acceptance of prison as a part of life has emerged in portions of the Black community (Western 2006). Because prison has become such a

large part of the life course in parts of the Black community, Blacks than perceive the costs imposed by prison as being lower than do whites. This perceptual differential puts Black defendants in a worse bargaining position.

These factors act to increase the perceived probability of conviction, increasing the expected costs. They also lower the overall perceived cost of a conviction and a particular prison sentence, which lowers the amount a prosecutor must concede in a bargain. That is, for a Black defendant who expects the cost of being a defendant to be high, and for whom a prison sentence appears to be a lower cost than the same sentence would for a similarly situated white defendant, the bargain that would be expected to be accepted is relatively worse than for that similarly situated white defendant. Thus, the fact that others have already been convinced to plea bargain is itself a factor that pushes a defendant in the same direction. Thus, the set of all bargains that a Black defendant will be willing to agree to would be expected to include higher sentences than for a white defendant.

The third component of this model is that plea bargaining aggregates to high levels of imprisonment and a disproportionately high rate of Blacks in prison. This imbalance feeds back on defendants fostering perceptions of the criminal justice system that convinces minorities that they are indeed more likely to have higher costs than whites. The crux of the argument is that each defendant and prosecutor in a criminal prosecution must make a subjective evaluation of risk. The bargain that is reached relates directly to this evaluation. For a defendant, this evaluation differs based upon his experience with, and perception of, the criminal justice system. Blacks have been shown to fare worse in the criminal justice system (Blumstein 1982, 1993), and survey data indicates that African Americans are more distrustful of the criminal justice system than whites (see e.g., Weitzer and Tuch 1999, Myers 1996). Thus, the bargains Black defendants are able to make tend to be worse than the bargains whites are able to make. For a prosecutor, prosecutions that are less expensive are more desirable. These less expensive prosecutions tend to correlate with prosecutions of Black defendants.

Conversely, in a system where judges and juries make the decisions, the defendant's perception of his guilt, his risk, and the fairness of the system do not influence the outcome to the same extent. Thus, there is the potential for different outcomes at both the micro and macro level depending upon whether a case is disposed of at trial, or via a plea bargain. Under a plea bargaining regime, cases that prosecutors might otherwise lose at trial, or that might not be brought in the first place, whether due to insufficient evidence, lack of witnesses, lack of resources in terms of time, staff, or money, lack of political will, or any number of other reasons, can be won simply by granting sufficient concessions that a defendant will be unlikely to turn down. Indeed, studies have shown situations with 100 percent guilty plea rates over hundreds, or even thousands of cases (Feeley, 1979), where it is simply inconceivable that every defendant would have been convicted at trial. As Alschuler has noted, the notion that in some cases a bargain will not happen is akin to thinking that, "some secret force will presumably hold every defendant back, despite the fact that the concessions he was offered were deliberately calculated to overbalance his chances of acquittal" (Alschuler 1968: note 43).

The interactional aspect of this plea bargaining model, that is, the one on one bargaining process, builds upon other plea bargaining models. However, in addition to

making changes to these models on the interactional level, this project also considers how aggregating large numbers of plea bargains changes how individual level bargains work. While on the individual level, one might simply analyze the costs and benefits each party to the plea bargain might consider, on the aggregate level, there are feedback loops and other factors that influence the decisions made by each party. Put another way, in addition to the first order influence of plea bargaining on the criminal justice system, plea bargains also influence n^{th} order decision making.

Specifically, because some defendants bargain, this frees up the prosecutor's resources for additional cases. A prosecutor uses plea bargains as a way to minimize her resource expenditure while maximizing her effectiveness. A prosecutor must decide how to allocate resources to receive the maximum reward, which may mean weighing total convictions over long convictions. For a prosecutor who campaigns on a "tough on crime" platform, obtaining one conviction with a ten year sentence is not equivalent to obtaining two convictions, each with a five year sentence, though both cases share the same number of total man-hours of prison time. Both in terms of a defendant's and the public's discount rate, and in terms of the public's perception of prosecutorial effectiveness, the two shorter sentences are more valuable. If a prosecutor can win two mild convictions for the same or lower cost than one severe one through plea bargaining rather than proceeding to trial, it is clearly in her interest to do so. Further, prosecutorial cost savings made through plea bargaining increases the prosecutor's bargaining power in other cases. Indeed, Posner (2003) suggests, "Given a fixed prosecutorial budget, average sentences [given at trial] will probably be heavier rather than lighter if plea bargaining is allowed, because the prosecutor can use the money saved in plea bargains ... to build a stronger case when bargaining fails" (Posner 2003: 578). In Posner's example the cost of a plea bargain and the cost of a trial are at issue, but the point remains that plea bargains, being less expensive and less risky than trials, are generally in the prosecutor's interest. Finally, plea bargains keep the court system as a whole from becoming backlogged, thus allowing large numbers of cases to move through it.

The structure of the remainder of this paper is as follows: First, it will briefly explore prior plea bargaining models. Second, it will present a new model of the plea bargaining interaction that is based on the earlier models but which explores the collective action nature of plea bargaining. It will argue that this collective action structure results in high levels of incarceration because it induces plea bargains. Third, it will argue that plea bargaining is more detrimental for Black defendants than white defendants. These factors aggregate into a large prison population where Black defendants receive harsher sentences than white defendants. Finally, the model will argue that an outcome of this differential is an institutional structure that feeds back on future defendants reinforcing the factors that caused the differential in the first place.

Plea Bargaining Model Background

The economic analysis of the criminal justice system stems largely from Gary Becker's seminal paper on the topic (Becker 1968), which appeared about the time that Law and Economics was getting a foothold as a serious discipline (Rhodes 1976). Prior to that, criminal justice had been considered largely outside the realm of economic analysis. Since then, economists and legal scholars have developed several models of

plea bargaining. These models are generally based upon neo-classical economic and rational choice concepts. The models assume rational decision making on the part of the agents involved, general access to relevant information and knowledge, and a lack of transaction costs. Indeed, the models offer few, if any, social considerations of defendants beyond their being rational actors.

Posner (2003) offers an overview of the economic analysis of plea bargain decision making. He does not present a formal model of plea bargaining as such. Instead, he presents an analysis of many of the issues involved in plea bargaining from several perspectives, largely aggregating the formal models offered by other scholars[8] Posner begins his analysis by arguing that the standard criticisms of plea bargaining are incorrect. These criticisms are that, from the defendant's side, it denies a defendant's right to trial, and from the prosecutor's side, it leads to shorter sentences. Posner suggests that these criticisms are both incorrect as, "If a settlement did not make both parties to a criminal case better off than if they went to trial, one or the other would invoke his right to trial" (Posner 2003: 578)

Additionally, Posner argues that an abolition of plea bargaining would lead to longer waiting times for criminal defendants. This, he argues, would increase expected costs for those defendants held without bail before trial, especially for those who are actually innocent. It would also decrease expected costs for those who did receive bail. Additionally, Posner argues that while overall sentences would likely remain constant, the variance, and thus the economic risk involved would increase. Finally, he argues that, with all of the safeguards set up for criminal defendants, the reality is that most defendants are actually guilty, and many guilty defendants end up going free. Thus, Posner suggests, a little pre-trial detention, even for defendants who ultimately are acquitted, or against whom charges are ultimately dropped, is a good thing as it still provides some punishment and thus deterrence even without a conviction (Posner 2003).

Posner's insights reflect the prevailing wisdom regarding the structure and beneficence of plea bargains contained in most of the formal models. However, at face value, some of Posner's assertions are problematic. For instance, the notion that all of the parties to a plea bargain are better off, lest they would not agree to bargain, is an oversimplification. There are numerous examples, such as the standard Prisoner's Dilemma, or indeed any collective action problem, where individuals bargain to positions that, while they may seemingly be the individual's best option in the short run, are categorically not their overall best option. Additionally, Posner vets his concern about the possibility of innocent people serving some time noting that most defendants really are guilty. While it may be true that most defendants are guilty, this is logically not enough to justify Posner's argument. The fact that many defendants are guilty does not necessarily balance the fact that many guilty people also go free. That is, the criminal justice system actually does a poor job of selecting who will be a defendant, focusing on the poor and minorities in higher proportions than it should. Posner's reasoning is akin to suggesting that just because people who score highly on the GRE do well in graduate school, that this implies that people who score poorly on the GRE will do badly. The second statement, the logical inverse of the first, is not necessarily true.

[8] For economic models of plea bargaining, see, e.g., Landes (1971), Rhodes (1976), Adelstein (1978), Grossman and Katz (1983), Reinganum (1988), Kobayashi and Lott (1996), and Baker and Mezzetti (2001).

The Model in Detail

As an addition and an alternative to the economic plea bargaining models, this project argues for a model of plea bargaining that incorporates sociological ideas. Like in the economic models of plea bargaining, in this model, a prosecutor and a defendant will agree to enter into a plea bargain when they each *believe* they are better off to do so. That is, parties will agree to a plea bargain when it is perceived that the benefits outweigh the costs for each party. Leaving aside the difficulty of assessing these costs, particularly for the defendant, this model will begin like the typical plea bargaining model by simply weighing the defendant's assessment of his risk of conviction times the cost of conviction, usually the expected prison sentence, against the cost of the bargain. In other words, as a starting point, the defendant weighs his expected trial sentence against the bargain he is offered, and he chooses the option that reduces his costs. In the defendant's case there is little "benefit" to consider, only the reduction in costs. That is, from the defendant's perspective, in the best of all worlds, he will merely be back where he was before the process started.[9] With all other possible outcomes, including acquittal at trial, the defendant still incurs substantial costs.

As a stylized example of a plea bargain decision, assume a defendant has been charged with a crime that carries with it a requisite 10 year prison term. If the defendant expects that his chances of being convicted at trial are 90 percent, then any offer from a prosecutor for less than 9 years makes him better off than if he goes to trial. Obviously, the decision process is more complicated as information and procedures have costs as well. However, this serves as a baseline to how this model, and indeed all published models, assumes that a plea bargaining decision is made.

From the prosecutor's perspective, the calculation is similar with the addition of a benefit component. The prosecutor is interested in obtaining convictions while reducing her risk of losing at trial, all while minimizing her allocation of resources. In essence, if the prosecutor determines that the cost savings of not having to go to trial plus the possibility of losing makes up for the reduced sentence, then bargaining makes sense.

In addition to the formal plea bargain where concessions are explicit, in some cases the concessions are more implicit. For example, these concessions may come in the form of a defendant simply anticipating that sentences are shorter for those who plead guilty. Indeed, many judges make certain it is known that defendants who plead guilty will get lighter sentences (Alschuler 1976). Moreover, the fact that a defendant who pleads guilty does not need to pay for an attorney, or have the details of his crime publicly aired, is a form of concession in exchange for a plea.

As an example of this, one might consider the timely case of Bernie Madoff. Madoff plead guilty to fraud charges after being accused of conducting a Ponzi scheme worth over $50 billion. For this, he received a prison sentence of 150 years. At first blush, it is difficult to see how this would be considered a plea bargain as the prosecutor made no formal concession in exchange for the guilty plea, and the judge essentially gave Madoff a life sentence. However, at the time of his conviction, Madoff was 71 years old. Considering the scope of the crime and the public outrage, it is unlikely that there was

[9] This considers any gains from crime to be exogenous to the process of plea bargaining. This is reasonable as these gains will generally be lost after conviction, and they represent the situation the defendant was in at the beginning of the criminal justice process.

any chance he could have actively bargained his way to a non-life sentence. Thus, a prosecutor could offer him little that would induce a plea bargain. From Madoff's perspective, however, by pleading guilty, he spared himself the embarrassment of a public trial. More importantly, while there are numerous people angry with Madoff, there is also presumably a small group of people that was made rich through the scheme. By forgoing a trial, Madoff cut off at least one of the government's routes for investigating these people, namely his trial, and thus offered those people the last bit of power he had. Thus, the implicit concession the government made by accepting Madoff's guilty plea was to stop at least one aspect of its investigation into his compatriots.

Indeed, historically courts did not necessarily accept guilty pleas, valuing the process of the trial in determining guilt. That is, while a defendant has always been free to confess, historically a trial, albeit often a short one, was still necessary for a conviction (Alschuler 1979). Additionally, some commentators have considered the existence of pockets of guilty pleas in historical situations to be evidence of plea bargaining, regardless of the absent records of explicit plea bargain agreements (Cockburn 1978).[10] Thus, even without any formal concessions from a prosecutor or a court, for the purposes of an analysis of plea bargains, any guilty plea is in reality a plea bargain.

With that as background, the next step is to consider how the plea bargaining interaction manifests with regard to the greater institution of plea bargaining. First, like many interactions where macro level structures are dependent upon the aggregation of micro level events, plea bargaining is in essence a collective action problem. This is not necessarily obvious, as defendants are not a group with collective interests. However, defendants do have similar interests. In particular, defendants are interested in staying out of prison, or at least minimizing the costs imposed by the criminal justice system. How this is a collective interest is that if every defendant refused to plea bargain, this would likely clog the court system. That is, owing to the high cost of prosecutions and trials, a collective refusal to plea bargain would reduce the total number of criminal dispositions that the system could absorb. However, the existence of plea bargaining gives each defendant an incentive to defect from the collective's most powerful strategy which is akin to a general strike. This is because, for those charged, a plea bargain still seems, at the individual level, to be a better deal. In essence, plea bargaining presents to each defendant a sort of multiplayer Prisoner's Dilemma.

In its simple form, a Prisoner's Dilemma is a situation where two individuals must choose between two different actions. Collectively, they are better off cooperating and making one choice. However, individually, each is better off defecting from cooperation. Ironically, if both defect, they are collectively in the worst possible position. The Prisoner's Dilemma gets its name from how it is typically illustrated (See, e.g., Baird et al. 1994). Consider two co-defendants charged with a crime for which the requisite sentence is 10 years. In this scenario, if neither confesses (defects), each will be charged with and convicted of a lesser crime, each receiving a sentence of 5 years, for the sake of an example. The intuition as to why the sentence would be lower is that the prosecutor lacks evidence, or resources, to prosecute for the maximum crime, or that the probability of a conviction is considerably lower. However, if one defendant confesses and provides

[10] Other commentators, such as Alschuler, reject this interpretation.

information to the prosecutor, he will receive only a light sentence of 4 year as a reward for his testimony, while the other will receive the maximum sentence of 10 years. If both confess, the prosecutor will not seek the maximum sentence, and each will instead receive an 8 year sentence. From a collective view point, both defendants keeping quiet leads to the lowest total sentence of 10 total years between them. However, if one defendant does keep silent, the other defendant's best option is to confess, as he will receive a modest 4 year sentence rather than 5 years. Additionally, if one defendant knows that the other will confess, then it is also in his best interest to confess as it will reduce his sentence from 10 years to 8. In other words, regardless of what the other prisoner does, each prisoner has an incentive to confess as he is always better off doing so. In the end, this outcome results in the highest total number of years in prison, 16 being greater than 14 or 10.

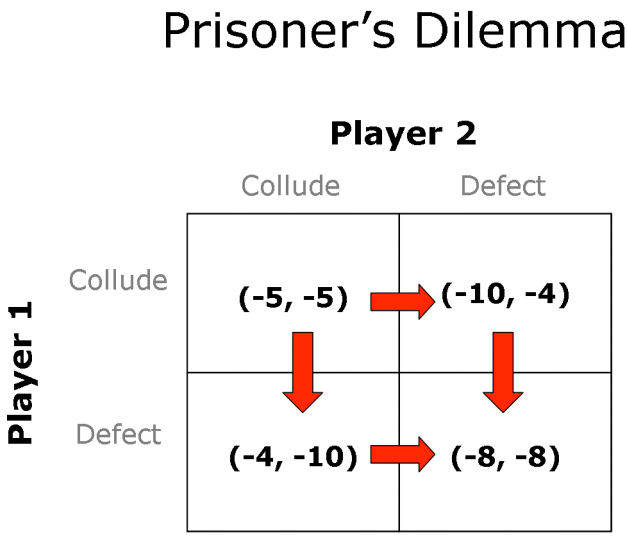

Figure 1, Prisoner's Dilemma Interaction

In addition to being a dilemma between two individuals, the Prisoner's Dilemma can also be expanded to encompass larger collective action problems (see generally Baird et al. 1994, Hardin 1971). In that case, often referred to as a Tragedy of the Commons, the dynamic is much the same as it is in each individual's interest that everybody else cooperates. However, it is also in each individual's interest to defect from the cooperation. The Tragedy of the Commons moniker comes from the concept of a shared field for the grazing of animals—a commons. It is in each farmer's general interest to limit every other farmer's animals' grazing, thus distributing the pasture evenly and maintaining it for future grazing. It is also in each farmer's individual interest to defect from the collective and overgraze his own animals thus increasing his own yield while presumably not doing enough damage to destroy the pasture. However, like in the two player Prisoner's Dilemma, if every farmer opts to defect from the collective interest and "free ride" by overgrazing his animals, it will deplete the pasture and ultimately lead to the starvation of everybody's animals. Eliminating this so-called free rider problem has been the subject of some research. For instance, it has been noted that strategic-

interaction can be used to eliminate free riders in medium sized groups, while in larger sized groups sanctions or norms are generally required (Heckathorn 1996).

Plea bargaining can be seen to work in much the same way as these collective action scenarios. Indeed, as plea bargaining is defined in this project with any self conviction made in exchange for any sort of benefit being considered a plea bargain, the typical explanation of the Prisoner's Dilemma is in fact a plea bargaining dilemma. However, in order to see why plea bargaining is generally a Prisoner's Dilemma, one must take a step back and consider the relationship between prosecutorial cost and sentence length. As shown in Figure 2, obtaining longer sentences generally costs prosecutors more.[11] However, this is not a linear relationship. Making a plea bargain allows a prosecutor to obtain a high payoff for a low investment. There is, however, a limit on the plea bargain sentence, which is necessarily lower than the limit on a possible trial sentence. While an expected trial sentence can be higher than a plea bargain sentence, trials require increased expenditure by the prosecutor. Thus, there is a point in the plea bargaining process where a prosecutor's resource expenditure becomes inefficient. That is, there is a point of maximum efficiency for a prosecutor, and increased expenditure by the prosecutor beyond this point is either wasteful, or, more likely, it corresponds to trial preparation. This point, it should also be noted, also corresponds to increased expenditure by the defendant.

It is not necessarily clear where this tradeoff occurs as it will vary from case to case. However, what is clear is that a large increase in expenditure beyond what is generally necessary for a plea bargain is necessary for a trial at which a prosecutor expects to win the largest sentence. Further, as shown in Figure 3, if the cost is combined with the prosecutor's payoff, there are two peaks corresponding with the optimal plea bargain and the optimal trial outcome.

[11] Figures 2 and 3 are highly stylized. They are simply intended to convey the intuition of the relationship between sentence length and prosecutorial expenditure.

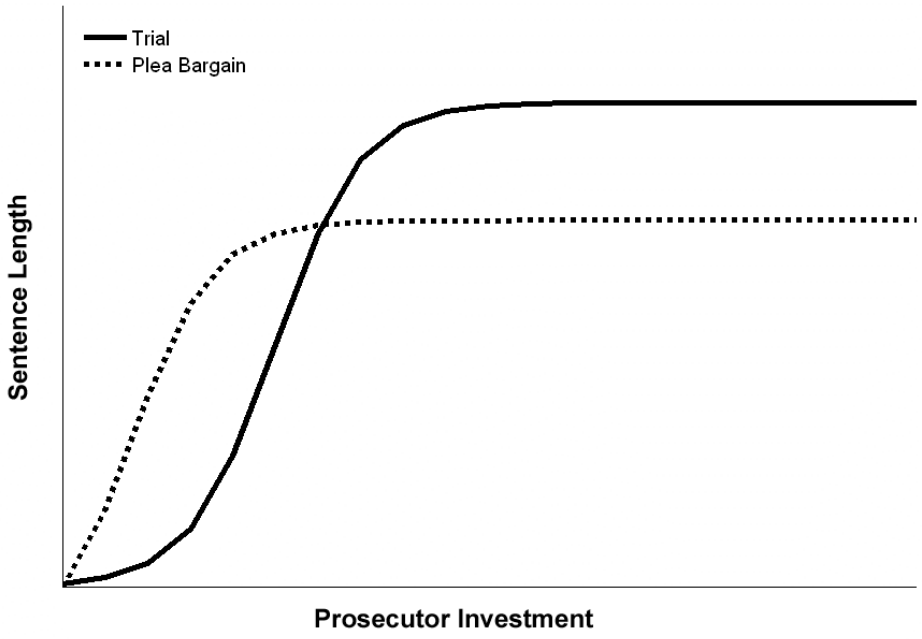

Figure 2, Cost versus Sentence for a Plea Bargain and Trial for a Prosecutor

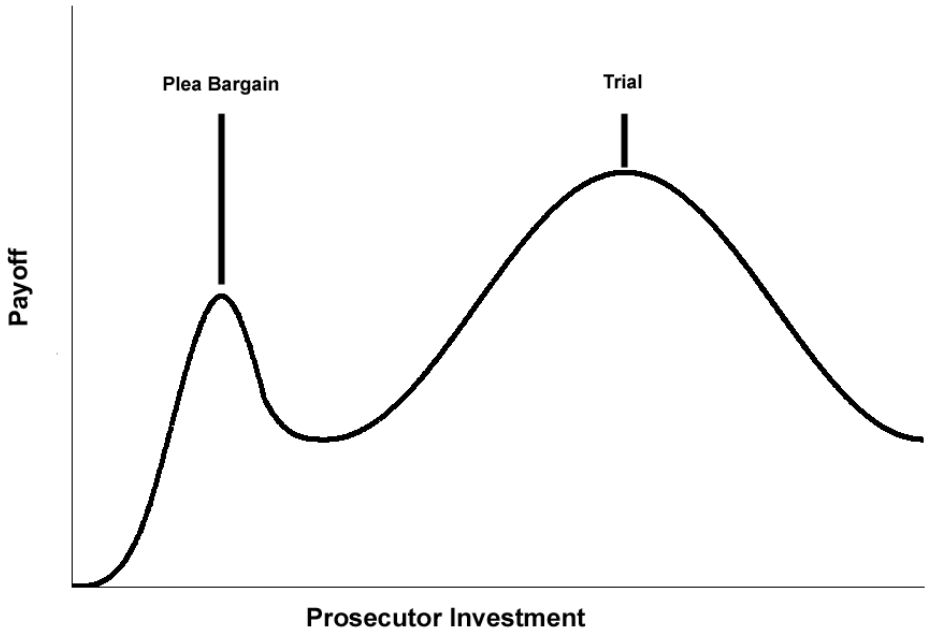

Figure 3, Prosecutorial Payoff versus Investment

Additionally, a prosecutor considers many factors when charging a defendant. These factors include the resources necessary for a conviction as well as the resources at her disposal. As such, while the cost versus sentence structure in Figure 2 holds for any given prosecution, each particular prosecution may have several functional ranges. That

is, one can assume that a prosecutor has an option to either charge high or charge low.[12] A high charge, if successfully prosecuted, will result in either a conviction for a long sentence or a plea bargain for somewhat less than the maximum sentence. A low charge in the same case, if successfully prosecuted, will similarly result in a relatively long sentence from a trial, or a slightly lower sentence from a bargain. When a prosecutor has an option, she clearly prefers the longer sentence. However, if she cannot afford to see a high charge through, and she knows that a trial will be necessary, she prefers to charge low to avoid both the cost of a trial as well as the costly, in terms of reputation, scenario of losing a case due to insufficient resources.

Thus, there is an interaction between a prosecutor and a defendant that can be modeled in simple game theoretic terms. The prosecutor must decide whether to charge high or low, and the defendant must decide whether to go to trial or to plea bargain. Whether the charge is high or low, the defendant always believes he is better off accepting a plea bargain. Indeed, as Alschuler notes, "The guilty plea system is so engineered that a recommendation of a guilty plea almost always reflects a plausible evaluation of the defendant's interests" (Alschuler 1975:1203). Since the prosecutor knows that the defendant will nearly always agree to a bargain, it is the prosecutor's best strategy to always charge high, even when she lacks the resources to actually participate in a full trial. Presumably, while a trial for a high charge is considerably more expensive than a trial for a low charge, a plea bargain for a high charge is only slightly more expensive that a plea bargain for a low charge. Thus, while a prosecutor prefers a low charge in the case where a defendant demands a trial, the prosecutor also knows that regardless of the charge, a defendant nearly always prefers a plea bargain. As such, it is nearly always a better strategy for the prosecutor to charge high and push for a plea bargain. Consequently, a high charge and a plea bargain is the single Nash equilibrium to the interaction.

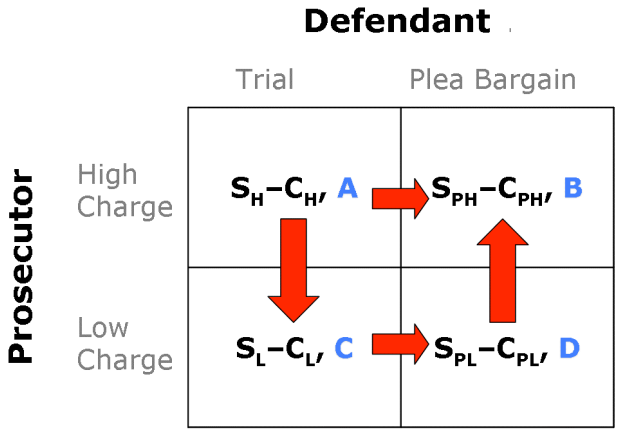

Figure 4, Prosecutor and Defendant Interaction in Normal Form

[12] This can be in the form of charging for different crimes which are more or less serious, or it can be purely semantic. For instance, the definitions of the crimes of aggravated assault and intent to kill or maim are indistinguishable from each other. Yet, they require different types of proof and carry different punishments.

This cost structure is illustrated in Figure 4. For the prosecutor, for each defendant, she must choose between charging high, and charging low. Her payoff for a trial with a high charge is the expected sentence (S_H) minus the cost of the trial (C_H). Similarly, for a low charge, her payoff is the expected sentence in the trial for the low charge (S_L) minus the cost of the trial (C_L). In the case of a plea bargain, for a high charge her payoff is (S_{PH}) minus (C_{PH}) while for a low charge her payoff is (S_{PL}) minus (C_{PL}). As explained above, if the prosecutor expects that a trial is required, her preference is to charge low as she is more interested in convictions than long sentences. The expected sentence from a trial with a high charge is higher than the expected sentence from a trial with a low charge, but the expected cost is also higher which reduces the prosecutor's ability to prosecute other defendants. Since additional prosecutions are generally worth more to the prosecutor than additional years, for the prosecutor, $S_L - C_L > S_H - C_H$.

However, in the case where a prosecutor expects a defendant to plea bargain, then the calculation is different. While a sentence for a plea bargain entered under a high charge (S_{PH}) is considerably higher than the sentence entered under a low charge (S_{PL}), the cost to the prosecutor of a plea bargain entered to a high charge (C_{PH}) is nearly the same as the cost of a plea bargain entered to a low charge (C_{PL}). Thus, in this case, $S_{PH} - C_{PH} > S_{PL} - C_{PL}$, and the prosecutor's payoff is higher for a plea bargain entered into for the higher charge.

For a defendant, regardless of the charge, a plea bargain always appears to represent a better deal, regardless of whether the prosecutor charges high or low. Indeed, as suggested by Alschuler, *supra*, prosecutors calculate plea bargain offers in order to ensure that this is the case. Thus, from the defendant's perspective, the appearance is that $B > A$, and likewise that $D > C$. As such, the defendant can nearly always be expected to plea bargain, which means that the prosecutor can charge high with little fear of this leading to large numbers of trials.

Finally, this project argues that from a defendant's perspective, $C > B$. That is, it argues that the sentence for a plea bargain to a high charge is higher than the trial sentence for a low charge. The justification for this is twofold. First, because defendants have little leverage, plea bargains generally represent a high percentage of the expected trial sentence. As Posner (2003) notes, most defendants are, in fact, guilty. Thus, for a given charge while the sentence for a plea bargain is less than for a trial, in order for a prosecutor to entice a defendant to accept a plea bargain, it need only be slightly less than the expected trial sentence times the probability of conviction, which is quite high. Second, if the expected trial sentence for the low charge were close to the trial sentence of the high charge, due to the increased resources necessary for a prosecutor to prosecute for the high charge, she would never be able to make a credible threat to bring a high charge. That is, while it is clear that the prosecutor's cost benefit analysis favors trials for low charges rather than high charges, in order for a high charge to pose a credible threat, this preference for low charges needs to be a weak one. Thus, while the differential benefit of a trial with a high charge lags behind the differential cost, the difference must be small, meaning that the sentence increase must be close to being commensurate with the cost.

This initial interaction between the prosecutor and the defendant is what creates the Prisoner's Dilemma between defendants. Consider that a prosecutor has a fixed level

of resources with which to prosecute all of her cases. She does not have enough resources to prosecute all possible defendants for the full extent possible, and in order to obtain the maximum possible payoff, she must make bargains to conserve resources. As an example, assume there are two defendants. Further, assume that the prosecutor has sufficient resources such that if she must pay for trials in both cases, that she only has sufficient resources to afford a more limited trial for each one but that she is able to afford one full trial. That is, if one defendant agrees to accept a plea bargain, or if the prosecutor simply drops one case, then she will have enough resources to try the other defendant for the higher charge. Structurally, this creates an interaction between two defendants, shown in normal form in Figure 5, with the payoff structure of a Prisoner's Dilemma where **D > C > B > A** from above.

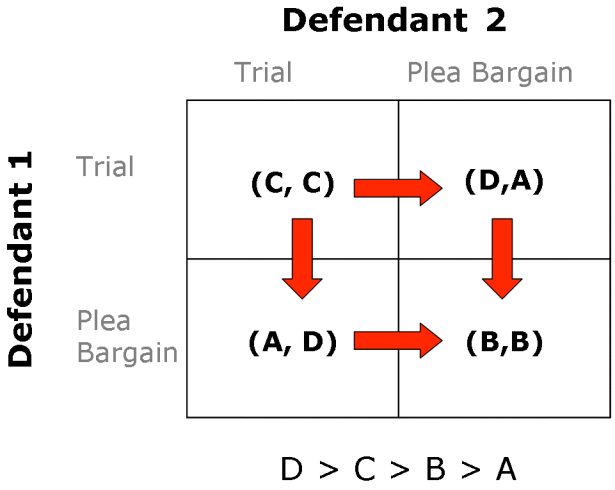

Figure 5, Prisoner's Dilemma Interaction Between Two Defendants

Like in the standard Prisoner's Dilemma, in the situation where one defendant is taking a plea bargain, for the other defendant the best option is to also accept a plea bargain as this will result in his shortest sentence. Further, if the second defendant is not plea bargaining, the first defendant's incentive is to take a plea as it leads to his shortest sentence. Here, if both defendants opt for a trial, each will receive the sentence for a low charge. This is because, in the example, the prosecutor lacks the resources to engage in two full trials. However, knowing that the other will opt for a trial, each individual defendant has an incentive to take a plea bargain for a shorter sentence. Indeed, acceptance of the plea bargain must reduce a defendant's sentence or else he would not make it. The prosecutor will then be able to use her saved resources for the prosecution of the other defendant, which allows her to afford a full trial resulting in a long high charge sentence. This gives the second defendant the incentive to also plea bargain in order to avoid the higher sentence now faced due to the prosecutor's additional resources. This, in turn, rewards the prosecutor by giving her the maximum amount of resources allowing her to extract stricter plea bargains from each defendant.

To put this in context, assume a situation where two defendants are to be charged with a crime, and that a high charge carries with it a requisite sentence of 10 years while a low charge would result in a trial sentence of 5 years. Further assume that in the case of

either a high or low charge that a plea bargain worth 80% of the original charge will be offered. Finally, it should be assumed that the prosecutor lacks the resources to commit to two full trials for high charges. In this case, assuming that each defendant expects to be convicted, each would have an incentive to plea bargain. Indeed, as noted, this is true regardless of the charge. For the first defendant, if the other defendant opts for a trial, the first defendant's best option is a plea bargain. He will be charged with the lower charge, and will be able to bargain down to his lowest possible sentence. However, this gives the second defendant the incentive to plea bargain as it lowers his sentence. Even though this is a worse outcome for the first defendant, he still is better off accepting a plea bargain. Importantly, because the prosecutor would know this, the prosecutor would be able to charge each high and extract a plea bargain to the high charge, resulting in each defendant receiving an 8 year sentence (see Figure 6).

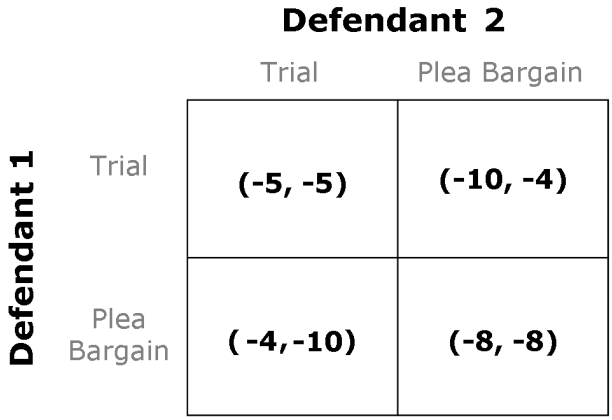

Figure 6, Prisoner's Dilemma Example Interaction

The applicability of this model is that prosecutors are always working within resource limitations. Statistically, while rates of incarceration and prosecution have increased dramatically in recent decades they still lag far behind rates of crime. As such, a prosecutor, who has limited financial resources as well as limited time, must pick and choose the cases she invests in. It is this resource limitation, and the effect that individual defendant's decisions have on other defendants that makes the criminal justice system akin to a collective action problem.

Like in many collective action problems, one defector will not change the dynamic of the interaction as a whole. Rather, it is a cascade of defectors that does this. In the plea bargaining collective action problem, nearly all of the players are already defectors. That is, each defendant is effectively up against the mass of the rest of the defendants who will all nearly always defect by pleading guilty. Thus, unlike in a free rider situation, a defendant is not free riding by defecting, but he is instead making the only reasonable play. The commons, as it were, has already been fully consumed. Each defendant is, in essence, caught in a Catch-22 in that there is no real option to collude.[13]

[13] "Would you like to see our country lose?" Major Major asked.

This structure places prosecutors in a strong position of power over defendants. It has been argued that if the various low-power actors could collude in such a situation that they might overcome the power imbalance (Simpson and Macy 2001). However, as noted, people do not generally consider defendants to be a group with collective interests. Nor do defendants likely think of themselves as such.[14] Moreover, the sheer number of defendants is overwhelming, and communication between them seems unlikely. The implication is that, whatever the mechanism, social norms, or any other sort of social organization that could break defendants out of the paradox are not likely to arise without the benefit of the law.

To put this another way, as Posner (2003) notes, plea bargaining saves resources for the prosecutor, which ultimately drives sentences up. Plea bargaining represents an enormous resource savings, and allows for large expenditures on the occasional case for which a defendant will not bargain. Indeed, this boost in resources strengthens the prosecutor's hand and increases her bargaining position in other cases by giving a defendant an unrealistically high impression of the length of sentences in the cases that do go to trial. That is, a defendant can only observe the few cases that do go to trial, not the situation where they all do. Thus, these higher sentences induce defendants to accept plea bargains by setting an artificially high standard for trial outcomes. If, on the other hand, all defendants acted collectively, each demanding a full trial, they could effectively clog the court system, leading to the minimum prison sentences in terms of man-years. In such a situation, this would force prosecutors to expend maximum resources for each trial in order to cover all of the costs of modern criminal process. However, of course, each defendant would be in a difficult bind. While this situation would presumably lead to the release of many defendants, the few that remained would have an incentive to plea bargain. That is, once a defendant was given the signal from the prosecutor that he was one of the few who was going to be prosecuted and taken to trial, his incentive structure would be to make a plea bargain in order that his sentence be reduced. This would be in his interest, as it would presumably reduce his sentence. However, collectively, it would increase the prosecutor's power by saving her resources for other cases leading to a cascading collapse of the defendants' collective action.

The multiplayer Prisoner's Dilemma explains why plea bargaining leads to high rates of incarceration. However, other that noting that Black defendants lack the resources of white defendants, which is surely important, it does not fully explain how

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"We won't lose. We've got more men, more money, and more material. There are ten million men in uniform who could replace me. Some people are getting killed and a lot more are making money and having fun. Let somebody else get killed,"
"But suppose everybody on our side felt that way."
"Then I'd certainly be a damned fool to feel any other way. Wouldn't I?"
(Heller 1955:113)

[14] Professor Michael Macy has noted in conversation that groups of arrested war protestors during the Vietnam War were able to avoid prosecution by collectively refusing to plea bargain. However, this is the proverbial exception that proves the rule. That is, in this case the defendants had a collective goal and determined that a collective payoff could be obtained if all agreed to a collective action. The defendants knew in this case that prosecuting them would be expensive, and that it was not in the prosecutor's interest to do so. Indeed, merely ending the protest was likely the only benefit the police saw in making the arrests in the first place. However, this example shows how, without a perceived collective interest, defendants are unlikely to be able to make such binding agreements with each other.

plea bargaining leads to stratification in prison populations. To understand this, one must return to the plea bargain interaction between a prosecutor and a defendant. In its most simple elucidation, this standard model of plea bargaining expects near perfect separation between guilty and innocent defendants, with the guilty always accepting a bargain, and with innocent defendants never doing so (Grossman and Katz 1983). The intuition behind this assessment is based on the idea that a defendant knows whether he is innocent or guilty,[15] and that he expects the courts to reach the correct verdict the majority of the time. When charged with a crime, a guilty defendant should rationally accept any plea offer that is lower than his assessment of his chances at trial. Similarly, an innocent defendant should not be willing to accept any offer greater than his assessed risk at trial

[15] Nearly all existing economic models of plea bargaining, and of criminal justice decision making in general, are based upon this idea. However, it is likely not true. Indeed, not only is knowing what constitutes guilt (what might be termed legal knowledge) difficult, but so is knowing what particulars might rise to the level of constituting such guilt (factual knowledge.) As an example of the difficulty of legal knowledge, the following is an actual, and not particularly difficult, question from the Multistate Bar Exam:

> Jack and Paul planned to hold up a bank. They drove to the bank in Jack's car. Jack entered while Paul remained as lookout in the car. After a few moments, Paul panicked and drove off.
>
> Jack looked over the various tellers, approached one and whispered nervously, "Just hand over the cash. Don't look around, don't make a false move—or it's your life." The teller looked at the fidgeting Jack, laughed, flipped him a dollar bill, and said, "Go on, beat it." Flustered, Jack grabbed the dollar and left.
>
> Paul's best defense to a charge of robbery would be that:
>
> (A) Jack alone entered the bank.
>
> (B) Paul withdrew, before commission of the crime, when he fled the scene.
>
> (C) Paul had no knowledge of what Jack whispered to the teller.
>
> (D) The teller was not placed in fear by Jack.

The correct answer is D. The reason is that in order to convict someone of robbery, like many crimes, the prosecution must prove that the defendant did more than simply take something. Rather, the prosecution must prove several specific elements of the crime charged. Among those for robbery is the inducement of fear in the victim. Note, however, the defendant in the question may be guilty of other crimes. This means several things. The first is that a prosecutor may originally bring a charge of robbery and than "bargain" down to a lesser charge meaning that the defendant did not get a bargain at all. Second, if a judge were to get this definition wrong, the defendant would need to be able to pay for an appeal and a trial to correct the record. Plea bargains generally cannot be appealed and thus if the defendant entered a guilty plea, he would be unable to appeal. Third, the defense attorney may be, wittingly or unwittingly, complicit with a prosecutor in that he looks like a better defense attorney if he is able to "bargain" down from robbery to a lesser charge. Finally, if the prosecutor does not budge, the defense attorney has no financial incentive to continue on to trial, meaning that the prosecutor, the defense attorney, and the judge may all be incentivized to convince the defendant to plead guilty to something that he is demonstrably not guilty of. Thus, the takeaway point of the example is that criminal law requires specialized knowledge. Most defendants without such knowledge would not necessarily know whether they were not guilty of the particular charge, and why.

times the sentence. Following the earlier example where a defendant is charged with a crime for which the requisite sentence is 10 years, assuming that a court is 90 percent likely to reach the correct result in a trial, a guilty defendant will accept offers less than 9 years, and an innocent defendant will not accept any offer greater than 1 year.[16] Thus, under such reasoning, any offer that is between 1 and 9 years will be perfectly separating of innocent and guilty defendants. Indeed, a 5 year offer only requires the court to be slightly better than a coin flip in either case. This is illustrated in Figure 7.

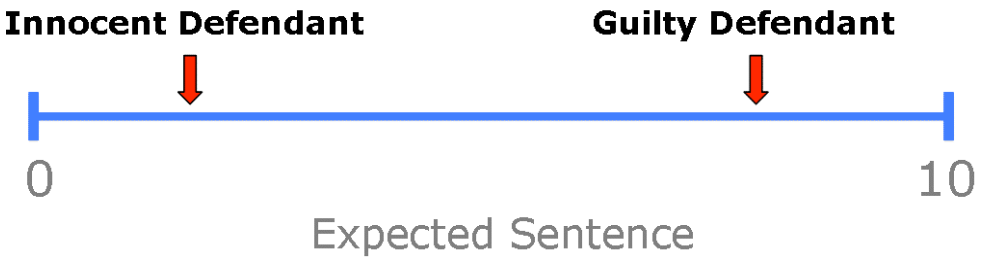

Figure 7, Basic Plea Bargaining Separation Model

To add an element of complication to this calculation, Grossman and Katz (1983) suggest that risk aversion may alter a defendant's calculus. In their analysis, they model risk aversion as how likely the defendant thinks it is that the court will reach the right decision, with risk averse defendants expecting higher sentences than non risk averse defendants, all other things being equal. In the Grossman and Katz model, risk aversion is spread randomly across defendants merely interrupting the separation – see Figure 8.

Under Grossman and Katz's model where risk aversion is random, defendants are either risk averse or risk seeking, and either guilty or innocent, resulting in four types of defendant to consider. For a guilty defendant, if he is very risk averse, then he will believe that the court's chances of convicting him are very high. This increases the sentence he is willing to accept in a bargain as he expects a higher sentence than a statistical analysis might suggest. Similarly, for an innocent defendant who is not risk averse, he has confidence in the courts, and thus expects that he will not be convicted. As such, his expected sentence, and thus what he would be willing to accept as a bargain from a prosecutor, is lower than what a statistical analysis might suggest. Neither the risk averse guilty defendant nor the risk seeking innocent defendant greatly changes the Grossman and Katz model.

[16] Note that there is no reason to think that courts error symmetrically. That is, just because there is a 90 percent chance of convicting a guilty defendant does not imply that there is a 10 percent chance of convicting an innocent one. For the sake of this example, this nuance is not important.

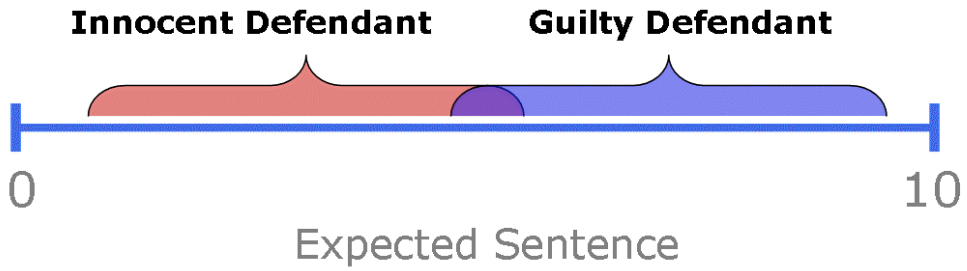

Figure 8, Plea Bargaining Separation Model with Random Risk Aversion

However, for Grossman and Katz's model, risk aversion for each type of defendant in the opposite direction does have an important effect. A guilty defendant who is not risk averse will lower his expected outcome at trial. For instance, from the above example, rather than accepting any offer lower than 9 years, as he is less and less risk averse, the level above which he will not accept a bargain gets lower and lower. If, in the example, he believes that he has only an 80 percent chance of conviction, he will only accept a bargain below 8 years. Similarly, as an innocent defendant becomes more and more risk averse, the level at which he will accept a bargain also becomes higher. Thus, if an innocent defendant believes that he is 20 percent likely to be convicted regardless of his guilt, then in the example, he may accept bargains offered up to 2 years.

As an extreme example, assume that an innocent defendant is so risk averse that he believes there is a 60 percent chance of being convicted. Further, assume that a guilty defendant is so risk seeking that he only believes there is a 40 percent chance of conviction. In this situation, a plea offer of 5 years for a crime carrying a requisite ten year sentence will induce the innocent defendant to plead guilty while the guilty defendant will reject the plea offer. That is, the example is perfectly separating, with only innocent defendants pleading guilty – see Figure 9.

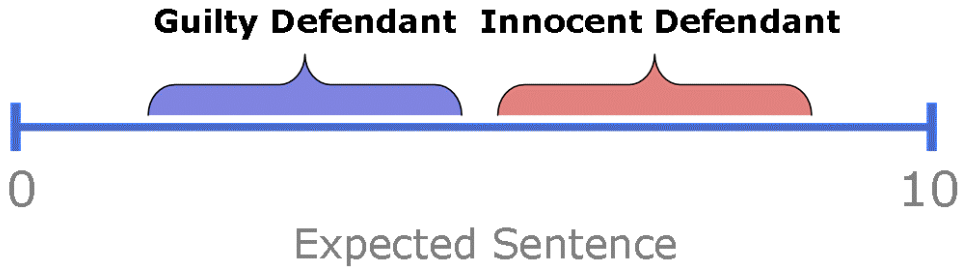

Figure 9, Plea Bargaining Separation Model with Realistic Risk Aversion

This is a stylized example, but it does illuminate the point that when the variable of a defendant's risk aversion is included, the acceptance of a plea bargain is not a perfect indicator of guilt. That is, it is not perfectly separating as some guilty defendants are likely not risk averse at all, and some innocent defendants are likely very risk averse. This means that some innocent defendants may be willing to accept offers that some guilty defendants will reject. Contrary to Grossman and Katz's initial economic intuition, one can see that, with the proper risk aversion characteristics, there may be offers that

only innocent defendants will accept. This is troubling on several levels, however, for purposes here it is important in that it shows that a defendant's subjective assessment of the world can come into play in whether he accepts a guilty plea.

Kobayashi and Lott (1996) explored a similar analysis. They note that rather than risk aversion being randomly distributed across defendants as assumed by Grossman and Katz, innocent defendants are generally more risk averse than guilty ones. The intuition for why this would be the case is rooted in the decision to engage in criminal activity. Criminal justice policy is predicated on the concept that crime should not pay (Becker 1968). That is, from a rational choice perspective, in order to prevent people from engaging in criminal activity, the costs of crime must exceed the benefits. Otherwise, simply put, it would be irrational not to be a criminal. Thus, assuming a criminal justice system where the costs of crime are higher than the benefits, anyone who does commit a crime is, by definition, more risk seeking than is a similarly situated person who does not commit a crime. In fact, there is some empirical evidence to back up this intuition. Block and Gerety (1995), for instance, administered a test used to determine a tendency to engage in risk seeking behavior to a group of students and a group of convicted felons. They found that the felons were indeed more risk seeking than the students. What this suggests, beyond the obvious concept that plea bargaining may be flawed as a determinant of guilt,[17] is that risk aversion can have a strong influence on the sort of bargain that a defendant will be willing to accept.

The model in this project takes the analysis of risk aversion one step further in considering risk aversion at the individual level. From a defendant's point of view, in calculating whether to bargain, his view of the court's reliability, as well as his calculation of costs and benefits, is subjective rather than objective. That is, how a defendant views the criminal justice process rather than how the process actually works matters more in his negotiation and ultimate plea bargain. Thus, in addition to being correlated with guilt and innocence, risk aversion, at least with regard to the criminal justice system, is also correlated with race. In particular, Black defendants are more risk averse with regard to the criminal justice system than are white defendants. As such, Black defendants are in a worse bargaining position that similarly situated white defendants, and the bargains they are able to make would be expected to be worse.

Numerous studies have shown that African Americans, other minorities, and the poor generally have a lower opinion of the criminal justice system than do middle and upper class whites. As a group, Blacks believe that the system is unfair, and that it disproportionately burdens them (See, e.g., Weitzer and Tuch 1999, Myers 1996). Since a defendant's subjective perception influences the type of plea bargain that he will be able to make, the importance of subjective perception, and of risk aversion, makes the plea bargaining system, in part, more detrimental to African American defendants than to white defendants.

Returning again to the earlier example, if a defendant believes he has a 90 percent chance of being convicted and sentenced to a 10 year sentence, he will generally be willing to accept any plea deal for less than 9 years. Further, if the defendant believes that there is only an 80 percent chance of conviction, then he will only be willing to

[17] Kobayashi and Lott consider this to be among several factors that influence how well plea bargaining determines actual guilt, arguing that other factors are more important.

accept sentences under 8 years. Finally, if there are two classes of defendants, one of whose members have an expected sentence of 9 years, while the other's members have an expected sentence of 8 years, the members of the first group will, on average, come away with longer sentences. That is, assuming that a defendant will accept any bargained sentence lower than his expected trial sentence, a defendant with a higher expected trial sentence will generally agree to a bargain for a higher sentence than a defendant with a lower expected sentence.

In this model, it is not necessarily critical whether there is actually a differential in the criminal justice system based on race. Instead, what does matter is whether there is a differential in perception based on race. This can work in several ways. First, if an African American defendant believes that the prison sentence he is likely to receive for a particular infraction is higher than what a white defendant believes he will receive, this would constitute such a difference. Second, if there is a common social belief that Blacks receive harsher sentences than whites, then a Black defendant who accepts this conventional wisdom may be willing to accept worse deals than whites, as he may assume that his costs are likely to be higher anyway. This suggests that there may be an effect even in a district without a large racial differential. Third, while an actual differential is not necessary for this argument, if there in fact is an objective differential, then this would certainly go a long way to convincing defendants that one exists. This is an obvious yet important point. Indeed, even if Blacks actually participate in crime at higher levels than whites, and even if the makeup of the criminal justice system reflects this to an extent, this could still give the impression to a particular Black defendant that his chances in the criminal justice system are comparatively low.

Finally, there is another distinction at issue here. While differential could mean that in being sentenced for a crime, similarly situated Black and white defendants are sentenced to different punishments, it could also mean that Black defendants are simply more likely to be sentenced. In other words, holding crime rates equal, if Black defendants are more likely to be sentenced at all, it could lead to the perception by a Black defendant that he is likely to fare worse in the criminal justice system because of his race. This again may seem like an obvious point to make, but it is clear that African Americans do indeed fare worse than whites and that crime rates are more or less equal across races, or at least not as divergent as the prison population would lead one to believe. Nevertheless, most commentators consider the criminal justice system to be more or less race neutral.

For a point of reference, there are numerous other models of social behavior which purport to show how small preferences can aggregate into large unwanted and or unanticipated social phenomena. Perhaps one of the most well known is the so-called Schelling (1971, 1978) model. In that model, Schelling demonstrates through a simple thought experiment how a mild preference for racially similar neighbors can aggregate into hard segregation. In this experiment, Schelling suggests placing an arrangement of coins, some dimes and some pennies, on a checkerboard. Each coin, an agent, is considered to have a preference for how many like coins are in its immediate surroundings. Coins whose “neighborhoods” stray from the preferred mix are moved to the nearest empty square meeting the agent’s preference criteria. In this model, even if

the preference is "moderate"[18] in that the agent only wants a minimum of 1/3 of the immediate neighbors to be the same, nearly every initial arrangement of coins will lead to segregated neighborhoods.

To understand how differences in perception can aggregate in this project's model, one might consider that there are four possible groups a defendant can be in. First, for the sake of simplicity, a defendant either believes that he is innocent, or that he is guilty. Second, he can either believe that he will be treated fairly by the criminal justice system, or he may believe that he is likely to be treated unfairly by the criminal justice system. Thus, there are four permutations of defendants to consider, shown in Figure 10.[19] If one breaks down which defendants occupy each category, a pattern emerges whereby, holding other things equal, Black defendants are more likely than white defendants to plea bargain, and are indeed likely to reach worse bargains.

	White	Black
Innocent	**Risk Averse** **Confident in CJ** **(no bargain)**	**Risk Averse** **Not Confident in CJ** **(bargain unclear)**
Guilty	**Risk Seeking** **Confident in CJ** **(bargain unclear)**	**Risk Seeking** **Not Confident in CJ** **(bargain)**

Figure 10, Comparison of Confidence in the Criminal Justice System

To begin, innocent whites, have little outside incentive to plea bargain. A white defendant who believes himself to be innocent has confidence that the criminal justice system will work to his advantage, and he is unlikely to accept a plea bargain. Interestingly, this is in accord with most plea bargaining models (See Grossman and Katz 1983). On the other side of the equation, a guilty Black defendant has every incentive to bargain. In accord with the economic models, he believes he will be found guilty at trial. He also believes that the system is stacked against him. As such, any concession he can get in exchange for a guilty plea likely lowers his expected sentence from what might be received at trial.

However, the two other categories are more interesting. First, for a guilty white defendant, there are incentives cutting both directions. While he considers himself guilty,

[18] Moderate in Schelling's words. One might consider that any preference for living near people of a certain race is not moderate.
[19] Black and innocent, Black and guilty, white and innocent, and white and guilty.

he also is more likely to be a risk taker. Thus, he may choose not to plea bargain hoping for a win at trial. However, even if he does plea bargain, he is likely able to win greater concessions from prosecutors than a Black defendant who is guilty because he is in a better bargaining position to begin with. That is, a white defendant has more faith in the criminal justice system that he will receive a fair trial, and thus he believes that it takes more than simply guilt to be found guilty. It takes a trial with evidence which is honest, fair, and comports with principles of justice and due process. Thus, this belief puts the white defendant in a relatively strong bargaining position making whether he will bargain unclear.

Finally, the case for an innocent Black defendant is also not quite clear. As with innocent whites, an innocent Black defendant is also pushed to not bargain due to the expectation of wining at trial. However, several factors mitigate against this. First, as discussed, there is a cultural bias against the criminal justice system among African Americans which suggests that a Black defendant will likely expect the worst. Additionally, there is a likelihood of risk aversion. How these factors might balance is impossible to predict. However, what is predictable is that an innocent Black defendant is more likely than a similarly situated innocent white one to accept a guilty plea. Further, when compared against an innocent white defendant who does accept a guilty plea, he is comparatively likely to accept a worse bargain.

The contention that differential bargaining power exists, or that it is tied to race, is not new. In a 1991 study, for instance, Ayres found that when purchasing cars, after bargaining Blacks paid substantially higher prices that whites (Ayres 1991). In that study, Black and white testers approached car salespeople in Chicago and attempted to bargain for the best possible purchase price. On average, while the best price offered to white males was approximately $360 above dealer cost, the best price offered to Black males was $780 over cost.[20] Indeed, even before any bargaining took place, the initial offers offered to Black men were nearly twice as high as the initial offers made to white men ($1534 over cost versus $818.) Plea bargaining is not the same as purchasing a car, but the example is illustrative that a person, a prosecutors or a car dealer, will take advantage of the best bargain he can make. When the person he is bargaining with is in a relatively weaker position, this position of power allows him to increases his own payoff.

Next, it is necessary to return to the prosecutor's side of the bargain. As mentioned previously, a prosecutor's incentive is to maximize convictions while minimizing cost. The Prisoner's Dilemma discussion above explained why it is in a prosecutor's interest to pursue plea bargains at all. For a variety of reasons, it is also more cost effective for a prosecutor to pursue cases against Black defendants than against white ones. Due to the lower socio-economic status of Blacks with respect to whites, a Black defendant's expected future earnings are relatively lower, meaning that the cost of a conviction for a Black defendant, in absolute terms, is generally lower than for a white defendant. Moreover, because the Blacks are so much more likely to be prosecuted and convicted than whites, the perceived stigma and cost for a Black defendant is lower than for a similarly situated white defendant. Additionally, due to the lower expectations of Black defendants, a prosecutor is able to reach better deals, from her perspective, for less

[20] White women faired slightly better than Black men, paying $500 over cost while Black women faired worst of all being asked to pay nearly $1240 over the dealer's cost.

cost against Black defendants than against white defendants. That is, the conviction of a white defendant costs a prosecutor more than the conviction of a similarly situated Black defendant.

Because of their lower socio-economic status, Black defendants lack the same resources that white defendants have to mount a competent defense. However, it is the case that public defenders are free for indigent defendants. Additionally, private attorneys have incentives that push them toward making deals rather than taking cases to trial (Alschuler 1975). Both of these facts would seem to suggest that indigent defendants could mount as high quality of a defense as wealthier defendants. However, public defenders are relatively overworked, and while private attorneys have incentives to push for plea bargains, they have incentives that push them to make good bargains as well as it improves their reputation as attorneys. Moreover, a defense involves more resources than just attorneys' fees, such as paying for research, witnesses, etc. A disadvantage in covering these costs results in a disadvantage in bargaining power.

For an individual prosecutor, it is likely impossible to make comparisons across cases. That some defendants will drive harder bargains than others would not necessarily suggest to a prosecutor a systematic problem. It is a curious aspect of this model that what seems like a race neutral system on an interactional level can lead to such disparity. While a prosecutor is likely evaluating cases individually, in the aggregate her incentives likely lead to the disproportionate prosecution of African American defendants. Plea bargaining lowers the transaction cost of most prosecutions, and it generally lowers the transaction cost of prosecuting a Black defendant more than for a white one. Without plea bargaining to alter the cost structure, expensive prosecutions would be expected to stay expensive while inexpensive prosecutions would likely become more expensive. In the absence of plea bargaining a prosecutor would need to reallocate resources toward more important cases.

As a final piece of the model, it is important to consider the aggregation and feedback of the differential decision making dynamic explored above. The model, with differential decision making along racial lines is enough to lead to a racial imbalance in prisons. However, if one considers that the aggregation of decisions will feedback, influencing the next round of decisions, the process will accelerate. As differential plea bargains begin to result in differentials in prisons, this information will influence how future defendants make decisions. Western (2006: 29) notes, "Not only did incarceration become common among young black men at the end of the 1990s, its prevalence exceeded that of the other life events we usually associate with passage through the life course." That is, for young Black men, prison became a normal part of life. Indeed, for the rest of America, prison *for* young Black men became a normal part of life. Further, due to its ubiquity, plea bargaining has become the expected method of case disposition for all parties involved. Judges, prosecutors, defense attorneys, and defendants all know how the system works, and the system involves a plea bargain.

In the United States there is a political will to incarcerate large numbers of people (Blumstein 1988). There are many reasons for this, but for many commentators it ultimately hinges on the political climate that began in the 1970s. While the change in political tone is important for understanding the rise in incarceration rates, without plea bargaining as a mechanism to bring it about, the political will would have been unable to

create so drastic a change in the prison population. In essence, while the political will to incarcerate represents the *mens rea*, the mental state, for mass incarceration, plea bargaining is the *actus reus*, the physical act of carrying it out.

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