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THE SCALE OF IMPRISONMENT IN THE UNITED STATES: TWENTIETH CENTURY PATTERNS AND TWENTY-FIRST CENTURY PROSPECTS*

FRANKLIN E. ZIMRING**

I. INTRODUCTION

The prison has been far more important to criminal justice practice than to academic theory in the century examined by this Symposium. Imprisonment is the dominant severe criminal sanction worldwide and there is no evidence that its hegemony at the deep end of crime control will change. But the study of imprisonment has not been a major feature of criminal law theory at any time, while some aspects of prisons have commanded attention in the literature of criminology. So imprisonment has played a dominant role in American criminal justice but a minor role in the discourse about criminal law. The *Harvard Law Review*, for example, listed twenty-seven articles with “prison” or “imprisonment” in the title in one hundred years of publication beginning in 1910.

The interdisciplinary character of the *Journal of Criminal Law and Criminology* and its crime focus made it into the leading forum in law-related scholarship covering issues of prison operation and function. No fewer than 155 main articles were published with “prisons” or “imprisonment” in their titles in a century of publications, by far the largest concentration one would find in any scholarly journal closely linked to legal

* I thank Ginger Jackson-Gleich and Stephen Rushin for research assistance, David Johnson for comments, and the participants in the January 29, 2010 Symposium for questions and commentary. Jeff Fagan introduced me to the statistical tests of the normality of distributions and performed the calculations reported in Table 1. The efforts reported in Part III.A of this essay were inspired by a conversation with Justin McCrary, who must therefore share responsibility for some of the resulting analysis.

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education.¹ And prisons played a prominent part in the scholarly portfolio of the *Journal* from the very beginning, with slightly more articles on prisons in the first half of its volumes than in the second. The range of prison-related topics covered from the beginning—including comparative and empirical work—was impressive.

But little of the first half-century of the *Journal* touched on the central issue in this analysis—what I shall call *the scale of imprisonment*. Zimring and Hawkins define the issue of scale as analysis of the appropriate “size of a society’s prison enterprise in relation to other criminal sanctions and to the general population. How many prisoners? How many prisons? What criteria should govern decisions about how large a prison enterprise should be constructed and maintained?”²

Only one of the more than seventy articles with prison in its title that appeared in the *Journal* in its first half-century was principally concerned with rates of imprisonment: an article by Edwin Sutherland describing the decline in rates of imprisonment in England.³ One important reason for the lack of scholarly attention to variation in the rate of imprisonment in the United States is that there was not a great deal of variation over time in the rate of imprisonment.

Indeed, the lack of dramatic variation in rates of imprisonment inspired Alfred Blumstein and Jacqueline Cohen to construct what they called “A Theory of the Stability of Punishment”⁴ in the *Journal* in 1973, probably the most important and certainly the most ironically timed article on imprisonment in the *Journal*’s first century. Blumstein and Cohen posit that levels of severe criminal punishment trend toward stability over time and they offered as evidence of this phenomenon the rather stable rates of imprisonment in the national aggregate over the years 1930-1970. Their Figure 2 is reproduced from Blumstein and Cohen as my Figure 1. The interpretation of this data was straightforward:

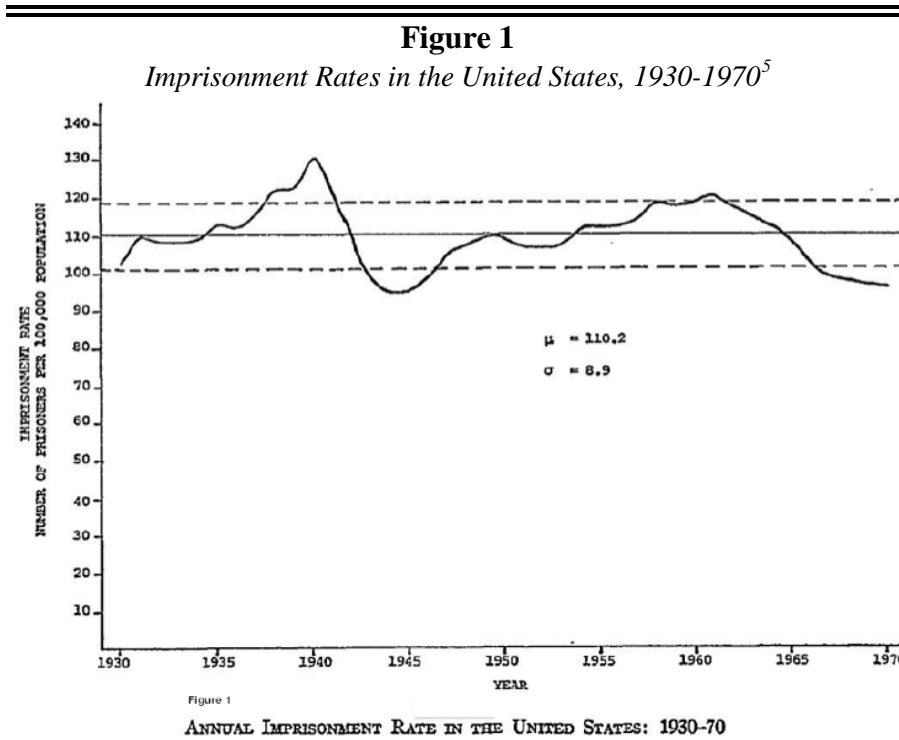
It can be seen from Figure 2 that over that period the imprisonment rate was reasonably constant, having an average value of 110.2 prisoners per 100,000 population and a standard deviation during that time . . . of 8.9 prisoners per 100,000 population The stability of the time series is especially noteworthy when it is

¹ The *Journal of Criminal Law and Criminology* search was conducted by *Journal* staff while the Harvard search was conducted on January 22, 2010, by Ellen Gilmore, a reference librarian at the University of California, Berkeley Law Library.

² FRANKLIN E. ZIMRING & GORDON HAWKINS, *THE SCALE OF IMPRISONMENT* xi (1991).

³ Edwin H. Sutherland, *The Decreasing Prison Population of England*, 24 J. CRIM. L. & CRIMINOLOGY 880 (1934).

⁴ Alfred Blumstein & Jacqueline Cohen, *A Theory of the Stability of Punishment*, 64 J. CRIM. L. & CRIMINOLOGY 198 (1973).



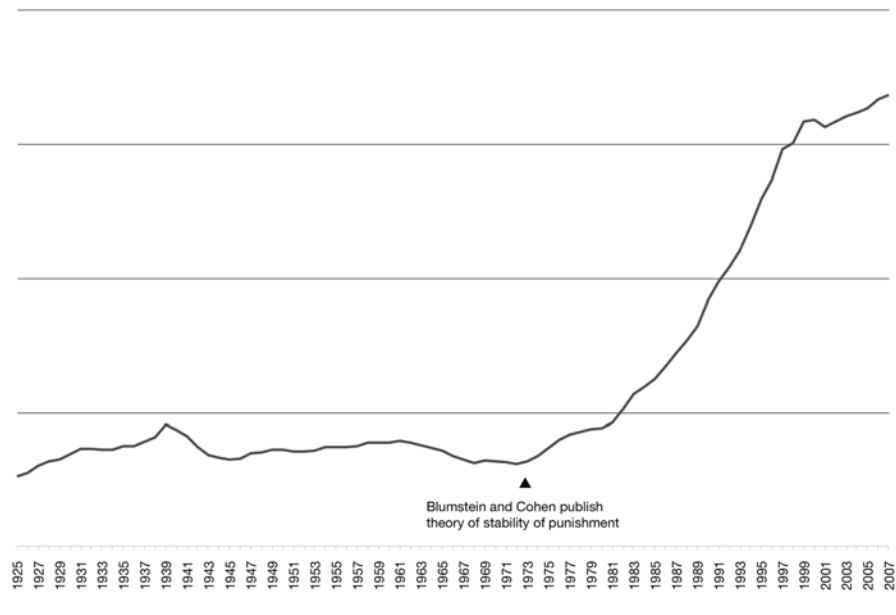
considered that the population of the United States increased by over 50 percent in the same period.⁶

Twice more in the 1970s, Blumstein and his associates would produce data and analysis to augment their stability of punishment theory,⁷ but then their entire theoretical structure was overtaken by events. From its low point in 1972, U.S. prison populations had begun a consistent and unprecedented climb. Figure 2, taken from U.S. Bureau of Justice Statistics data, shows an uninterrupted increase in aggregate imprisonment rates that lasted the full generation after 1972.

⁵ Blumstein & Cohen, *supra* note 4.

⁶ *Id.* at 201.

⁷ Alfred Blumstein, Jacqueline Cohen & Daniel Nagin, *The Dynamics of a Homeostatic Punishment Process*, 67 J. CRIM. L. & CRIMINOLOGY 317 (1977); Alfred Blumstein & Soumyo Moitra, *An Analysis of the Time Series of the Imprisonment Rate in the States of the United States: A Further Test of the Stability of Punishment Hypothesis*, 70 J. CRIM. L. & CRIMINOLOGY 376 (1979).

Figure 2*Imprisonment Rates per 100,000 Population, United States, 1925-2007*⁸

The contrast between the four decades after 1930 and the three and a half decades after 1972 is stark. The highest annual imprisonment rate in the 1930-1970 period was 38% above the lowest (131.5 versus 95.5 per 100,000) and there was no clear trend over time. In the thirty years after 1972, the rate of imprisonment grew every year and the rate of imprisonment by 2007 was five times greater than at the beginning.

The first impact on scholarship of this unprecedented increase in the use of prisons in the United States was to end any serious discussion of “stability of punishment.” That theory was produced by flat trends over time in the United States after 1925 and was destroyed by the imprisonment boom that followed 1972.

The second product of the sharp increase in American prison population was academic interest in what features of society and government might influence rates of imprisonment over time. Once the dynamic and non-homeostatic qualities of imprisonment rates were established by the history of imprisonment after 1975, the causes of

⁸ Blumstein & Cohen, *supra* note 4.

variation in imprisonment over time and cross-sectionally became an important topic for empirical analysis. The same upward march in prison population that ended interest in stability of punishment generated curiosity about the scale of imprisonment as a variable in crime policy and governance.

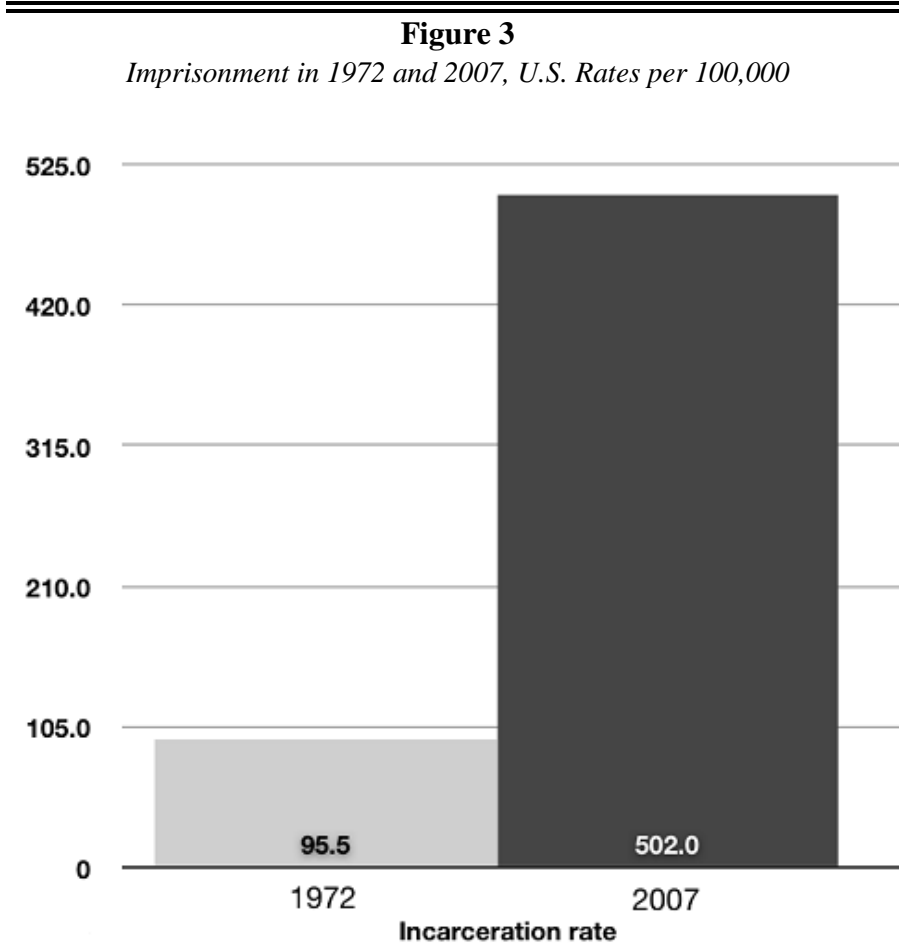
There are two parallels between the “stability of punishment” exercises of the 1970s and the more recent efforts to comprehend and measure what determines the scale of imprisonment in the United States. The first important shared characteristic of these two lines of inquiry is that each theory was derived from and driven by empirical data. For all its Durkheimian analysis, the inspiration for Blumstein and Cohen’s stability of punishment insight was the flat distribution of imprisonment rates over time in the United States, a pattern that invited speculation about its potential causes. In that sense, the stability pattern was a practice in search of a theory before any explanation was produced. The more recent work on the scale of imprisonment was also provoked by the changing trends that demanded explanation and analysis. All of the recent studies of imprisonment scale have been inspired by these sharp increases, so here again the data to be explained arrive prior to the theories to be tested.

The second parallel is an unjustified assumption of temporal normality. Despite the fact that theories of stability and then of variability were inspired by provocative empirical trends, the analysis of historical data testing these theories has assumed that the periods to be analyzed are normal and typical. In the earlier work, the observed stability was assumed to be representative of other periods as well, so that the generality of patterns observed could be expected. Again, in the statistical explanations of the period after 1972, the empirical analysis has been assuming that the prison trends of the thirty years after 1972 are representative of other periods and public moods so that the statistical relationship and magnitude of effects noted in this period will hold for other times and conditions.

This Article focuses on three aspects of the prison trends in the United States since 1975. First, I discuss the size and generality of the increase in prison population with special emphasis on the features of government that make the pattern of growth so surprising. Second, I identify and discuss two central empirical questions about the imprisonment boom after 1972. Part IV explores the effects of the analysis in Part III on the proper method of testing whether crime rates are important in predicting imprisonment. The final section of this Article asks whether and to what extent the volatility in the growth of prison populations might also signal that major drops in the scale of imprisonment might happen soon.

II. THE MAGNITUDE OF PRISON GROWTH

The thirty-five years after 1972 produced a growth in rates of imprisonment that has never been recorded in the history of developed nations. Figure 3 compares the rate of imprisonment in 1972 with the rate in 2007.



Source: Bureau of Census and Bureau of Justice Statistics

The 502 per 100,000 rate of state and federal imprisonment is not only five times the rate of imprisonment in the base year of 1972 but also almost four times the highest level of imprisonment in the four decades prior to 1970. By the early 1980s, the U.S. prison population passed its previous high rate and continued a sharp increase without any pause for more than two additional decades. In the generation after 1970, the rate of imprisonment in the United States doubled (between 1972 and 1988) and then doubled *again*.

When this growth began in the 1970s, the rate of imprisonment in the United States was on the high end of western democracies but not what statisticians would call an “outlier” totally apart from the other nations in the G7.⁹ But the rate of imprisonment achieved by 2007 in the United States was three times that of any fully developed nation at any point in the post World War II era. So the extent of growth experienced by the United States in the thirty-five years after 1970 would be remarkable for any nation in any era. But there are three aspects of the governmental and legal structure of the United States that make the uninterrupted upward march of prisoners nothing short of astonishing.

The first distinct feature of U.S. government that should even out variations in prison population over time is the decentralized structure of criminal law and criminal punishment. The national government is responsible for less than 10% of the persons incarcerated in the United States, with the fifty states each responsible for determining definitions of crimes and schedules of punishment and typically administering and funding prison systems. This decentralized punishment policy means that the aggregate “rates of imprisonment” in Figure 1 and Figure 2 of this article are really an aggregate average from fifty-one different systems, each of which has responsibility and power to set autonomous policy for prisons. These multiple decision points should moderate the extreme values of individual states and produce modest aggregate changes over time. Except that the moderating influence of aggregating fifty-one different systems was not very substantial in the generation after 1970. While there was some variation in rates of growth from state to state, the overpowering trend was toward sustained high rates of growth. Zimring and Hawkins identify the 1980s as the period when the push toward and beyond historically high rates of imprisonment became clear:

As of 1980 only eleven states reported rates of imprisonment higher than at any previous point in the century. But a cyclical hypothesis has been decisively disproved by prison population trends since 1980. Forty-six of the fifty states report rates of imprisonment between 1985 and 1987 which are the highest they have experienced in a century.¹⁰

The near unanimity of century-high imprisonment mentioned in the previous paragraph was noted in the mid-1980s, when the aggregate rate of imprisonment had only come near to completing its first doubling. By the early 1990s the journey of state governments into unprecedented high rates of imprisonment had become universal if not uniform. So decentralized

⁹ ZIMRING & HAWKINS, *supra* note 2, at 150 tbl.6.6; *see also* FRANKLING E. ZIMRING & GORDON HAWKINS, *CRIME IS NOT THE PROBLEM* 31 tbl.2.2 (1997).

¹⁰ ZIMRING & HAWKINS, *supra* note 2, at 152.

power and multiple autonomous centers of policy power became the first structural feature of the American system that should have moderated the expansion of rates of imprisonment but didn't to any significant degree.

The second element of the U.S. system in the 1970s and 1980s that one would expect to moderate the growth of imprisonment was the absence of significant change in penal legislation during the first two decades of the great American prison expansion. There was no general trend toward either increasing the number of crimes or escalating either minimum or maximum terms of imprisonment during the period from 1970 to 1985. A few states shifted from indeterminate to determinate sentencing systems (including California and Illinois) in the 1970s, but there is no evidence that these structural changes had any significant impact on the growth of imprisonment during the period.¹¹

The wide discretion in determining punishments in the prosecution and sentencing systems of the United States mean that substantial changes in aggregate punishment policy can take place without any substantial change in the legislation governing the levels of punishment available or the choice of punishments in individual cases. The first doubling of the U.S. prison population after 1972 is decisive evidence that the extraordinary latitude for exercise of discretion in American systems of criminal justice can produce very large changes in rates of imprisonment with no important changes in the legal framework of criminal punishment. Because there are so few restrictions on discretionary choices in individual cases, a substantial shift in the choices made by prosecutors and judges and police can produce very sharp shifts in policy. Certainly for the first fifteen years of the prison population expansion, this model of collective change in discretionary decisions is a much better model for explaining increases than any pattern of significant legal change. The legal structures in place in the United States when it had a state prison population of 205,000 in 1972 were not greatly different from the legal structures that were responsible for 800,000 prisoners in 1991.

The third systemic element that might be expected to moderate the rate of prison growth in the United States is the relatively fixed number of prisons and space for prisoners in the United States. Prisons are capital goods with high fixed costs, long useful lives, and substantial lead times between authorization and completion. By the mid-1980s, over 90% of all the states in the United States were at the high point of the century for rates of imprisonment so that the relatively fixed resources in these places to house inmates were presumably close to their usual capacities. Under these

¹¹ 1 RESEARCH ON SENTENCING: THE SEARCH FOR REFORM 206 (Alfred Blumstein et al. eds., 1983).

circumstances, the crowding of existing prison facilities would be expected to restrain the rate at which still more prisoners were sent to penal facilities. The highly discretionary processes that produce commitments to prison should be sensitive to population pressure without delay. So the rate of prison population growth should have moderated after the first doubling of rates in the 1970s and 1980s as crowding pressures restrained prosecutors and judges from unlimited expansion policies, but this did not happen. Even with the population of prisoners swelling to unprecedented numbers in the 1990s, the expansion of incarceration continued, new facilities were constructed, and old prisons were retrofitted to accommodate larger populations. The single cell became the double cell and, not infrequently, the triple cell. So inertial forces which would ordinarily be expected to substantially slow the expansion of prison populations were overwhelmed by whatever systemic and political forces were driving prison expansion.

Perhaps the continual expansion of prisons tells us that capacity restraints and decentralized punishment power were overestimated as moderating forces on prison growth. But the unrestrained momentum of prison population growth after 1970 shows also that the political forces which drove the penal expansion were substantial and had substantial impact. This may be of some importance in predicting the size and speed of any future downward pressure on imprisonment.

III. TWO FUNDAMENTAL QUESTIONS

The thirty-five annual entries in the national portrait of rates of imprisonment after 1972 in Figure 2 give the impression of a single national pattern and a continuous upward trajectory. But looks can be deceiving. This section addresses two fundamental questions about the character of the thirty-five-year growth in rates of imprisonment. The first part of this section discusses whether the aggregate growth of imprisonment in the fifty states and the federal system is best viewed as (a) a single process with fifty-one different levels of government participating in essentially similar transformations of policy or (b) an aggregation of different levels or types of policy change. The second part of the section addresses whether the thirty-five years of increase are a single era of growth or are composed of two or three distinct and discrete eras with different causes and magnitudes.

A. ONE PROCESS OR MANY?

The aggregate growth rates portrayed in Figure 2 are the sum of data from fifty-one different governmental systems. As a matter of political science and perhaps of logic, it is inaccurate to speak of the rate of imprisonment in the United States as a single measure or to speak of the growth rate of imprisonment in the United States as a unitary phenomenon.

But noting the multiplicity of different components of policy in American penalty is the beginning, rather than the end, of the analysis that I am suggesting is required. Despite the large number of states and the diversity of their social and demographic composition, it is not unusual for nationwide trends to be evident in matters relating to crime and punishment. One recent example of a plenary national trend was the sharp decline in reported serious crime in the United States during the 1990s.¹² Zimring and Hawkins noted in 1991, “one of the most puzzling features of recent decades is the way in which the many political units that share power in the American criminal justice system altered their policies in a way that increased prison populations at the same time and with similar intensity.”¹³

The fourfold increase in the imprisonment rate in the United States obviously must be a broad trend to produce an aggregate impact that large. But there are two rather different patterns that can produce large growth in the aggregate. The large growth numbers can mask very large differences between highest growth and lowest growth jurisdictions where there are significant differences between one cluster of jurisdictions and another. In that case, aggregate growth levels are not the best way to study the causes of differential growth. The differences between states will be at least as important as national trends over time.

But the large number of states might all be more or less evenly participating in a national trend, in which case studying the factors associated with different rates of growth in different states will not provide an obvious key to the states’ shared characteristics that are the main causes of growth in all states. This methodological point was argued by Zimring and Hawkins:

At stake . . . is the appropriate unit of analysis for imprisonment policy. To the extent that the United States is a single social system, approaches that view variations in imprisonment as an outgrowth of social and economic processes would emphasize the national scale as a unit of analysis . . . [t]o the extent that prison population is best viewed as an outcome of conscious governmental choice . . . the most significant political power over imprisonment is exercised at the state level and the state should be the significant unit of analysis.¹⁴

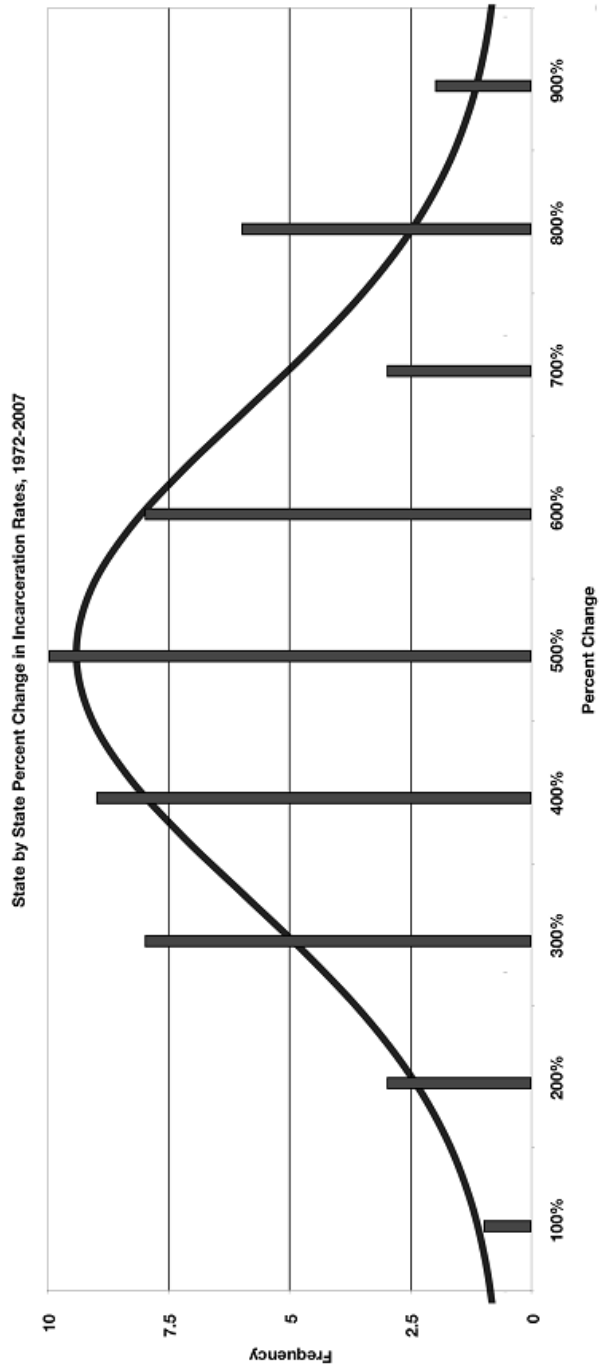
While Zimring and Hawkins spotted an important issue, their analysis jumps to premature conclusions about the appropriate level of government for studies of the scale of imprisonment. Even if the major influences on rates of imprisonment are political, the mechanisms that produce political

¹² FRANKLIN E. ZIMRING, *THE GREAT AMERICAN CRIME DECLINE* 3-24 (2007).

¹³ ZIMRING & HAWKINS, *supra* note 2, at 137.

¹⁴ *Id.* at 137-38.

Figure 4
The Almost Bell Curve Distribution of State Imprisonment Growth Rates



change at the state level may be national in scope and might best be studied at the national aggregate level. If most states respond in relatively uniform ways to a national-level stimulus, interstate variation should not be the central focus of the search for causal factors.

Figure 4 shows the distribution of percentage growth in rates of imprisonment for the U.S. federal system and the fifty states.

The pattern of state rate growth most consistent with a unitary national trend over the time period would show the largest concentration of states in the middle of the distribution with very few states at both extremes. The model for this type of pattern is a normal distribution around a mean value. To the extent that extreme values are found, they should tend to be in smaller states, and there should not be any clear pattern of regional clustering in one part of the distribution. That pattern would be a distribution consistent with a unitary national trend.

A pluralistic distribution would not concentrate in the center of the growth rate scale, would have clusters of cases at some distance from the mean, and would produce clusters of cases with apparent similarities in geography, crime, or politics and different characteristic growth rates. To the extent that a distribution suggests a unitary pattern, the appropriate level of analysis is the national aggregate. To the extent that plural clustering is evident in the distribution, the explanation of patterns of state variation becomes an important focus of inquiry. But which is distribution is present in Figure 4?

A formal statistical analysis confirms the visual impression that the pattern of state growth rates over 1972-2007 is consistent with a normal distribution. We use the fifty state growth rates as our sample set because they were produced in the same fashion. The federal data are excluded from this analysis. Two statistical tests analyze how often a distribution of fifty outcomes (in this case percent growth in state imprisonment rate) like that shown in Figure 4 would be likely to occur as chance variations from a normal distribution. They are the Shapiro-Wilk and Shapiro-Francia tests each named after its creators.¹⁵ Table 1 shows the fifty state results for the growth rates reported in Figure 4.

¹⁵ J.P. Royston, *A Simple Method for Evaluating the Shapiro-Francia W' Test of Non-Normality*, 32 STATISTICIAN 297 (1983); Patrick Royston, *Estimating Departure from Normality*, 10 STAT. MED. 1283 (1991); S.S. Shapiro & M.B. Wilk, *An Analysis of Variance Test for Normality (Complete Samples)*, 52 BIOMETRIKA 591 (1965); S.S. Shapiro & R.S. Francia, *An Approximate Analysis of Variance Test for Normality*, 67 J. AM. STAT. ASS'N 215 (1972).

Table 1

*The Probable Normality of Distribution of Imprisonment Growth Rates of Fifty U.S. States*¹⁶

<u>Test</u>	<u>Obs.</u>	<u>W</u>	<u>V</u>	<u>Z</u>	<u>Probability > Z</u>
Shapiro-Wilk	50	0.97322	1.259	0.492	0.31151
Shapiro-Francia	50	0.97985	1.045	0.085	0.46612

The smaller the probability that this is a fifty-case sample from a normal distribution, the more likely the pattern of difference observed is not normal, with a probability of 0.05 or less a usual benchmark for strong statistical evidence of non-normal distribution. But using a Shapiro-Wilk test produces a probability of normal distribution of 0.31151 and the Shapiro-Francia test probability is 0.46612. The question these tests address is “how likely” it is that a distribution like the one being tested could be the outcome of sampling fifty readings from a normal distribution. The answer is “pretty likely.” There are thus no indications in these analyses of anything other than fifty different outcomes of a uniform process.

B. ONE POLICY ERA OR THREE?

When trends in national rates of imprisonment are charted over time in Figure 2, the visual image is of two discrete trends—a flat and relatively stable period from 1930 to about 1970 and a second continuously upward period of uninterrupted growth. While the upward trajectory of increased rates of imprisonment moderates as the base rate of prison population increased in the 1980s and early 1990s, the number of prisoners added to the U.S. population remained between 300,000 and 437,000 for each five year period between 1985 and 2000.¹⁷ So the visual temptation in a graph like Figure 2 is bifurcation into a single era of stability and a single era of growth.

It is however one thing to note that a growth rate has been constant over a long period of time and quite another to assume that the substantive influences that were driving increases in prison population in the late 1970s are the same that were operating in the 1980s and remained stable in the 1990s. There are some indications that policy emphasis changed over the generation of growing rates with higher rates of commitment for a wide

¹⁶ Bureau of Justice Statistics, Key Facts, http://bjs.ojp.usdoj.gov/index.cfm?ty=tp&tid=13#key_facts; Nat'l Criminal Justice Reference Serv., <http://www.ncjrs.gov/App/Topics/Topic.aspx?TopicID=1>.

¹⁷ See the comparison of growth rates and numbers in ZIMRING, *supra* note 12, at 50 fig.3.5.

range of felonies being more important in the period prior to 1986, greater proportionate growth in drug and sex crimes being of greater significance from the mid 1980s to the mid-1990s, and with legislative increases in prison terms and longer prison sentences showing a more important role in the decade after 1995.¹⁸

Without a doubt the changes in emphasis and priority over time during the different eras turn generalization over the entire growth period about causes of imprisonment growth into a hazardous occupation. The sharp growth not only in drug prisoners, but in the percentage of state prisoners sentenced for drug crime between 1987 and 1991¹⁹ suggest different causal paradigms for earlier prison growth than during the drug war's peak years.

But there may be more unity in the process of prison growth than preoccupation with the changing characteristics of crimes and sentences would allow. To the extent that a relatively fixed expansion of imprisonment might be either desired or tolerated in the years after 1972, the crimes or sentence lengths that are added to reach that level may not be an important influence on the motivation or tolerance for prison growth. To the extent, then, that the relatively constant growth of imprisonment before and after the peak emphasis on the war on drugs indicates that drug offenders simply crowded out marginal property offenders or restrained longer prison sentences for street criminals when they took priority in the late 1980s, the drug panic was not itself a primary cause of change in the growth rate of imprisonment. To the unknown extent that the pace of national prison expansion operated independently of the categories of cases that were given emphasis in filling the new space, the conception of the post-1972 growth of imprisonment as a unitary trend across thirty-five years is plausible.

IV. DOES CRIME MATTER?

This section of the analysis will apply the perspectives discussed in Part III to review the published work discussing the role of variations in crime rates as explanations for variations in the rate of imprisonment cross-sectionally and over time. Of the potential hypotheses to use in applying analytic tools for study of the scale of imprisonment, the link between variations in crime and variations in imprisonment is a natural priority for two reasons. The link between crime volume and imprisonment volume should be a fundamental one, because criminal conviction is a necessary

¹⁸ Franklin E. Zimring, *Penal Policy and Penal Legislation in Recent American Experience*, 58 STAN. L. REV. 323, 329-34 (2005).

¹⁹ See FRANKLIN E. ZIMRING & BERNARD E. HARCOURT, *CRIMINAL LAW AND THE REGULATION OF VICE* 219 fig.3 (2007).

condition for eligibility for prison. All prisoners at any time are convicted criminals so that variations in the supply of crime and presumably criminals is one obvious source of variation in the amount imprisonment is used or demanded. This essential linkage has produced a second condition that recommends the crime/imprisonment issue as a demonstration example—the relatively large number of empirical studies published in this and other journals that have explored the topic and reported significant findings when crime rates are tested as an influence on relative growth of imprisonment in the era of prison expansion. There have not been many published studies on the scale of imprisonment nor have a wide variety of different analytic strategies been used, but the crime/imprisonment relationship has still received as much attention as any other potential cause.

Since criminal convictions are necessary (but not sufficient) conditions for imprisonment, an increase in convictions is one obvious reason why more people would be sent to prison, and one natural influence on the volume of convicted offenders is the volume of reported crimes. Several published studies have found that variation in crime at the state level predict variations in the growth of imprisonment at the state level. But a detailed comparison of the data analyzed suggests several limits to existing studies of the crime versus rates of imprisonment relationship.

One limit of the current studies is that the time periods studied were during the post-1972 uninterrupted growth in rates of imprisonment. Does growth in crime predict growth in imprisonment during periods with less growth to explain? If not, the relationship of crime trends and prison trends may be much weaker in more “normal” periods of relative stability in imprisonment rates in which variations in rates of many crimes are not predictive of differential imprisonment growth.

And even in periods of high growth in imprisonment, the type of growth most clearly associated with increasing prison numbers may have a large effect on the impact of crime rates on prison growth. In the first era of growth from 1974 to 1987, the most prominent cause of incarceration growth was the increasing rate of imprisonment for high volume felonies at the margin between prison and lesser sanctions—burglary, auto theft, unarmed robbery, assault.²⁰ Variations in crime rates might have a strong influence on prison use by increasing the number of such offenses just when the prison risk for such crimes was going up—the two forces might interact to redouble the risk increase that was occurring independently. But variations in reported part I or index crime (property crimes with victims and violent crimes of some seriousness) levels would not have as strong an

²⁰ See, e.g., FRANKLIN E. ZIMRING & GORDON HAWKINS, PRISON POPULATION AND CRIMINAL JUSTICE POLICY IN CALIFORNIA 14 (1992).

influence during an imprisonment policy focus driven by increases in sentenced drug offenders and non-rape sex offenders—the special features of the increase in imprisonment over the period 1987-1995, because there is no count of drug offenses or of non-rape sex offenses that would measure variations in the rate of these types of offenders. So the relationship of variations in official crime rates to differential growth rates of state imprisonment should be much weaker in an era of special emphasis on these non-index crimes. In fact, many of the studies that find strong crime/imprisonment links involved data from the first period of increasing prison risk for marginally serious index crimes (e.g., Table 1 in Pfaff).²¹ For this reason, such studies probably overestimate the impact on official rates of index crime and prison population even for the entire set of high growth eras.

And because these studies were only attempting to access the role of differential crime growth in explaining state-to-state differences in growth of imprisonment, the studies that were conducted produce no direct evidence on the question of how much of the growth in imprisonment at the national level was driven by the growth of crime. The greater the likelihood that a single national-level process was taking place during the period beginning in the 1970s, the more appropriate it becomes to explore the relationships between crime and imprisonment over time at the national level.

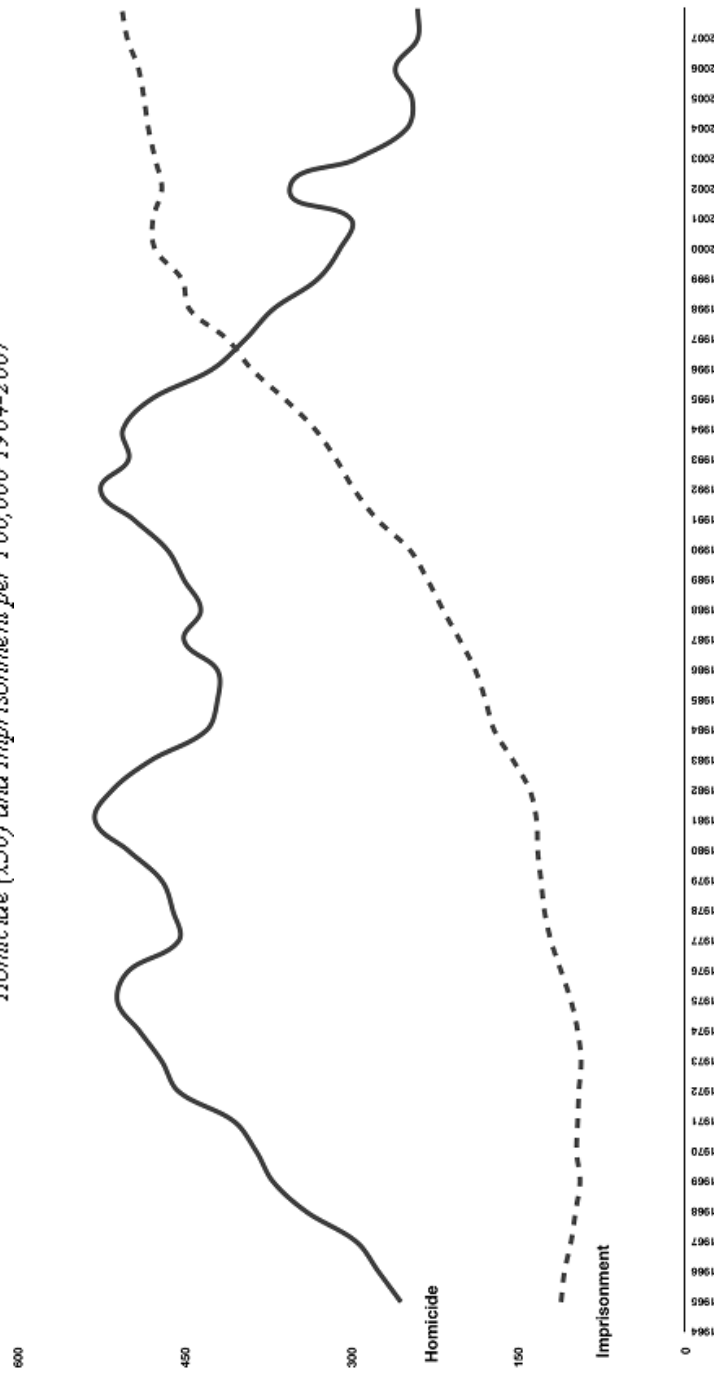
Figure 5 uses homicide rates over time as a proxy for crime trends nationally and compares temporal trends for homicide and imprisonment rate per 100,000 for the United States as a whole.

Homicide is selected as one proxy for serious crime because it is reliably reported and a good index of variation in rates of life threatening violence.²² Over the forty-three years after 1964, the observed rates of homicide and imprisonment are on very different trend lines. Homicide rates double between 1964 and 1974 in the United States, while imprisonment rates continue to decline until 1973. When imprisonment rates begin to rise over the late 1970s, homicide rates first fall then increase back to just above the 1974 high in 1980, then drop substantially until 1984, increase from 1986 to 1991, then drop steadily throughout the 1990s and level off in the years after 2000.

²¹ John F. Pfaff, *The Empirics of Prison Growth: A Critical Review and Path Forward*, 98 J. CRIM. L. & CRIMINOLOGY 547 (2008).

²² ZIMRING & HAWKINS, *supra* note 9, at 67-71.

Figure 5
Homicide (r50) and Imprisonment per 100,000 1964-2007^a



^a Imprisonment: Figure 1 from Zimung, *supra* note 18; Homicide: Figure 1 from ZIMMUNG, *supra* note 12.

The temporal pattern for imprisonment shows little of the cyclical variations of homicide. Imprisonment drifts downward for eight years and then turns up for thirty-five years. One might argue that the increase in homicide in the late 1960s starts to drive imprisonment upward after a long lag, but an eight-year gap between the increase in killings and the increase in imprisonment would be much larger than any standard economic or policy lags. And the shape of the patterns for homicide and imprisonment are very different for the entire period rather than revealing similarities when lags are introduced. There is a significant relationship between homicide and incarceration trends, but it is negative, (-0.53) over the period 1964-2007. This might be good news for those who suggest that imprisonment reduces crime, but it is bad news for advocates that crime rates drive imprisonment rates.

Figure 6 shows trends in robbery and imprisonment to parallel the homicide story.

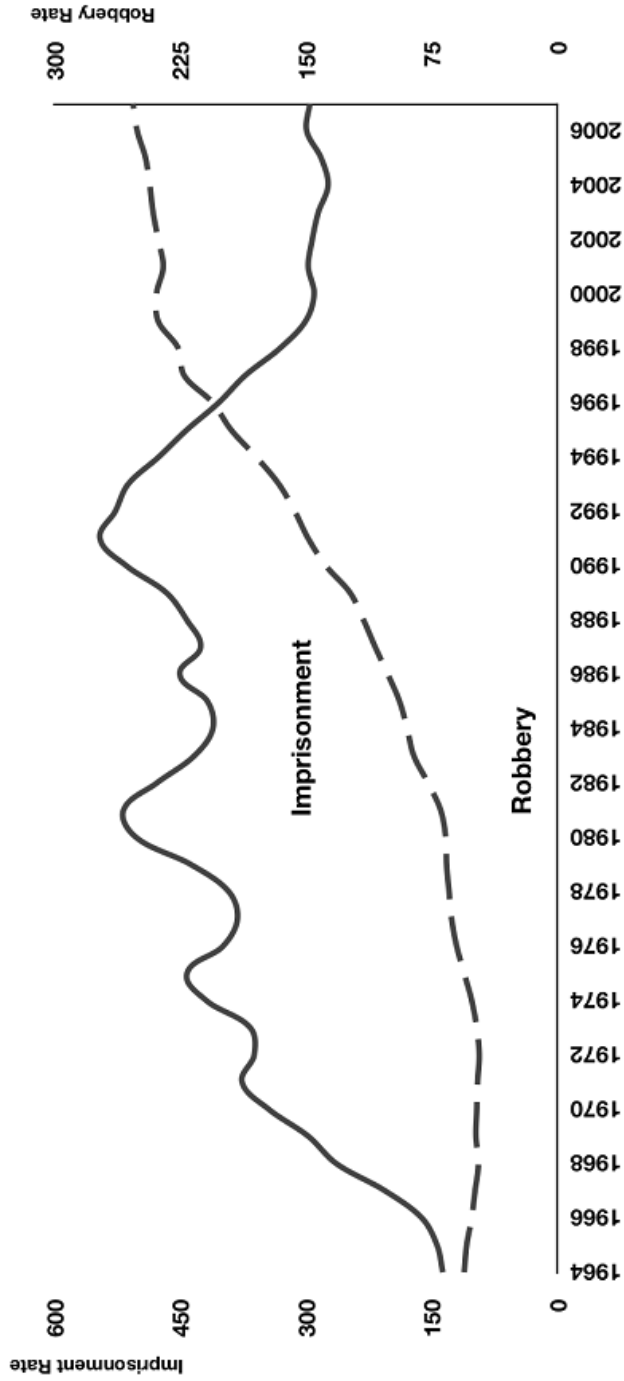
This time, the overall relationship between robbery and imprisonment is nonexistent (-0.08), consistent with the two trends operating independently of any systematic interaction.

Of course adding time lags and other statistical bells and whistles will produce variation in statistical outcomes. But the central point of these exercises seems secure: the notion that variations in crime in the period after 1964 are driving imprisonment rates, which is clear in the study of interstate variations, is not well supported once attention shifts to the national aggregate. So if that is the appropriate level of analysis (a plausible implication of a normal distribution of growth rates at the state level), it's back to the drawing board.

V. IS VOLATILITY A ONE-WAY STREET?

In retrospect, the mid-1970s witnessed a transition between relatively stable imprisonment trends to sharp upward variation in incarceration rates. But the description of prison population trends as "volatile" in this period may be inaccurate if that term is intended in its ordinary economic or linguistic sense of changeable or "tending to fluctuate sharply and regularly." The recent history of imprisonment in the United States has established that populations tend to fluctuate sharply and regularly, but only in an upward direction. The "average" increase in incarceration rate per 100,000 population has been about fourfold, a very substantial variation indeed. And there is strong evidence in recent years that growth rates have declined and increases in aggregate population levels are, by recent standards, quite small. Some state systems have declining rates of imprisonment already, and there is reason to believe that stability and decline may touch many systems in the near future.

Figure 6
Trends in Robbery Rates and Imprisonment Rates, U.S. 1964-2007^b



^b Imprisonment: Figure 1 from Zimring, *supra* note 18; Robbery: Figure 1 from Zimring, *supra* note 12.

So declining rates of imprisonment are a likelihood at some point in the American near term. What is not known is the *scale* of decline that might follow the increases of recent history. Are the large increases of recent history indications that the downward variations in incarceration rates might approach the scale of the post-1973 increases? Or are there inertial forces in the politics or governance of imprisonment that can be expected to restrain the downward variation of prison population so that cyclical movements appear non-symmetrical? Illustrations of the contrasting arithmetic of symmetrical versus asymmetrical downward variation are not difficult to construct. The equivalent of a 400% increase in prison population rate is an 80% decrease in rate per 100,000 from the inflated base rate of imprisonment back to break even. Is downward variation of that magnitude either possible or likely in a thirty-year frame of the twenty-first century?

There are no *downward* variations in prison population of that scale in the history of any developed nation on earth, just as there were no precedents for the statistical growth documented in Figure 2 until it happened. The number of significant decreases in prison populations in U.S. history is rather small, and the size of recorded declines to date are far less than half the 80% decline that would constitute statistical symmetry with the late twentieth-century increase. California produced a decline in rates of imprisonment in the early 1970s of approximately 30%,²³ and the New York State system, dominated by New York City prisoners, has dropped in the wake of the city's 80% drop in most forms of serious crime.²⁴ The early California experience lasted just under a decade before it was overtaken by increases in the 1980s.

The extent to which the scale of current imprisonment is reversible is a question not of statistics but of the political economy of imprisonment. There are a variety of institutional and political reasons why prison population rates might be stickier on the way down than they proved to be on the way up. Once the physical capacity to imprison has been expanded, there *may* be inertial forces or economies of scale that bias systems to continue to use them. The expanded scale of prison capacity may also reflect changing public preferences for imprisonment and these preferences may endure independent of any real economies in the variable costs of incarceration. And while public preferences and values may not have strong independent influence on rates of imprisonment, this attitudinal

²³ Rosemary Gartner, Anthony Doob & Franklin Zimring, *The Past Is Prologue? Decarceration in California: Then and Now*, CRIMINOLOGY & PUB. POL'Y (forthcoming 2011).

²⁴ FRANKLIN E. ZIMRING, THE CITY THAT BECAME SAFE!, NEW YORK AND THE FUTURE OF CRIME CONTROL ch. 8 (forthcoming 2011).

software might interact with changes in both crime rates and public fear of crime to create political pressures for penal expansion or limits on contraction.

Of all the modern historical trends in imprisonment, the period after 1994 presents the most impressive evidence of asymmetrical volatility for American imprisonment. This was the era when imprisonment rates in the United States defied gravity, when incarceration rates increased while crime rates decreased. To the extent that the attitudes and political circumstances of the middle and late 1990s hold in the future, the case for volatility as a one-way street is quite strong. But there are two reasons to suspect that the conditions that obtained in the late 1990s will vary. The first issue is that longer exposure to stable or declining crime rates might reduce fear and soften public hostility. There may be time lags of some size before declining crime and violence is transformed into assumptions of social safety. The slowing of growth in incarceration rates seven and eight years after the crime decline started may be a typical lag between statistics and perception in public safety.

There is a second respect in which the 1990s may not be representative of future attitudes toward crime and punishment. The mid-1990s was an era of punitive hostility unparalleled in modern U.S. history and this may not have been closely linked to crime rates. The era of three strikes and truth in sentencing may have been driven by unsustainable levels of fear and hostility rather than a continuing chronic condition. What we know for sure after the mid-1990s is that the software of public fear and concern is more predictive of policy than any trends in crime or drug use. What is not known is the variability of public attitudes in the second and third decade of the twenty-first century. Stay tuned!

VI. CONCLUSION

Just as theories of stability of punishment followed sustained periods of little change in prison population, a concern with explaining wide variations in rates of imprisonment grew out of the fourfold expansion of rates of imprisonment in the United States in the generation after 1970. Among the long list of unanswered questions about the determinants of rates of imprisonment is whether the dramatic rise in prison population over the past decades is a new norm for the scale of imprisonment or a precursor to significant declines in the rates of imprisonment in the early decades of a new century.

