SENTENCING IN CONTEXT: A MULTILEVEL ANALYSIS

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Criminal sentencing is, along with arresting and prosecuting, among the most important of formal social control decisions. In this study we use hierarchical modeling to test hypotheses about contextual level influences and cross level interaction effects on local court decisions. Most of the explanatory "action," our analysis shows, is at the individual case level in criminal sentencing. We also find evidence that local contextual features—such as court organizational culture, court caseload pressure, and racial and ethnic composition—affect sentencing outcomes, either directly or in interaction with individual factors. We conclude by discussing theoretical implications of our findings, and how our study points out some dilemmas among civil rights, local autonomy and organizational realities of criminal courts.

The distinctive organization and legal culture of the local court can foster distinctive substantive rationalities that shape the nature of sentencing decisions (Savelsberg, 1992; Ulmer and Kramer, 1996). Put differently, both the level of and the criteria for punishing criminal defendants vary, or at least can vary, from place to place (see Ulmer, 1997; Ulmer and Kramer, 1998; Kautt, 2002). The possibility of such a justice system presents a dilemma: on the one hand, fundamental civil rights issues, on the other, notions of democracy. If the sentence one receives and the grounds for that sentence depend on location, then the notions of equal justice that underlie most Western legal systems may be undermined. On the other hand, local autonomy and decentralized government are also valued features of American democratic philosophy, and are certainly central features of American criminal justice (Cole and Smith, 1998).

Criminal sentencing can also reproduce and reinforce existing racial or economic inequalities. A multilevel analysis of individual and contextual variations in sentencing provides an opportunity to test hypotheses derived from conflict theories, which predict that social control institutions are more punitive in the face of economically threatening populations. Such an analysis could also test the hypothesis that criminal punishment disadvantages minority (black or Hispanic) citizens, and thus reproduces and reinforces racial and ethnic disadvantage and inequality in the larger society.

Along with the decisions to arrest and prosecute, criminal sentencing is among the most important of formal social control decisions. However, as Mears and Field (2000) point out, "further theoretical development is needed linking studies of macrolevel and microlevel variation in sanctioning." Examining contextual variation in criminal punishments contributes to our understanding of how formal social control is embedded in and shaped by local environments. Unfortunately, there have been few such efforts—an important gap in criminological and criminal justice literature (see Sampson and Lauritsen, 1997). We simultaneously examine aggregate and individual level influences (as well as cross level interactions) on local court decisions to incarcerate criminal defendants, and if incarceration is meted out, on the length of sentence, using hierarchical modeling methods appropriate for multilevel data analysis.

EXISTING RESEARCH

The effects of legal, case processing and extralegal variables on sentencing have been studied extensively at the individual case level (for definitive reviews, see Spohn, 2000; Zatz, 2000; Steffensmeier and DeMuth, 2000). These and other formal social control processes and outcomes have also been investigated before, but such studies have been limited in at least one of three ways. First, the majority are limited to one level of analysis, individual sentencing cases (Nardulli et al., 1988; Albonetti, 1991; Steffensmeier, Ulmer and Kramer, 1998; Engen and Gainey, 2000; Steffensmeier and DeMuth, 2000) or aggregate jurisdictions (Bridges and Crutchfield, 1988; Engen and Steen, 2000), and do not assess individual and contextual influences simultaneously. They therefore cannot tell us the relative importance of one or the other.

Second, the relatively few published studies that do assess both simultaneously typically use traditional OLS or logistic regression techniques, which are inappropriate for multilevel data (Myers and Talarico, 1987; Steffensmeier et al., 1993; Ulmer 1997; Kramer and Ulmer, 1996). Such analyses risk misestimating the role of either contextual or individual factors or both (Bryk and Raudenbush, 1992).

Third, a number of other studies take what Britt (2000) calls the cross-jurisdictional approach. This approach compares a relatively small number of jurisdictional contexts with each other, either by comparing the results of separate regression models for each jurisdiction, or by including dummy variables for each jurisdiction in regression models (Nardulli et al., 1988; Dixon, 1995; Ulmer and Kramer, 1996; Albonetti, 1997, 1998; Ulmer, 1997; Spohn and Holleran, 2000; Steffensmeier and DeMuth, 2001). While often useful and informative, this approach has two weaknesses: (1) it precludes broad, large-scale comparisons across more than a few jurisdictional contexts and (2) simply comparing the effects of jurisdictional dummy variables on sentencing outcomes does not tell us anything about the specific social or organizational features of jurisdictional contexts that might condition variation in sentencing. This problem is mitigated, however, when such studies also rely on ethnographic data (Nardulli et al., 1988; Nagel and Schulhofer, 1992; Ulmer, 1997; Ulmer and Kramer, 1996).

We know of only two published studies in the literature, by Britt (2000) and Kautt (2002), that examine multilevel influences on sentencing simultaneously, and that use statistical methods appropriate for multilevel data (HLM). These two pioneering studies made valuable methodological and theoretical contributions, but this analysis goes further in several key ways.

Using HLM techniques Paula Kautt (2002) analyzed federal drug offenses and examined influences on sentence lengths at three levels: U.S. circuit, U.S. district and individual. She found that most of the variation was explained at the case level, but much also at the district level (less so for the circuit level). The effects of all individual case level factors and offender characteristics on sentence length significantly varied by federal district. The main district level contextual effects on sentence length involved two aggregate case processing factors—rates of substantial assistance departure and guideline compliance. Our analysis differs from Kautt's (2002) in that it focuses on state rather than federal sentencing, but we also extend the investigation of multilevel effects on sentencing in several significant ways. We focus on a wide array of offenses, not just drug offenses. We include more and different social contextual variables of our court jurisdictions. We examine both incarceration and sentence length as dependent variables; Kautt of necessity focused only on sentence length. We develop several theoretically derived hypotheses about particular kinds of contextual effects in addition to examining potentially important cross level interactions.

Chester Britt's (2000) study specifically focused on contextual variation in the effect of race on sentencing decisions, using sentencing data from Pennsylvania from 1991 to 1994. Our paper extends his analysis in three crucial ways. First, our focus is much broader; whereas Britt focused on

variations in the effects of race/ethnicity across jurisdictions, we examine a wide variety of direct contextual effects and cross level interactions on sentencing decisions. Second, we include more extensive local contextual measures (such as court characteristics). Third, we use more recent (1997–1999) sentencing and contextual data from Pennsylvania, and thus capture potential changes in sentencing patterns and the social environment of local courts since the early 1990s.

COURT COMMUNITIES AND THEIR EMBEDDED FOCAL CONCERNS

According to Dixon (1995:1158), "the predominant rationality in . . . sentencing varies across courts diverging in . . . judicial and prosecutorial activities." In line with this view is the court community perspective, which views courts as communities (Eisenstein et al. 1988) or distinctive social worlds (Ulmer 1997) based on participants' shared workplace, interdependent working relations between key sponsoring agencies (prosecutor's office, bench, defense bar) and distinctive legal and organizational cultures. These local cultures shape formal and informal case processing and sentencing norms, and thus produce variation in case processing and sentencing outcomes (see Eisenstein et al., 1988; Ulmer and Kramer, 1996, 1998; Ulmer, 1997; Dixon, 1995). These local court communities are said to foster their own substantive rationalities (Savelsberg, 1992; Ulmer and Kramer, 1996), which shape sentencing outcomes and processes at least as much as formal policies and legal structures (see also Kautt, 2002). For example, local district attorney's offices vary according to organizational type and prosecutorial style, the judges' bench varies in terms of ideology, consensus and relations with prosecutors, and local defense bars vary in their adversarial vigor, resources, level of experience and relations with prosecutors and judges (Flemming et al., 1992; Ulmer and Kramer, 1998). Such variations are especially likely in states where judges and prosecutors are elected locally, such as Pennsylvania. Furthermore, court communities typically have locally distinctive, informal and ever-evolving case processing and sentencing norms, or "going rates" (Eisenstein et al., 1988; Ulmer, 1997). These going rates often provide members of courtroom workgroups with "templates" for case processing strategies, typical plea bargaining terms and sentences. The court community perspective predicts that all of these factors lead to significant interjurisdictional variation in sentencing.

As Kautt (2002:642) puts it, the embeddedness of sentencing law, policies and processes in the social worlds of court communities "suggests that the impact of case level factors should be conditioned by the characteristics of the court in which a case is adjudicated." Thus, the court

community perspective implies not only that sentence severity will vary across courts, but also that the effects of key predictors will also vary. This is because sentencing processes and workgroup members' interpretations of sentencing criteria, such as focal concerns of sentencing (Steffensmeier et al., 1998), are embedded in court community culture and interpersonal and interorganizational relationships (Ulmer and Kramer, 1998).

One particular variable hypothesized to be critical is jurisdiction size, because size is said to be associated with distinctive organizational and cultural features of court communities, and thus court decisions like conviction patterns and sentencing (see Eisenstein et al., 1988:285; Ulmer, 1997). In particular, research in the court community/social worlds tradition consistently finds that sentencing severity is inversely related to court community size (Ulmer, 1997; Kramer and Ulmer, 2002). The court community perspective predicts that sentencing will be relatively less severe in large urban court communities in particular (Eisenstein et al., 1988). This is said to be caused by several factors directly related to large court community size: a relatively high degree of autonomy of the court community from external controls from other community institutions; relatively low public visibility of routine case processing matters and sentences.[1] Also, the amount and diversity of social deviance in general tend to be greater in large urban areas, and this may produce more tolerance and less punitiveness (Eisenstein et al., 1988:278–285).

Local electoral politics is another important factor that plays a hand in sentencing: Judges and prosecutors are elected by local popular vote. From the court community perspective, we therefore derive four hypotheses:

1. Sentencing severity will vary significantly between counties.
2. The effects of key predictors will vary significantly across counties.
3. County size will be negatively related to sentencing severity.
4. Counties with more conservative political electorates will exhibit more severe sentencing.

Focal concerns theory emphasizes particular kinds of substantive rationalities (Savelsberg, 1992) at work in sentencing decisions, which are in turn embedded in the culture and organization of court communities. In addition, focal concerns theory integrates key insights from other important theories of criminal justice decisionmaking. The roots of this theory were articulated by Steffensmeier and Steffensmeier (1979), Steffensmeier (1980; see also Wheeler, Weisburd and Bode, 1982) and then expanded by Steffensmeier, Kramer and Streifel (1993), Ulmer

1. This is not true in nonroutine, sensational cases, which can make court community activities highly visible in large urban areas.

(1997), Steffensmeier, Ulmer and Kramer (1998), and Steffensmeier and DeMuth (2000, 2001). Focal concerns theory also incorporates Albonetti's (1986) uncertainty avoidance theory of criminal case processing and her causal attribution theory of judicial discretion (1991).[2] According to Albonetti (1991), sentencing reflects the use of bounded rationality (March and Simon, 1958) in which court actors make highly consequential decisions with insufficient information, which produces uncertainty. In some cases there is little definitive information on the background and character of the defendant (though this lack of information is often alleviated by presentence reports, negotiated plea agreements or information brought out at trial). More important, even when more extensive information is available, the risk and seriousness of recidivism is never fully predictable, and defendant character is never fully knowable. Also, sometimes judges and prosecutors cannot digest the information they do have at their disposal. According to focal concerns theory, judges and other court community actors therefore make situational imputations about defendants' character and expected future behavior, and assess the implications of these imputed characteristics in terms of three focal concerns: defendant blameworthiness, defendant dangerousness and community protection, and practical constraints and consequences connected to the punishment decision. Focal concerns theory argues that court actors define defendants with respect to these concerns and thus determine sentencing decisions. Reliance on the three concerns is said to be universal, but the meaning, emphasis and interpretation of them is local.

Two that particularly interest us are community protection/perceived offender dangerousness and the practical constraints connected to sentencing decisions. They seem to be the most likely points through which court community contextual features might influence individual level sentencing decisions. Practical constraints invokes issues of case processing efficiency and local jail capacity. Community protection

2. From Albonetti's work, focal concerns theory draws on the notion of case processing and sentencing as a bounded rationality process partially driven by uncertainty avoidance, and the notion that judges (and other court actors) draw on defendant status-based attributions in sentencing, a process also described by Steffensmeier (1980) as well as by symbolic interactionist literature on status and identity in situational interaction (see Ulmer, 1997). Focal concerns theory expands on Albonetti's ideas by describing these bounded rationality and status-based attribution processes as being embedded in court community culture and network relationships. In addition, while Albonetti's (1991) causal attribution theory focuses on the sentencing goal of defendant rehabilitative potential, focal concerns emphasizes perceived blameworthiness, community protection (which could include rehabilitation) and practical constraints/consequences as equally important sentencing goals.

invokes the notion of racial threat and the relative size of minority populations, which may be perceived as more of a crime threat by court actors.

PRACTICAL CONSTRAINTS: JAIL CAPACITY

Jurisdictional correctional resources such as jail capacity may be a potential practical constraint that influences sentencing (see also Peterson and Hagan, 1984:68). Counties with plentiful jail space would be more likely to incarcerate offenders than counties with smaller jail capacity, other things being equal. Of course, defendants may be sentenced to either local county jails or state prison. While local jail capacity would be expected to affect those incarcerations, state prison capacity would be a constant for all counties in a state. In Pennsylvania, approximately 79 percent of the incarceration sentences are for county jails, so we expect jail capacity to be an important influence on the overall probability of incarceration.

Furthermore, in the name of protection of the community, one would expect that local courts would conserve their jail space for more serious, more violent offenders, and those with lengthier criminal histories. Offense severity, violent offenses and prior criminal records might therefore be more influential on incarceration decisions in counties with more constrained jail resources. Thus three additional hypotheses:

5. Local jail capacity will be a practical constraint that is positively related to the odds of incarceration.
6. Offense severity and violent offenses will have a greater effect on incarceration odds in counties with more constrained (lower) local jail capacity.
7. Prior record will have a greater effect on incarceration odds in counties with more constrained (lower) local jail capacity.

PRACTICAL CONSTRAINTS: ORGANIZATIONAL EFFICIENCY

Another important practical constraint on sentencing is the need to process cases efficiently, or at least to avoid case backlogs (Engen and Steen 2000; Dixon, 1995). The principal way of achieving this is to induce guilty pleas (Engen and Steen, 2000:1363). One can therefore expect a fairly uniform pattern of more lenient sentences accompanying guilty pleas and more severe sentences accompanying trials (at both aggregate and individual levels) across courts of all types.

However, this "trial penalty" is probably not uniform across court communities. Plea/trial sentencing differences may be aggravated by court caseload pressure (Dixon, 1995) as well as by community culture and

going rates. The greater the caseload to personnel ratio, the greater would be the need to move cases efficiently, the greater the need to induce guilty pleas and the greater the potential guilty plea/trial disparity (see Dixon, 1995). Trial rates may also be related to sentencing differences between guilty pleas and trials, and existing research does not provide enough guidance on this issue. Trial rates may be negatively related to plea/trial sentencing disparity. That is, low trial rates may be found among jurisdictions with high sentencing costs for defendants who go to trial and lose. These high costs would tend to deter defendants (and especially defense attorneys) from taking cases to trial. Conversely, higher trial rates are likely found among jurisdictions with comparatively lower sentencing costs of going to trial and losing.

Organizational efficiency therefore suggests interaction effects between caseload pressure and mode of conviction (whether someone pled guilty or was convicted by trial), and trial rate and mode of conviction. "Trial penalties" would be relatively greater in jurisdictions with greater caseload pressure, and greater in jurisdictions with lower trial rates. Thus three more hypotheses:

8. County caseload pressure will be negatively related to sentence severity.
9. The positive effect of trial conviction on sentence severity will be greater in counties that have heavier caseload pressure.
10. The positive effect of trial conviction on sentence severity will be greater in counties with lower trial rates.

SENTENCING AND RACIALIZED THREAT

The court community and focal concerns perspectives are also compatible with racial group threat theory (Blumer, 1955; Bobo and Hutchings, 1996; Steffensmeier and DeMuth, 2000, 2001; Bridges and Crutchfield, 1988). Bonilla-Silva (1997) argues that in racialized social systems such as the United States, racial ideologies and asymmetrical power relations between races are pervasive and deeply rooted in social structure. Obviously, as a central mechanism of formal social control, the criminal justice system would also be an important arena of racialized interaction.

Thus, criminal law and punishment may be tools for containing racial or ethnic minority groups defined as threatening by those in positions of privilege and power. In the contemporary United States, blacks and Hispanics tend to be objects of crime fear and are seen as particularly threatening (Steffensmeier and Demuth, 2001; Britt, 2000; Spohn and Holleran, 2000; Spohn, 2000). Racial ideology and stereotypes can be the "organizational map that guides actions of racial actors in society"

(Bonilla-Silva, 1997:474). The dominant (white) racial group might be affected by and reinforce racial ideologies and stereotypes while rationally pursuing other goals or interests, even ones not otherwise directly connected to race/ethnicity. Racially charged decisions and actions therefore often become "embedded in normal operations of institutions" (Bonilla-Silva, 1997:476). One example of such processes might be the everyday sentencing decisions of courts, an institution where the dominant actors (judges, prosecutors) are white in the contemporary United States.[3] Court actors' interpretations and assessments of focal concerns such as perceived dangerousness and blameworthiness, as well as the salience of relevant practical constraints and consequences, might be influenced by race, ethnicity and gender at the individual level (Steffensmeier et al., 1998, Spohn, 2000, Engen et al., 2003). For example, both Albonetti's (1991) attribution/uncertainty avoidance framework and focal concerns theory predict that some judges may perceive black or Hispanic males as particularly dangerous or lacking much potential for rehabilitation compared to other defendants, and sentence accordingly. Judges may also perceive that certain types of offenders can handle imprisonment better than others (Kramer and Steffensmeier, 1993).

At the contextual level, racial group threat theory clearly predicts that the percent of the local black and/or Hispanic population will be positively associated with sentencing severity. In particular, we highlight the possible connection implied in the literature between black and Hispanic population size, white fear of minority crime and protection of the community from offenders perceived as dangerous.

Furthermore, group threat theory also implies a cross level interaction effect. Black or Hispanic defendants may be sentenced more severely in contexts with larger black or Hispanic populations. That is, they might be seen as especially threatening if they are taken to represent white fears of minority criminals, and thus stereotypically represent "dangerous offenders." The effect of defendant race or ethnicity might thus be conditioned by the county proportions of blacks or Hispanics.

Little research exists on the role of racial or ethnic composition in individual sentencing decisions. Ulmer (1997) found no direct relationship between individual sentencing decisions and the percentage of blacks in a county, but Myers and Talarico (1987) found that all offenders were more likely to be imprisoned in jurisdictions with larger black populations (both studies used traditional OLS regression methods). At the aggregate level, Bridges and Crutchfield (1988) found that black percentage of jurisdictional population was positively related to black/white disparity in

3. This is also true of Pennsylvania where minority judges constitute less than 7 percent of all trial judges.

aggregate sentencing severity. On the other hand, Britt (2000) found that black percentage was unrelated to incarceration odds and modestly negatively related to sentence length, and that black percentage did not condition the effect of offender race on sentencing. Kautt (2002) found that the racial and ethnic composition of district court jurisdictions did not substantially effect sentencing among federal drug offenders. Clearly, these mixed findings warrant further examination. From racial group threat theory, then, we derive two more hypotheses:

11. The county level concentration of blacks and Hispanics will be positively related to sentencing severity.
12. Minority concentration and defendant race/ethnicity will interact such that blacks and Hispanics will be sentenced more harshly in contexts with greater concentrations of blacks or Hispanics, respectively.

Though our conceptual focus is on court community contextual effects and their interactions across levels (cross level interaction effects), individual case level influences on sentencing are crucial in their own right. Focal concerns and other theoretical perspectives agree on the effects of various individual level factors such as offense severity, prior record, type of offense, mode of conviction, race/ethnicity, gender and age, and so forth (Steffensmeier et al., 1998; Albonetti 1991, 1997; Dixon, 1995). There is also wide agreement that these kinds of factors are important in the empirical sentencing literature (see reviews by Spohn 2000; Zatz, 2000). Therefore we also include a number of individual case level factors widely recognized to be important in models of sentencing outcomes. We detail these in our discussion of the data below.

RESEARCH CONTEXT

Pennsylvania is a particularly interesting and valuable jurisdiction for examining organizational social contexts as they relate to criminal sentencing. The commonwealth has operated under a sentencing guideline system since 1982, so it presents a potentially strict test for the presence and strength of contextual variation in sentencing relative to nonguideline jurisdictions. Sentencing guidelines quantify and standardize sentencing decision criteria (offense severity and prior record, for example), mandate court consideration of these criteria, and recommend a uniform matrix of sentence ranges (see Kramer and Ulmer, 2002 for details). This kind of sentencing guidelines system, and the fact that it has been in place for more than 20 years, may therefore represent a force for uniformity among jurisdictions.

However, Pennsylvania is also characterized by wide variations in local contextual characteristics. For example, Pennsylvania is home to two of

the largest cities in the United States (Philadelphia and Pittsburgh), but also home to numerous medium-sized cities (Harrisburg, Erie, Reading, Scranton, Allentown) and a large number of small rural counties. The state is politically diverse as well, with the eastern and western portions tending to have a stronger organized labor presence, more racial, ethnic, religious and cultural diversity, and a higher percent of voters registered as Democratic. The central counties tend to be more conservative, less diverse, and dominated by Republicans. Political party composition is potentially important, because both judges and district attorneys in Pennsylvania are selected by election. Finally, Pennsylvania's counties vary widely in terms of the prosperity and resources of their populations, local governmental resources, crime rates, and racial and ethnic diversity.

DATA AND METHODS

We address our various theoretical hypotheses using a combination of individual level sentencing data and county level contextual data from county criminal trial courts in Pennsylvania. The criminal sentencing data we employ span three recent years (1997–1999) and come from the Pennsylvania Commission on Sentencing (PCS). By law the PCS is required to collect information on all misdemeanors and felonies sentenced in the state. These data contain detailed information on various legally prescribed sentencing factors, such as the severity and type of offense, as well as several legally proscribed factors, such as the race, gender and age of the defendant. In addition, detailed information is included regarding case-specific attributes, such as the mode of conviction and the application of mandatory minimum sentences. We supplemented these individual level data with contextual data from the U.S. Census, Uniform Crime Reports and the 1999 County and City Extra. Overall, this final data set provides a rich and detailed body of information that is well suited for examining the influences of theoretically important sentencing factors at both the individual and contextual levels. Cases in this analysis were limited to the most serious offense per judicial transaction and to those cases sentenced under the 1997 guidelines.

DEPENDENT VARIABLES

Sentencing can be broken down into a two-stage decision making process (Wheeler et al., 1982): first, whether to incarcerate, and, second, length of the possible incarceration. Some researchers use tobit analysis to analyze both sentence length and incarceration decisions together (Bushway and Piehl, 2001; Albonetti, 1998). We do not do so here for three reasons. First, our preliminary and later analyses indicate that various predictors differentially predict incarceration and length (race,

drug offenses, property offenses, court caseload, jail space, percent property crime and percent drug crime). Second, hypotheses 5, 6 and 7 specify relationships between county jail space and incarceration but not sentence length, requiring us to separately model these two outcomes. Third, to our knowledge, tobit analysis cannot yet be accommodated in the hierarchical modeling format. In addition, prior research on Pennsylvania sentencing has shown that incarceration decisions and length differ, sometimes considerably, in the degree to which extra-legal variables affect them (Ulmer, 1997).

We therefore separately model these two distinct sentencing decisions, first examining the probability that different offenders receive an incarceration sentence (the in/out incarceration decision), and then examining the number of months those incarcerated are sentenced (the sentence length decision). For the in/out decision, incarceration was coded 1 if the offender were sentenced to any length of confinement in a county jail or state prison and coded 0 if they were sentenced to any combination of nonincarceration options (probation, restitution, suspended sentence, and so forth). The sentence length variable, then, was coded to equal the minimum number of months of incarceration the offender was sentenced to serve.[4] The sentence length models consist of only those cases that received an incarceration sentence. To account for this, we included a selection bias correction factor in our models of sentence length consisting of the "hazard rate," or the risk of not being selected into the incarcerated population (see Berk 1983, Peterson and Hagan 1984). That this selection bias correction is appropriate is evidenced by the fact that several variables differentially affect incarceration and its length.

INDEPENDENT VARIABLES

We employ several individual case and contextual level factors as independent variables. The legally relevant sentencing variables in these analyses are the severity of the current offense, the offense type, the prior criminality of the offender, the presumptive guideline sentence

4. There is some debate in the literature about the appropriateness of using a log transformation for the sentence length outcome. While logging the sentence length reduces skewness and heteroskedastic error terms (Bushway and Piehl, 2001; Helms and Jacobs, 2002), it also alters the fundamental structure and interpretation of the model. Because the relative merits and demerits of log transformations for studying sentence length have yet to be fully investigated, and because preliminary analyses suggested few substantive differences using a logged measure, we follow the more prominent convention of analyzing a nonlogged measure of sentence length (Steffensmeier and Demuth, 2001; Kautt, 2000; Britt, 2000) to preserve simplicity of interpretation. Our results for our log transformed sentence length models are available on request.

recommendation and the presence or absence of mandatory minimums. Collectively, these variables provide a strong control for legally prescribed offense and offender characteristics (for a contrasting view, see Bushway and Piehl, 2001). The Pennsylvania sentencing guidelines provide direct measures of both the severity of the offense and the prior criminality of the offender. Offense severity is measured by the Offense Gravity Score (OGS), which ranges from 1 as the least serious, to 14 as the most. The offender's prior record is measured by the Prior Record Score (PRS), an eight-category scale ranging from 0 to 8, with the last two categories (6 and 8, there is no category 7) reserved for repeat felons and repeat violent offenders. This scale represents an offender's past convictions for misdemeanors and felonies, as well as certain juvenile adjudications.[5] The offense type is measured with three dummy variables, the first coded 1 for violent if the offender was convicted of a violent offense, the second coded 1 for property if the offender was convicted of a property offense, and the third coded 1 for drugs if the offender was convicted of a drug offense. Other offenses are the reference category. The presumptive guideline sentence recommendation variable provides a measure of what the sentencing guidelines indicate is an appropriate sentence. For the in/out incarceration models, this variable was coded 1 if the guidelines recommended incarceration and 0 otherwise, and for the sentence length models this variable was coded to equal the minimum number of months of incarceration recommended by the guidelines. We use the minimum of the guideline ranges, because those are intended to be, and are seen by court participants as, the most presumptive recommendation in Pennsylvania's guidelines (Kramer and Scirica, 1986; Ulmer, 2000). Albonetti (1998) and Engen and Gainey (2000) argue for the importance of including the presumptive guideline sentence recommendation as a further control when examining extra-legal effects, so we include it here as well (but see Bushway and Piehl, 2001). Finally, we also include a dummy variable to control for the application of mandatory minimums. Pennsylvania has statutorily defined mandatory incarceration sentences for certain offenses, so it is important to control for them because, once

5. As Engen and Gainey (2000) and Ulmer (2000) note, offense severity and prior record measures can have curvilinear effects on sentence outcomes. As suggested by Engen and Gainey (2000), we include the guideline presumptive sentence to capture the curvilinearity in guideline-recommended effects of offense severity and prior record. We also tested whether offense severity and prior record had curvilinear effects above and beyond the guideline-recommended effects by including quadratic terms for offense severity and prior record. We found that although the effects of offense severity and prior record were modestly curvilinear, this did not affect the extra-legal effects we estimate at either level 1 or level 2 of our models.

applied, they limit courtroom discretion in the determination of both incarceration and sentence length.[6]

In addition to these legally relevant variables, the PCS also reports extralegal variables of interest, such as the race/ethnicity, gender and age of the offender. We created dummy variables for our racial/ethnic and gender distinctions. Black was coded 1 if the offender was African American and 0 otherwise. Similarly, Hispanic was coded 1 if the offender was Hispanic and 0 otherwise.[7] Female was coded 1 if the offender was a woman and 0 if the offender was a man. Finally, age was coded as the number of years of the offender at the time of sentencing.

The case-processing factor we include is the mode of conviction. We measure this with two dummy variables coded 1 if the offender was convicted through a negotiated plea or a trial, and 0 if through a non-negotiated plea.[8] One limitation of this study is that we lack measures of defendants' socioeconomic status, type of attorney and pretrial release status (bail), a limitation shared with the large majority of sentencing studies (see review by Zatz, 2000). These variables are not collected by the PCS. It is also very difficult to obtain such data on a large scale even if one collects one's own data.

In addition to these various individual level factors, we also include a variety of aggregate level contextual measures for Pennsylvania's sixty-seven counties. The court characteristics that we include in our analysis include the court size, the judicial caseload, the trial rate and the available incarceration capacity of each county. Following Ulmer (1997), we trichotomized our measure of court size into large, medium and small courts based on both the number of trial judges in the county and the proportion of cases adjudicated in each county. Our measure of judicial caseload was created by dividing the number of total criminal cases in a county by the number of sentencing judges (this dividend was subsequently divided by 100 for ease of interpretability). It therefore

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6. We replicated the analyses presented here both with and without cases involving mandatory minimum sentences included. The results for our effects of hypothesized interest did not differ substantially either way.
7. Race/ethnicity is reported to the PCS in one summary variable that includes both black and Hispanic as unique categories. Offenders are uniquely identified as belonging to only one category, therefore the black and Hispanic categories represent mutually exclusive classifications in the present analysis.
8. Because of the unfortunate prevalence of missing data on the mode of conviction variable, we created an additional dummy variable for missing cases (12.9 percent of in/out case, 12.6 percent of sentence length cases) and included it as a separate mode of conviction category in our regression analyses. This procedure allowed us to include information from these cases when estimating other regression effects without biasing our results for modes of conviction.

serves as an indicator of the relative caseload of judges in each county. We measured trial rate as the percentage of cases convicted through jury trial in each county.[9] As an indicator of county political context, percent Republican is measured as the percentage of the county population voting for the Republican candidate in the 1996 presidential election. We also included a relative measure of the available jail space in each county, calculated as the total number of jail beds in each county divided by the number of cases in that county. The higher the ratio of jail beds to cases, the higher the relative jail capacity. For our racial threat hypotheses, 1998 percent black and percent Hispanic represent the percent of the county population identified as black or Hispanic respectively.

Finally, we include measures of county poverty rates[10] as well as measures of the amount and type of crime in the counties, because previous aggregate level research suggests that these may affect sentencing, and are thus important control variables for our purposes (Sutton, 2000; Britt, 2000; Bridges and Crutchfield, 1988; Myers and Talarico, 1987). Percent poverty is measured as the percent of individuals in a given county living below the poverty level. The index crime rate measures the overall level of crime in each county. The percent violent variable is a measure of the percent of total convictions in each county for violent offenses. Similarly, percent property and percent drugs are indicators of the percent of total convictions in each county for property and drug offenses respectively.[11]

HIERARCHICAL MODELING

Hierarchical linear modeling (HLM) is necessitated by the multilevel nested nature of our sentencing data and our research questions. A two

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9. While data limitations required that we combine bench and jury trials into a single category in order to maximize the number of counties for which a unique regression coefficient could be computed (Britt, 2000), we elected to analyze the effect that jury trial rate exerted at the aggregate level. This was done because prior research suggests that bench trials are used differently across counties, sometimes being akin to non-negotiated pleas (see Ulmer, 1997).
10. We also tested models examining the county level unemployment rate to examine additional macroeconomic contextual effects on sentencing outcomes. These results are not reported here because they were generally similar to our poverty findings and because multicollinearity problems precluded the simultaneous inclusion of both unemployment and poverty in our models.
11. These case composition variables were calculated using the same scheme as the individual level offense type variable described above. Homicide, robbery, rape, involuntary deviant sexual intercourse, aggravated assault and simple assault were classified as violent crimes, burglary, theft, criminal trespass and arson were classified as property crimes, and all drug related offenses (possession, trafficking and so forth) were classified as drug crimes.

level hierarchical structure characterizes our data, with offenders nested within different county level courts. HLM techniques provide several advantages over traditional analytical strategies such as ordinary least squares (OLS). HLM allows for the partition of variance within and between counties, which allows the researcher to evaluate the amount of variation that exists at each level of analysis. Given that criminal cases are nested within county level courts, similarities among cases at the county level are likely to occur. Statistically, this means that residual errors tend to be correlated within counties, violating the OLS assumption of independent error terms and risking the misestimation of standard errors. HLM overcomes this difficulty "by incorporating into the statistical model a unique random effect for each organizational [county level] equation" (Bryk and Raudenbush, 1992:84). Moreover, whereas OLS regression inappropriately bases statistical significance for contextual variables on the number of individual cases, HLM adjusts the degrees of freedom to correctly represent the number of level 2 units. HLM also allows one to overcome the aggregation bias that can occur when a variable takes on different meanings at different levels of analysis (the mean rate of trials exerts an effect above and beyond the individual level trial effect, for example), and finally, HLM allows one to model heterogeneity of regression coefficients. For instance, the effect of being a minority offender may vary across counties. HLM allows the researcher to model this variation by estimating a separate set of regression coefficients for each county level unit. The researcher can then assess the degree of variation that exists among these key individual level factors (race, gender, mode of conviction), before attempting to explain this variation using county level covariates (court size, caseload pressure, percent minority). Overall, then, HLM allows one to more precisely estimate regression coefficients, while simultaneously modeling separate but interrelated units of analysis—individual case and offender characteristics (level 1) that are nested within (and potentially interact with) particular county level court contexts (level 2).

In examining both the judicial decision whether to incarcerate and the decision regarding sentence length, we employ both a hierarchical logistic regression model (for the dichotomous in/out incarceration decision) and a hierarchical linear regression model (for the continuous sentence length decision). The general form of the two level logistic model is as follows:

$$(Y_{ij}) = \beta_{0j} + \beta_{1j}(X_{1ij} - \bar{X}_1) + \ldots + \beta_{kj}(X_{kij} - \bar{X}_k), \text{ where} \quad (1)$$

$$\beta_{0j} = \gamma_{00} - \gamma_{01}W_1 - \ldots - \gamma_{0m}W_m - u_{0j}, \quad (2)$$

$$\beta_{1j} = \gamma_{10} - \gamma_{11}W_1 - u_{1j}, \text{ and} \quad (3)$$

$$\beta_{kj} = \gamma_{k0} - \gamma_{km}W_m - u_{kj} \quad (4)$$

The general form for the sentence length linear model is as follows:

$$(Y_{ij}) = \beta_{0j} + \beta_{1j}(X_{1ij} - \bar{X}_1) + \ldots + \beta_{kj}(X_{kij} - \bar{X}_k) + r_{ij}, \text{ where} \quad (5)$$

$$\beta_{0j} = \gamma_{00} - \gamma_{01}W_1 - \ldots - \gamma_{0m}W_m - u_{0j}, \quad (6)$$

$$\beta_{1j} = \gamma_{10} - \gamma_{11}W_1 - u_{1j}, \text{ and} \quad (7)$$

$$\beta_{kj} = \gamma_{k0} - \gamma_{km}W_m - u_{kj} \quad (8)$$

Equation (1) is the primary model for the incarceration decision. It represents the individual level (level 1) of analysis examining the log odds of incarceration (Y_{ij}) for offender i in county j. β_{kj} in this equation is the effect of variable k on the dependent variable for each county j, and $(X_{kij} - \bar{X}_k)$ represents the value of the explanatory variable X for offender i in county j, centered on the grand mean of variable X.

Grand mean centering risks the introduction of estimation bias in the individual level effect, because this coefficient is a weighted combination of the between and within county effects. While group mean centering provides an unbiased estimator for the individual level effect (Bryk and Raudenbush, 1992:117–121; Britt, 2000), though, it artificially constrains county level compositional differences, thereby complicating assessment of sentencing variation across counties. Given the present focus on these county level differences, we elected to grand mean center our variables. Supplemental analyses (available on request) demonstrated that this research strategy did not significantly alter our findings or conclusions regarding the impact of any of our individual level sentencing factors.

Equations (2) through (4) represent the contextual level (level 2) of analysis, or the portion that specifies the random components and county level explanatory variables in the model. In these equations, W_m represents the values of the county level variables included as predictors of the individual level intercept or slope, and γ_{km} represents the effects of these variables on the level 1 coefficient β_{kj} for variable k and county j. Note that while all level 2 variables are utilized to predict differences in the average likelihood of incarceration (i.e. the level 1 intercept β_{0j}), only select, theoretically relevant level 2 variables are included as predictors of different individual level slopes β_{kj}. Also note that this model includes an error term, u_{kj}, representing the random component for the effects of variable k for county j. Equations (5) through (8) mirror equations (1) through (4) in substance and interpretation, except that the outcome of interest (Y_{ij}) in equation (5) is sentence length instead of the log odds of incarceration. Therefore this model is a hierarchical linear model instead of the hierarchical logistic model described by equation (1), and it includes an additional level 1 error term, r_{ij}, representing the random error in sentence length for offender i in county j. (For greater detail on hierarchical linear modeling, see Bryk and Raudenbush, 1992; for greater detail on hierarchical logistic modeling, see Bryk, Raudenbush and Congdon, 1996; Guo and Zhao, 2000).

Our analytical strategy is designed to investigate various complexities surrounding the influence of individual and contextual factors on sentencing outcomes. We begin the analysis by first analyzing the unconditional models (one-way random effects ANOVA) to partial out the amount of variation in each sentencing outcome occurring at each level of analysis. The unconditional model is the simplest HLM model, but it is valuable because it allows us to determine the proportion of the variance between versus within counties, and provides a baseline from which subsequent models can be evaluated. After this, we introduce level 1 explanatory variables into our models (random coefficients ANCOVA with individual level predictors) in order to estimate the effects of individual characteristics on both sentencing outcomes.[12] This model allows us to evaluate the proportion of reduction in variance at each level of analysis due to individual level characteristics, and allows us to examine the fixed and random effects of our level 1 explanatory variables. Then we proceed to include our level 2 predictors (random coefficients ANCOVA models with level 1 and level 2 covariates), which provide important information about mean differences in sentencing patterns across counties and attempt to explain these differences with our aggregate variables. [13] Last, we estimate interactive models, with level 1 and level 2 variables and cross level interactions fully specified (random coefficients ANCOVA

12. We conducted deviance statistic tests on level-one coefficients to determine whether or not random or fixed effects were most appropriate for our data. In each case, the deviance tests were significant, indicating that random coefficients were more appropriate. We therefore specified random level-one coefficients for all variables. However, we also analyzed our models with only the legal (OGS, PRS and offense type) and extralegal (age, race/ethnicity, gender and mode of conviction) level-one variables of interest specified as random effects. These latter models increased the number of counties for which unique regression coefficients could be calculated and they did not change the results in substantively meaningful ways, so we report our findings from these latter analyses.

13. Not surprisingly, some of our county level predictors were correlated with one another. In preliminary models we investigated the potential effects of multicollinearity in two ways. First we used factor analytic procedures to reduce collinearity among our level two predictors (Land et al., 1990). Although this is a potentially useful technique, we decided that the resulting sacrifice of theoretical and conceptual clarity was not justified. We therefore elected to retain separate level two variables in our analyses. To ensure that our findings were not the result of idiosyncratic relationships among out level two predictors, we examined several reduced models of contextual effects, limiting our predictors to those that were relatively unrelated. Our investigation of these alternative model specifications make us confident that the results we report are robust across model specifications despite the presence of collinearity among some of our county level variables. Moreover, the HLM program we utilize gives the user an error warning if severe collinearity is detected. This did not occur in any of our models. A correlation matrix for the level two variables is available on request.

models with cross level interactions). These models allow us to examine important cross level interactions between individual factors and county level contextual factors, as well as to evaluate the effects of individual and county level influences on our sentencing outcomes.

RESULTS

UNCONDITIONAL MODELS

Descriptive statistics for both our individual (level 1) and contextual (level 2) explanatory variables are illustrated in Table 1, and the results from our initial unconditional incarceration and sentence length models in Table 2. The second allows us to compare the amount of between versus within county variation in sentencing outcomes.[14] We find that in both the incarceration and sentence length models, significant variation exists between counties. However, the sentence length model demonstrates that this variation is relatively small compared to the amount of within county variation. This is shown by the intraclass correlation for the sentence length model, which is only .0195,[15] indicating that only about 2 percent of the total variance in sentence length outcomes is between rather than within counties. In other words, within county factors account for a much greater proportion of the total variance in sentence length outcomes than do between county contextual differences. A relatively small intraclass correlation, however, does not mean that between county variations in sentencing outcomes are not substantively meaningful. In fact, Liska (1990) argues for the theoretical importance of contextual factors for understanding individual level outcomes, even when their predictive power is less relative to individual level factors.

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14. Whereas the unconditional model for the sentence length decision provides both a level 1 and level 2 variance component, the unconditional model for the incarceration decision only provides a level 2 variance component. This is because the level 1 incarceration outcome is by definition constrained to be 0 or 1, so a level 1 variance component is not meaningful (tests for the inclusion of an additional dispersion parameter in the hierarchical logistic models indicated it was not necessary). This means it is not possible to compare the relative explained variation at each level of analysis for logistic HLM models. Instead we calculate the explained variance at level 2 for these models and focus our discussion of the relative variance across levels of analysis on the more appropriate linear sentence length models.
15. The intraclass correlation coefficient represents the proportion of the variance in the outcome that is between the level 2 units. It is calculated by the following formula: $\rho = \tau_{(0)} / (\tau_{(0)}+\sigma^2)$. See Bryk and Raudenbush (1992: 18) for an elaboration.

Table 1: Descriptive Statistics for the In/Out and Sentence Length Models of Incarceration

Panel A: Individual Level (Level 1) Variables

	In/Out Incarceration		*Sentence Length*	
	Mean	Stnd.Dev.	Mean	Stnd.Dev.
Incarceration	0.55	0.5	--	--
Sentence Length	--	--	7.98	16.46
Offense Severity (OGS)	3.39	2.12	3.82	2.41
Prior Record (PRS)	1.28	1.84	1.61	1.99
Guideline Recommendation	0.29	0.45	5.37	12.48
Mandatory Applied	0.23	0.42	0.36	0.48
Violent Offense	0.15	0.36	0.15	0.36
Property Offense	0.24	0.43	0.21	0.41
Drug Offense	0.18	0.39	0.16	0.37
Black	0.28	0.45	0.28	0.45
Hispanic	0.06	0.23	0.07	0.25
Female	0.17	0.37	0.12	0.32
Age	31.31	10.02	31.83	9.95
Negotiated Plea	0.63	0.48	0.61	0.49
Trial	0.04	0.19	0.05	0.22
Hazard Rate	--	--	-0.69	0.24
		N=108,169		N=59,852

Panel B: Contextual Level (Level 2) Variables

	Mean	Stnd.Dev.
Total Index Crime Rate	2385.85	967.69
Percent Black	3.17	5.93
Percent Hispanic	1.46	1.72
Percent Republidcan	44.98	8.07
Poverty Rate	11.32	3.53
Unemployment Rate	4.60	1.31
Judicial Caseload	5.83	1.37
Jail Space	24.13	16.01
Trial Rate	1.72	1.22
Percent Violent Offenses	14.14	4.13
Percent Property Offenses	24.68	6.11
Percent Drug Offenses	12.4	6.65
Large Court	0.03	0.17
Medium Court	0.21	0.41
Small Court	0.76	0.43
		N=67

Table 2: Unconditional HLM Models of In/Out Incarceration and Sentence Length

In/Out Incarceration Unconditional Model
Fixed Effects (unit specific model)

	Coefficient	*Stnd Error*	*T-Ratio*	*Df*	*P-value*
Intercept, B0					
Intercept, G00	0.40	0.06	6.42	66	0.00

Random Effects	*Variance*	*Stnd. Dev.*	*X-sq*	*Df*	*P-value*
level 2, U0	0.24	0.49	5632.44	66	0.00

Sentence Length Unconditional Model
Fixed Effects (w/ robust stnd errors)

	Coefficient	*Stnd Error*	*T-Ratio*	*Df*	*P-value*
Intercept, B0					
Intercept, G00	4.00	0.23	17.50	66	0.00

Random Effects	*Variance*	*Stnd. Dev.*	*X-sq*	*Df*	*P-value*
level 2, U0	3.18	1.78	4277.87	66	0.00
level 1, R	159.68	12.64			

Intraclass Correlation	0.02

Deviance = 855922.33
Number of estimated parameters = 2

RANDOM COEFFICIENT MODELS

FIXED EFFECTS

Our level 1 random coefficient models provide useful information about the individual level factors that affect sentencing decisions, and allow us to assess the degree to which these effects vary across different court contexts (see Table 3). The inclusion of our level 1 variables explained over 50 percent of the total variance at the individual level, and they also explained about 21 percent of the variance between counties. This indicates that a substantial part of between county variation is due to county level compositional differences. Different county courts sentence different types of cases, which accounts for a portion of the observed variation in sentencing outcomes across counties.

Table 3: HLM Level 1 Random Coeffiecient Models of Incarceration and Sentence Length

Fixed Effects	*In/Out Incarceration*				*Sentence Length*			
	B	*S.E.*	*Odds*		*B*	*S.E.*	*Beta*	
Intercept	1.04	0.10	--	***	8.65	0.20		***
Offense Severity (OGS)	0.50	0.02	1.65	***	3.50	0.37	0.51	***
Prior Record (PRS)	0.43	0.02	1.54	***	1.48	0.23	0.18	***
Guideline Recommendation	0.56	0.03	1.75	***	0.74	0.05	0.56	***
Mandatory Applied	3.55	0.03	34.80	***	14.82	1.99	0.43	***
Violent Offense	0.31	0.09	1.36	***	1.96	0.34	0.04	***
Property Offense	0.21	0.08	1.23	*	2.06	0.46	0.05	***
Drug Offense	0.05	0.09	1.05		-0.75	0.26	0.02	**
Black	0.50	0.05	1.65	***	0.83	0.21	0.02	***
Hispanic	0.52	0.08	1.68	***	2.21	0.39	0.03	***
Female	-0.47	0.04	0.62	***	-2.32	0.28	-0.05	***
Age	-0.01	0.00	0.99	***	-0.04	0.01	0.01	***
Negotiated Plea	-0.12	0.07	0.89		-0.75	0.17	-0.02	***
Trial	0.57	0.11	1.77	***	6.00	1.19	0.08	***
Hazard Rate					24.70	2.83	0.36	***
	N=108,169				N=59,852			

Fixed Effects	*In/Out Incarceration*				*Sentence Length*			
	Variance	*df*	X^2		*Variance*	*df*	X^2	
Offense Severity (OGS)	0.02	52	932.91	***	2.02	49	1083.79	
Prior Record (PRS)	0.03	52	880.03	***	0.25	49	443.67	
Violent Offense	0.43	52	645.73	***	3.56	49	117.27	
Property Offense	0.37	52	657.55	***	9.28	49	222.23	
Drug Offense	0.42	52	671.32	***	3.62	49	247.44	
Black	0.10	52	264.10	***	0.84	49	80.98	
Hispanic	0.17	52	95.34	***	3.12	49	76.38	
Female	0.07	52	149.95	***	1.23	49	95.28	
Age	0.00	52	189.67	***	0.00	49	123.16	
Negotiated Plea	0.25	52	280.37	***	0.33	49	106.85	
Trial	0.41	52	113.68	***	80.74	49	562.73	
Intercept Level 2, uoj	0.61	52	5264.05	***	2.50	49	485.70	
Level 1, rij					79.08			
Proportion of Variance Explained								
Level 2 (R^2_2)					0.215			
Level 1 (R^2_1)					0.505			

[a] Chi square values for the incarceration model are based on 53 counties that had sufficient data for computation. For the sentence length model, these values are based on 50 counties that had sufficient data.

† $p \leq .10$
* $p < .05$
** $p < .01$
*** $p < .001$

Examination of the fixed effects demonstrates results that are largely congruent with prior research on individual level sentencing factors (see Spohn 2000). Legal factors are strongly related to both the likelihood of incarceration and the length of sentence. Offense severity (OGS) and offender's prior record (PRS), for instance, both increase the likelihood of incarceration as well as the overall sentence length. In addition, the offense type variables indicate that certain types of offenses (violent crimes) are associated with increased sentencing severity.

Offender characteristics also significantly influence sentencing outcomes. Black, Hispanic, male and younger offenders all receive increased severity at sentencing. In addition, the mode of conviction is an important level 1 determinant of sentencing severity, such that going to trial noticeably increases both the likelihood and length of incarceration. Specifically, the odds of incarceration for offenders who go to trial is 1.77 times greater than for offenders convicted through nonnegotiated pleas, and these offenders receive incarceration sentences that are on average 6 months longer.

RANDOM EFFECTS

The random effects in Table 3 provide information about the degree to which the effects of different variables vary across county contexts. Significant variance components indicate that the regression coefficient for the variable of interest differs significantly across counties. In line with hypotheses 1 and 2, we find that each of the variance components is statistically significant for both the in/out incarceration and sentence length decisions. In the incarceration model, the significant model intercept indicates that the likelihood of an offender receiving jail or prison time is significantly different across counties, even after controlling for offender and case level (level 1) differences. Similarly, the significant model intercept for the sentence length model indicates that after controlling for individual sentencing factors, significant variation in the mean number of months of incarceration across counties remains. Thus, both the likelihood of incarceration and the mean sentence length differ significantly across county level courts, even after numerous individual case level factors are controlled.

In addition, the significant variance components for the individual level predictors in Table 3 provide evidence that the effects of different legal, extralegal and case processing variables also vary across counties. In other words, decision makers in different courts weight the importance of these various individual case level characteristics at sentencing differentially. This conclusion holds true for both the incarceration and sentence length decision. While all individual level predictors demonstrate significant

variation, the effect of going to trial (especially for sentence length) tends to exhibit the greatest variation, suggesting that the size of the trial penalty is strongly related to the sentencing county. This variation is further illustrated by examination of the standard deviation for the trial effect (obtained by taking the square root of the variance). For the in/out decision, this standard deviation (converted to odds) is 1.23, and for the length effect it is 8.9. Substantively, this means that about two-thirds of the counties' trial effects for incarceration fall within one standard deviation (.23) of the between county mean trial effect, or that the odds of incarceration associated with trial varies by plus or minus .23 between two-thirds of the counties. Similarly, two-thirds of the counties' trial effects for sentence length vary by about 9 months above or below the mean length effect. The offense type variables also demonstrate relatively large variance components; the effects of different offense types of crime also vary considerably across counties.

RANDOM COEFFICIENT MODELS WITH COUNTY- LEVEL COVARIATES

To further investigate the variation in sentencing severity across county level courts, we next added level 2 explanatory variables as predictors of mean sentencing differences across counties. These models include all level 1 and level 2 predictors and represent our full models of incarceration and sentence length. Findings from these models are presented in Table 4. We begin by discussing our results for the in/out incarceration model, followed by a discussion of contextual effects on sentence length.

THE INCARCERATION DECISION

Our full model of incarceration demonstrated that court characteristics exerted strong influences on sentencing decisions. In support of hypothesis 3, we found considerable evidence that court size is related to the likelihood of incarceration. Large courts were least likely to incarcerate offenders. The odds of incarceration in large courts are about half those in a medium court, after controlling for individual, case level and other aggregate level 2 variables.[16] Although small courts were not statistically distinguishable

16. Interestingly, the effect of large courts interacted with the percent Republican in the county so that as the percent Republican increased, the effect of large courts decreased (Large Court*% Republican: b=.11, S.E.=.04). This suggests that more Republican large courts are more likely to incarcerate offenders than less Republican large courts.

from medium, the positive coefficient for small courts is consistent with greater sentencing severity in small rural counties.

Table 4: Full HLM Random Coefficient Models of Incarceration and Sentence Length

	Incarceration				*Sentence Length*		
Level 2 Variables	*Coefficient*	*Stnd. Err.*	*Odds Ratio*		*Coefficient*	*Stnd. Err.*	
Intercept	1.03	0.08	--	***	8.69	0.21	***
Court Characteristics							
Large Court	-.74	0.27	.48	**	-.42	0.23	†
Small Court	.20	0.17	1.23		-.29	0.21	
Caseload	-.10	0.05	.90	*	-.05	0.08	
Jail Space	.02	0.00	1.02	**	-.01	0.01	
Trial Rate	-.03	0.06	.97		.01	0.07	
Crime Characteristics							
Crime Rate	.00	0.00	1.00		.00	0.00	
% Violent	.02	0.02	1.02		.02	0.02	
% Property	.02	0.01	1.02		-.03	0.02	*
% Drug	-.01	0.01	.99		-.04	0.01	*
Population Demographics							
% Poverty	.03	0.02	1.03		-.02	0.02	
% Black	-.03	0.02	.97	†	-.01	0.02	
% Hispanic	.01	0.04	1.01		.07	0.04	†
% Republican	-.01	0.01	.99		-.01	0.01	
R^2 between, uoj					0.15		

† $p \leq .10$
* $p < .05$
** $p < .01$
*** $p < .001$

Note: All models also include all level 1 variables presented in Table 3; however, these model estimates remained virtually unchanged so we present only the results for the effects of Level 2 variables.

While we found no evidence that political composition of the county electorate had a direct effect on incarceration decisions as predicted by court community theory in hypothesis 4, we did find strong evidence for hypothesis 5, that local jail capacity is related to the likelihood of incarceration across county courts. The more available jail space, the more likely judges were to sentence offenders to incarceration, even after controlling for the other individual and contextual variables. Specifically, the odds of incarceration increased by two percent for each unit increase in jail space. Consistent with hypothesis 8, caseload pressure was negatively related to the likelihood of incarceration, net of other factors. Higher caseloads increase the need to move cases quickly and efficiently, and this efficiency is related to sentencing severity such that the likelihood of incarceration in higher caseload counties is less for otherwise comparable offenders. Specifically, the odds of incarceration decrease by

10 percent for every unit increase in caseload. However, we found no effect for trial rate on incarceration, net other factors.

In contrast to the substantial findings for court characteristics, we found no significant effects for county level crime characteristics on incarceration, nor did we find evidence that population demographics influenced the likelihood of incarceration across counties. Specifically, the data did not support hypothesis 11 that larger minority populations increase sentence severity. Overall, then, we found some evidence that court characteristics were related to incarceration decisions, but our other contextual factors demonstrated no significant effects.

THE SENTENCE LENGTH DECISION

The random coefficient model is our full model of sentence length, with all level 1 and level 2 predictors, but without any cross level interactions specified (see Table 4). From this we see that court size, as predicted by hypothesis 3, is negatively related to sentence length, though this result was only marginally significant. We found no evidence for hypothesis 4 that percent Republican in the county influences the sentence length.[17] We also found no evidence that jail capacity or caseload pressure significantly influenced the sentence length across counties. In terms of our racial threat hypothesis, we did find that percent Hispanic was a marginally significant predictor of sentence length. This offers some mild support for the racial group threat hypothesis, indicating that once other aggregate county factors are controlled, the percentage of Hispanics in the county population may be positively related to mean sentence length. The borderline significance of this finding, though, requires future research to verify this result before any concrete conclusions can be drawn. Finally, percent poverty was unrelated to the length of incarceration across counties. Overall, then, court characteristics and population demographics appear to have little bearing on the judicial decision regarding sentence length. However, we did find that caseload composition was significantly related to sentence length. In particular, courts with high percentages of property offenses and courts with high percentages of drug offenses tended to sentence offenders to overall shorter periods of incarceration.

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17. As with the incarceration decision, though, court size and percent Republican interacted to determine the sentence length, such that the effect of large courts was less for more Republican counties (large court*%Republican: b=.15, S.E.=.07). This finding implies that offenders sentenced in less Republican large courts are likely to receive especially short periods of incarceration.

CROSS LEVEL INTERACTION MODELS

We now turn to the final stage of our analysis. Our results to this point suggest that individual factors clearly dominate both the incarceration and sentence length decisions, but county level contexts also exert significant influences on mean sentencing outcomes across counties. While the individual and contextual effects we describe are noteworthy in and of themselves, several of our hypotheses also posit interactive relationships between individual and contextual factors. We therefore estimate a series of models specifying cross level interactions between these two units of analysis (see Table 5).

THE INCARCERATION DECISION

We begin by discussing the results for our incarceration models. As a key practical constraint, the amount of available jail capacity may condition the impact that individual level factors exert on sentence severity. In particular, we hypothesized that available jail capacity would moderate the effects of offense severity and violent offenses, as well as an offender's prior record. While we found no support for hypothesis 6 regarding offense severity and violent crimes, we did find a significant but quite small interaction between available jail space and the impact of prior record. Interestingly, this relationship was opposite that predicted by hypothesis 7. An offender's prior criminal record has a greater, not lesser, effect in courts with greater jail capacity. We reasoned that courts with constrained jail space would reserve that space for more serious and repeat offenders, and thus courts with fewer jail resources would put relatively greater emphasis on offense seriousness, violent offenses and repeat offenders. Instead, it may be that greater jail space liberates courts to be more punitive toward those with more extensive prior records. We do not want to overstate the importance of this effect, though, because it is so small: Prior record's positive effect on incarceration odds increases by .003 for every one unit increase in jail space.

The interaction between caseload pressure and trial conviction, however, is consistent with our theoretical expectations. As hypothesis 9 suggested, the trial penalty is greater in counties with higher caseload pressure, relative to counties with lower caseload pressure. Specifically, the positive effect of trial conviction on the odds of incarceration increases by about .14 for every unit increase in caseload. While the variance component for our trial variable is reduced by the inclusion of the caseload predictor (from .41 to .38), though, it remains fairly large and statistically significant. This suggests that while caseload pressure accounts for some of the between-county variance in the trial effect, it does not completely explain it away. Whereas caseload pressure conditioned the

effect of going to trial, though, the trial rate of the county was not significantly related to the trial penalty.

Table 5: HLM Full Cross Level Interaction Models of Incarceration and Sentence Length

	Incarceration				Sentence Length		
	Coefficient	Std Error	Odds Ratio		Coefficient	Std Error	
Jail Space Interactions							
Intercept	1.04	0.10	--	***	8.65	0.20	***
Jailspace	.017	.005	1.017	**	.018	.014	
OGS	.500	.022	1.648	***	3.498	.363	***
OGS*Jailspace	.000	.001	1.000		.015	.008	†
PRS	.429	.023	1.535	***	1.478	.225	***
PRS*Jailspace	.003	.001	1.003	*	.002	.004	
Violent	.311	.090	1.365	***	1.954	.348	***
Violent*Jailspace	-.001	.004	.999		-.015	.009	
Caseload Interactions							
Intercept	1.04	0.10	--	***	8.65	0.20	***
Caseload	-.107	.044	.898	*	-.045	.067	
Caseload	.579	.116	1.785	***	5.989	1.181	***
Trial*Caseload	.128	.049	1.137	**	-.820	.601	
Trial Rate Interactions							
Intercept	1.04	0.10	--	***	8.65	0.20	***
Trial Rate	.055	.059	1.057		-.010	.070	
Trial	.537	.113	1.711	***	6.040	1.171	***
Trial*Trial Rate	.135	.089	1.144		-.419	.699	
Race/ethnicity Interactions							
Intercept	1.04	0.10	--	***	8.65	0.20	***
% Black	-.036	.012	.964	***	.002	.009	
% Hispanic	.011	.032	1.011		-.026	.029	
Black	.495	.053	1.640	***	.619	.181	***
Black*% Black	-.006	.004	.994	†	.063	.005	***
Hispanic	.505	.099	1.657	***	1.815	.437	***
Hispanic*% Hispanic	.001	.021	1.001		.199	.074	**
Court Characteristics							
Intercept	1.05	0.08			8.69	0.22	
Large Court	-4.95	1.77	.01	**	-5.88	2.72	*
%Republican	-0.02	0.02	.98		-0.01	0.02	
Large Court*%Republican	0.11	0.04	1.12	*	0.15	0.07	*

According to racial group threat theory, larger percentages of minorities in the county should increase the effect of minority status at sentencing. In regard to the incarceration decision, we found no evidence of such an interaction for either blacks or Hispanics. While the effect of percent black on the individual level black coefficient approaches statistical significance, it is substantively quite small and in the opposite direction predicted. The coefficient for Hispanics is clearly nonsignificant.

These results suggest that the positive relationship between minority status and the in/out incarceration decision (see Table 3) cannot be explained by the percent of the population belonging to the respective minority group. Hypothesis 12 is therefore not supported with regard to the decision to incarcerate.

THE SENTENCE LENGTH DECISION

Similar to the in/out incarceration models, the cross level interaction sentence length models produced varied results for our hypotheses. Our investigation of the conditioning effects of jail capacity suggested that the effects of violent offense and prior record were not significantly related to available jail space. The effect of offense severity, however, was related to available jail capacity, though this interaction was small and marginally significant ($p=.055$). As with the findings for prior record above, though, this finding was opposite that predicted by hypothesis 6. Judges in counties with larger available jail capacity appear to place slightly greater emphasis on offense severity when considering the length of sentence. Perhaps, as with the effect of prior record in counties with greater jail space, a lack of space constraints frees courts to punish more serious offenders more harshly (short of sending them to state prison) than they otherwise would.

We found no evidence, however, that the caseload pressure or the mean trial rate in the county influenced the trial effect in relation to sentence length as suggested by hypotheses 9 and 10. While the effect of trial on sentence length varied considerably across counties, then, it was not related to either caseload pressure or county level trial rates.

We did find considerable support for hypothesis 12, however, that the effect of minority status on sentence length varies with the percent minority in the community. We found that the effect of being black was significantly larger in counties with a larger percentage of black residents, and similarly, that the effect of being Hispanic was significantly larger in counties with higher percentages of Hispanic residents. Thus, black offenders in highly black counties and Hispanic offenders in highly Hispanic counties tend to receive longer incarceration sentences than their racial and ethnic counterparts in other counties. In fact, these interactions reduce the variance components for both black and Hispanic to nonsignificance. This suggests that the percent black and the percent Hispanic in the county largely accounts for the between county variation in sentence length for these effects.

SUMMARY

We found that most of the variation in sentencing existed at the individual case level, and most of the variance in sentencing outcomes was

explained by individual case level factors. However, we did find significant between-county variation in sentencing that was not explained by individual case level factors, and we found that the effects of individual case level predictors themselves varied significantly and substantially across counties. Table 6 (see next page) summarizes our hypotheses and how they fared in our investigation. Our major findings are as follows:

- Significant sentencing variation existed between counties, particularly in terms of incarceration odds (supporting hypothesis 1).
- Considerable variation existed between counties in the effects of all individual level predictors, supporting hypothesis 2. This variation was especially pronounced for the effects of trial and offense type.
- Large courts were considerably less likely to incarcerate than medium or smaller courts, and to a lesser extent, large courts also gave out shorter sentences (supporting hypothesis 3).
- Local jail capacity was positively related to incarceration odds, supporting hypothesis 4.
- Counties with heavier caseloads were relatively less likely to incarcerate defendants, supporting hypothesis 8.
- The size of the trial penalty for incarceration was conditioned by court caseload, that is, trial penalties were greater in counties with heavier caseloads (supporting hypothesis 9). Caseload, however, does not account for all the between-county variation in the trial penalty, which may indicate the importance of varying norms and going rates for trial sentences between counties.
- Blacks were given longer sentences in counties with greater black population percentages, and Hispanics were given longer sentences in counties with greater Hispanic population percentages (supporting hypothesis 12). These two cross level interactions explained all the between county variation in the effects of race and Hispanic ethnicity.

DISCUSSION

Our analysis shows that most of the "action" is at the individual case level in criminal sentencing. But we also find that local contextual features—such as court organizational culture, court caseload pressure and the racial and ethnic composition of jurisdictions—affect sentencing outcomes both directly and/or in interaction with individual case level factors. We thus concur with Liska (1990) that contextual effects can be substantively and theoretically important, even though contextual variables may explain relatively less variation in individual level outcomes than individual level predictors. Our findings support

insights from a variety of different yet compatible theoretical perspectives in the sentencing literature (like organizational efficiency and organizational context models, racial threat theory, and Albonetti's causal attribution and uncertainty avoidance framework), which we integrate under the umbrella of the court community and focal concerns perspectives. Our findings carry implications for racial and ethnic stratification and the role of race and ethnicity in social control institutions.

Table 6: Results of Hypothesis Tests

Hypotheses	Incarceration Decision Results	Incarceration Length Results
1: Sentencing severity will vary significantly between counties.	*Supported*	*Partially supported*
2: The effects of key predictors will vary significantly between counties.	*Supported*	*Supported*
3: County size is negatively related to sentencing severity.	*Supported*	*Partially supported*
4: Counties with more conservative political electorates will exhibit more severe sentencing.	Not Supported	Not Supported
5: Local jail capacity will be a practical constraint that is positively related to incarceration odds	*Supported*	N/A
6: Offense severity and violent offenses will have a greater effect on incarceration odds in counties with more constrained (lower) local jail capacity.	Not supported	N/A
7: Prior record will have a greater effect on incarceration odds in counties with more constrained (lower) local jail capacity.	Significant relationship, but opposite the direction hypothesized	N/A
8: County caseload pressure will be negatively related to sentence severity.	*Supported*	Not Supported
9: The positive effect of trial conviction on sentence severity will be greater in counties that have heavier caseload pressure.	*Supported*	Not Supported
10: The positive effect of trial conviction on sentence severity will be greater in counties with lower trial rates.	Not Supported	Not Supported
11: The county-level concentration of blacks and Hispanics will be positively related to sentencing severity.	Not Supported	*Partially Supported* (for Hispanics)
12: Minority concentration and defendant race/ethnicity will interact such that blacks and Hispanics will be sentenced more harshly in contexts with greater concentrations of blacks or Hispanics, respectively.	Not Supported	*Supported*

COURT COMMUNITIES AND THEIR FOCAL CONCERNS

Our findings support the notion of the importance of focal concerns of sentencing, as these are embedded in the contexts of court communities. These focal concerns in turn invoke the importance of constraints like organizational efficiency and local correctional resources, and also the potentially racially or ethnically influenced nature of perceptions of criminal threat and dangerousness to the community.

The findings above that the effects of key individual level predictors of sentencing vary between counties are quite supportive of the court community perspective's prediction that local courts will vary in their informal case processing and sentencing norms, or "going rates." Thus the usual focus in the sentencing literature on "the" race, ethnicity or gender effect on sentencing, or "the" trial penalty, conceals as much as it reveals, since these factors differently influence sentencing in different court communities (for similar conclusions from analyses of the federal court system and New York State, see Kautt 2002 and Nelson 1992, respectively). Furthermore, the findings support the court community perspective's prediction that court size produces distinctive sentencing patterns, with large urban courts exhibiting the most lenient sentencing.

Sentencing appears to be particularly affected by court communities' distinctive practical constraints and consequences, a key focal concern of sentencing. Local jail capacity and organizational efficiency appear to be two of these important constraints. They directly affect sentencing outcomes, and equally as important, they condition the effects of other variables like prior record and especially conviction by trial. Furthermore, court caseload composition can sometimes affect sentencing. This set of findings expands on other studies that highlight the importance of organizational contexts and organizational efficiency (Dixon 1995, Engen and Steen 2000).

The null finding regarding the direct effects of percent Republican could indicate that a county's political context has little to do with sentencing, once the many other important predictors of sentencing are controlled, even though judges and prosecutors in Pennsylvania are chosen in partisan elections at the county level. On the other hand, a county's political context might influence court community sentencing norms and outcomes in more subtle ways (such as the interactions with court size reported in footnotes 16 and 17), or alternatively, county percent Republican may be too crude a measure to capture the influence of political context. Another possibility is that the lack of effect for percent Republican reflects a lack of real difference between Republicans and Democrats regarding their stances on criminal justice issues. In Pennsylvania as in the rest of the country, for example, many Democrats

routinely run for office as advocates of crime control through "tough" sentencing.

Our findings join those of Kautt (2002) in suggesting the potential importance of local organizational and legal culture of courts, as court community theory emphasizes. Ouchi and Wilkins (1985) and Fine (1984) stressed the importance of organizational culture as a crucial factor that affects a wide variety of processes and structures in organizational settings. Our results also point to the potential importance of local organizational culture in shaping decision making processes and outcomes in a variety of institutional settings, both inside and outside the arena of criminal justice.

Viewing courts as distinctive communities, and viewing focal concerns of sentencing as embedded within and shaped by court communities, could also connect theories of criminal punishment to broader sociological concerns in stratification (racial/ethnic and gender discrimination, the dynamics of local politics, racial threat) and organizational sociology (organizational culture, organizational decision making). A key step in developing this theoretical perspective on criminal sentencing is to connect focal concerns to their court community contexts empirically. That is, future studies should delineate causal relationships (perhaps in both directions) between the prioritization and interpretation of the focal concerns and court community organizational and legal culture.

RACIAL THREAT AND THE PERCEIVED DANGEROUSNESS OF MINORITY OFFENDERS

As predicted by racial group threat theory, and consistent with the court community and focal concerns perspectives, the effects of race and ethnicity on sentencing were significant in their own right, and—more important—were conditional on the size of the county black or Hispanic population. More broadly, this finding coincides with Taylor's (1998) analysis of racial prejudice, racial threat and racial composition. She found that racial prejudice positively interacted with racial composition such that prejudice among whites increased with local black population size. In analogous fashion, we find that individual Hispanics and blacks are punished more severely among counties with larger Hispanic or black populations, perhaps reflecting greater perceived threat. Of course, we lack data on how these minorities are actually perceived by court actors, and how these perceptions affect focal concerns of sentencing like perceived dangerousness/protection of the community. However, the findings look the way one would expect them to if black and Hispanic offenders were perceived as more criminally threatening and dangerous in areas of higher minority concentration.

Our findings support the notion that sentencing potentially contributes to the reproduction of black and Hispanic structural disadvantage. These data support Bonilla-Silva's argument that racial ideology and stereotypes become an "organizational map that guides actions of racial actors in society" (Bonilla-Silva 1997:474), and that racially charged decisions and actions often become "embedded in normal operations of institutions" even while actors rationally pursue goals or interests not directly tied to race (Bonilla-Silva 1997:476).

In our view, Bonilla-Silva's (1997) depiction characterizes the sentencing process. The individual level finding that individual blacks and Hispanics were sentenced more harshly suggests to us that court actors' interpretations and assessments of perceived dangerousness and the protection of the community in particular might be influenced by racial and ethnic stereotypes (wittingly or unwittingly). This perceived racial and ethnic threat is apparently aggravated when the black and/or Hispanic populations become larger relative to the white population. Our findings, like those of Steffensmeier and DeMuth (2000, 2001) and Spohn and Holleran (2000), extend Bonilla-Silva's argument, because we find that the reproduction of structural disadvantage for Hispanic and black males is conditioned by variation in the size, and thus perhaps the perceived threat, of the Hispanic and black population. We also answer Taylor's (1998) call to identify different kinds of responses to perceived racial threat: our findings comport with the notion that differential criminal punishment may be one such kind of response to perceived racial or ethnic threat.

CONCLUSION

Our study raises some dilemmas between civil rights, local autonomy and organizational realities of courts for policy makers, legal ethicists and civil rights advocates to wrestle with. The first dilemma concerns due process rights versus organizational realities of courts. Our finding that those convicted by trial are sentenced more severely means that individual defendants are differentially punished for exercising their constitutional right to trial. Trial penalties would seem to violate notions of due process by imposing costs on defendants who exercise their right to trial, thus potentially discouraging full examination of case facts and defendant blameworthiness. Furthermore, this trial penalty varies across courts, and according to the caseload pressure experienced by a court, which suggests that courts are even more willing to punish defendants' exercise of their rights when dockets are pressing and case-processing efficiency is at a premium.

However, plea bargaining has apparently been a feature of American criminal courts since the nineteen century, and it persists because it serves

the interests of prosecutors, defense attorneys, and judges alike (see Flemming et al. 1992, Feeley 1979, Mather 1979). In an organizational sense, such a strategy is completely rational for courts. It is well known among court actors that the criminal court system would be overwhelmed without the production of guilty pleas, often by rewarding those who plead guilty and punishing those who go to trial (see Ulmer 1997, Engen and Steen 2000). Thus, it appears that the organizational realities of courts demand a practice that potentially compromises due process rights. Furthermore, the pressure to compromise due process rights is not uniform across court contexts, but apparently depends on local sentencing norms and caseload pressure.

In addition, just as trial penalties are locally variable, so too are the effects of other important variables, such as offense type/severity, prior record, gender, and race and ethnicity. Such variation occurs even in a state with a sentencing guideline system that is supposed to make sentencing outcomes more uniform, and to make the decision process itself more uniform. Local variations in sentencing in nonguideline jurisdictions could be even greater. Sociologically, this supports the notion that law and other distal structures are very often mediated by and become embedded in local culture, organizations and interests (Ulmer 1997, Blumer 1990). This means that what kind of sentence one gets and why one gets it depends in part on where one is sentenced. This would seem to undermine the principle of equal justice valued in most modern legal systems.

However, some might argue that principles of democracy, local autonomy and decentralized government mandate the ability of local jurisdictions to fashion punishments as they see fit, at least within broader legal parameters. Thus, it seems that criminal punishment presents a situation in which key principles of American democracy foster unequal treatment before the law.

Future research should extend and refine our analysis with more and better measures of organizational and jurisdictional contexts. For example, more direct measures of court organizational culture, such as measures of predominant case processing and sentencing norms from surveys or interviews, would advance our understanding of the role of organizational culture in punishment decisions. Also, future studies should improve on our measure of local political context. Our measure, county percent Republican, could be replaced by more refined and specific survey measures of local publics' and criminal justice decision makers' attitudes on a variety of criminal justice policy concerns. Furthermore, future studies should attempt to replicate our finding that blacks and Hispanics get longer sentences in places with larger black or Hispanic populations. Such research should also investigate whether there is a "tipping point"

for black and Hispanic populations, at which these contextual features might dampen rather than aggravate racial or ethnic sentencing disparities (a point suggested by Britt 2000:711). In addition, our study was limited to a three-year period from 1997 to 1999. Future studies should investigate the kind of historical variation in the effects of defendant social statuses and contextual factors on sentencing noted by Peterson and Hagan (1984).

Earlier research on the role of judge characteristics in sentencing in Pennsylvania and elsewhere has generally found that judge characteristics like race or gender are sometimes significantly related to sentencing patterns, but their influence is quite small relative to the effects of factors such as offense characteristics, prior record, and conviction by trial (Steffensmeier and Hebert 1999, Spohn 1990, Myers and Talarico 1987). This research, however, shares the same methodological shortcoming as other investigations of contextual influences on sentencing—the use of methods not appropriate for multilevel data. Further research should therefore investigate the effect of judge characteristics by treating them as an intermediate contextual level, between individual case and defendant factors on one hand, and jurisdictional court and community contextual factors on the other.

Finally, quantitative studies can only investigate the outcomes of criminal punishment decisions, not the decision processes themselves. Ethnographic and other qualitative research is necessary to fully understand the individual and joint decision making processes behind sentencing outcomes, as well as the nature and role of organizational culture, and processes by which court environments shape that culture.

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