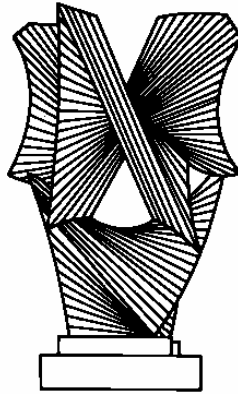


# CHICAGO

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SHOULD WE AGGREGATE MENTAL HOSPITALIZATION AND PRISON  
POPULATION RATES IN EMPIRICAL RESEARCH ON THE RELATIONSHIP BETWEEN  
INCARCERATION AND CRIME, UNEMPLOYMENT, POVERTY,  
AND OTHER SOCIAL INDICATORS?

ON THE CONTINUITY OF SPATIAL EXCLUSION AND CONFINEMENT  
IN TWENTIETH CENTURY UNITED STATES

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Should We Aggregate Mental Hospitalization and Prison Population Rates in Empirical Research on the Relationship between Incarceration and Crime, Unemployment, Poverty, and Other Social Indicators?

On the Continuity of Spatial Exclusion and Confinement  
in Twentieth Century United States

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Paper Presented at the  
Symposium on Punishment Law & Policy  
Panel on the Incarceration Revolution  
University of Texas  
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On the Continuity of Spatial Exclusion and Confinement  
in Twentieth Century United States

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Abstract

The incarceration explosion of the late twentieth century set off a storm of longitudinal research on the relationship between rates of imprisonment and crime, unemployment, education, and other social indicators. Those studies, however, are flawed because they fail to measure confinement properly. They rely on imprisonment data only, and ignore historical rates of mental hospitalization. With the exception of a discrete literature on the interdependence of the mental hospital and prison populations and some studies on explanations for the prison expansion, none of the empirical work related to the incarceration explosion—or for that matter, older research on the prison-crime and prison-unemployment relationships in the 1960s—takes proper account of mental hospitalization rates.

When the data on mental hospitalization are combined with the data on imprisonment for the period 1928 through 2000, the incarceration revolution of the late twentieth century barely reaches the level of institutionalization that the United States experienced at mid-century. The highest rate of aggregated institutionalization during the entire century occurred in 1955 when almost 640 persons per 100,000 adults over the age 15 were institutionalized in asylums, mental hospitals, and state and federal prisons. In addition, the trend line for aggregated institutionalization reflects a mirror image of the national homicide rate during the same period. Using a Prais-Winsten regression model that corrects for autocorrelation in time-series data, and holding constant three leading structural covariates of homicide, this paper finds a large, statistically significant, and robust relationship between aggregated institutionalization and homicide.

These findings underscore, more than anything, how much institutionalization there was at mid-century. The implications are both practical and theoretical. As a practical matter, empirical research that uses confinement as a value of interest should use an aggregated institutionalization rate that incorporates mental hospitalization. At a theoretical level, these findings suggest that it may be the continuity of confinement—and not just the incarceration explosion—that needs to be explored and explained.

On the Continuity of Spatial Exclusion and Confinement  
In Twentieth Century United States

Bernard E. Harcourt<sup>1</sup>

This paper contributes one simple idea to the now vast and exhaustive literature on the incarceration explosion in the United States that began in the late-twentieth century. Though simple, it is an idea that has been entirely overlooked in the quantitative analyses and legal research that use rates of imprisonment as an *independent* variable—in other words, in research that studies the *effects* of different levels of coercive social control on other social indicators. It is the story of the rise and fall of discrete institutions, but of the continuity of institutionalization—a story that resonates well with the writings of Erving Goffman (*Asylums* 1961), Gerald Grob (*The State and the Mentally Ill* 1966), David Rothman (*The Discovery of the Asylum* 1971), and with Michel Foucault's depiction, in *Madness and Civilization* (1961), of the continuity that marked the different stages of Western civilization—from the lazar houses for lepers on the outskirts of Medieval cities, to the Ships of Fools navigating down rivers of Renaissance Europe, to the establishment in the seventeenth century of the Hôpital Général in Paris, that enormous house of confinement for the poor, the unemployed, the homeless, the vagabond, the criminal, and the insane.

The simple idea is that there is a continuity of spatial exclusion and confinement in the United States from the high rates of mental hospitalization in the mid-1950s to the high rates of imprisonment at the turn of the twenty-first century, and that, as a result, *when we measure confinement or coercive social control for purposes of longitudinal research on crime, unemployment, education, or any other social indicator, we should use an aggregated institutionalization rate that includes both mental hospitalization and prison rates.*

With the marked exception of longitudinal research on the interdependence of the mental hospital and prison populations, as well as some empirical research into the causes of the prison

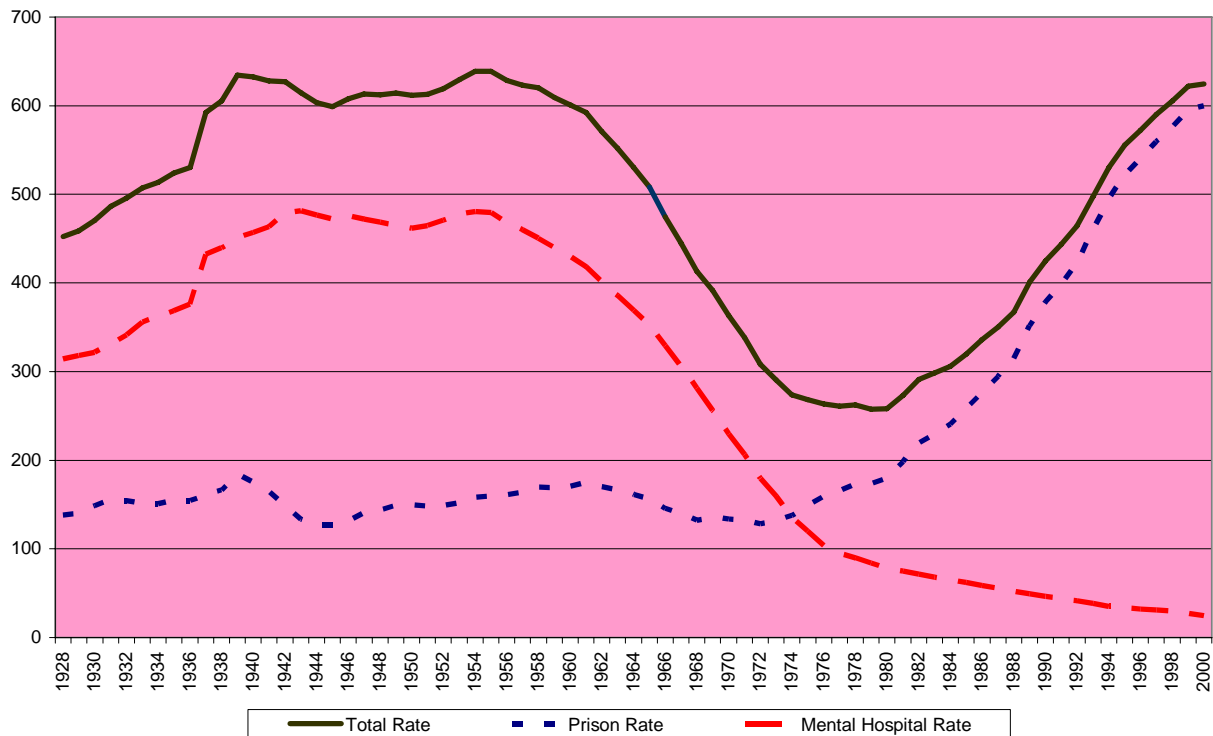
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<sup>1</sup> Special thanks to Andrew Abbott for lengthy and always fascinating discussions of mental hospitals and other institutions; to Steven Levitt, Tracey Meares, John Monahan, Tom Miles, and Steve Messner for comments on the paper; to the participants at the Symposium on Punishment Law and Policy for comments and feedback, especially Rachel Barkow, Jeffrey Fagan, Dan Kahan, Kathleen O'Neill, Kevin Reitz, Jonathan Simon, Carol Steiker, and Jordan Steiker; and to Stephen Schacht at NORC for guidance on the statistical analysis and comments on the paper. For excellent research assistance, I thank Zac Callen, Ellen Fitzgerald, Sam Lim, and Dan Montgomery.

explosion (Steadman, Monahan, et al. 1984; Liska, Markowitz, et al. 1999; Raphael 2000; Pfaff 2004), no published empirical research conceptualizes the level of confinement in society through the lens of institutionalization rather than simply incarceration. None of the longitudinal research that uses confinement as an *independent* variable—in other words, that studies the effects of various social indicators (including confinement) on crime, unemployment, education, or other independent variables—includes mental hospitalization in its measure of confinement. Moreover, none of the *binary* longitudinal studies on confinement—in other words, research that studies the specific relationship between confinement and unemployment, or confinement and crime, or confinement and any other non-mental health related indicator—uses a measure of coercive social control that includes rates of mental hospitalization. Even the most rigorous, recent analyses of the prison-crime relationship use only imprisonment data (*see, e.g.* Defina and Arvanites 2002; Levitt 1996 and 2004; Marvel and Moody 1994). Though a tremendous amount of empirical work has been done on long-term crime trends, structural covariates of homicide, unemployment, and the prison expansion, none of this literature conceptualizes confinement through the larger prism of institutionalization, and none of it aggregates mental hospitalization data with prison rates.

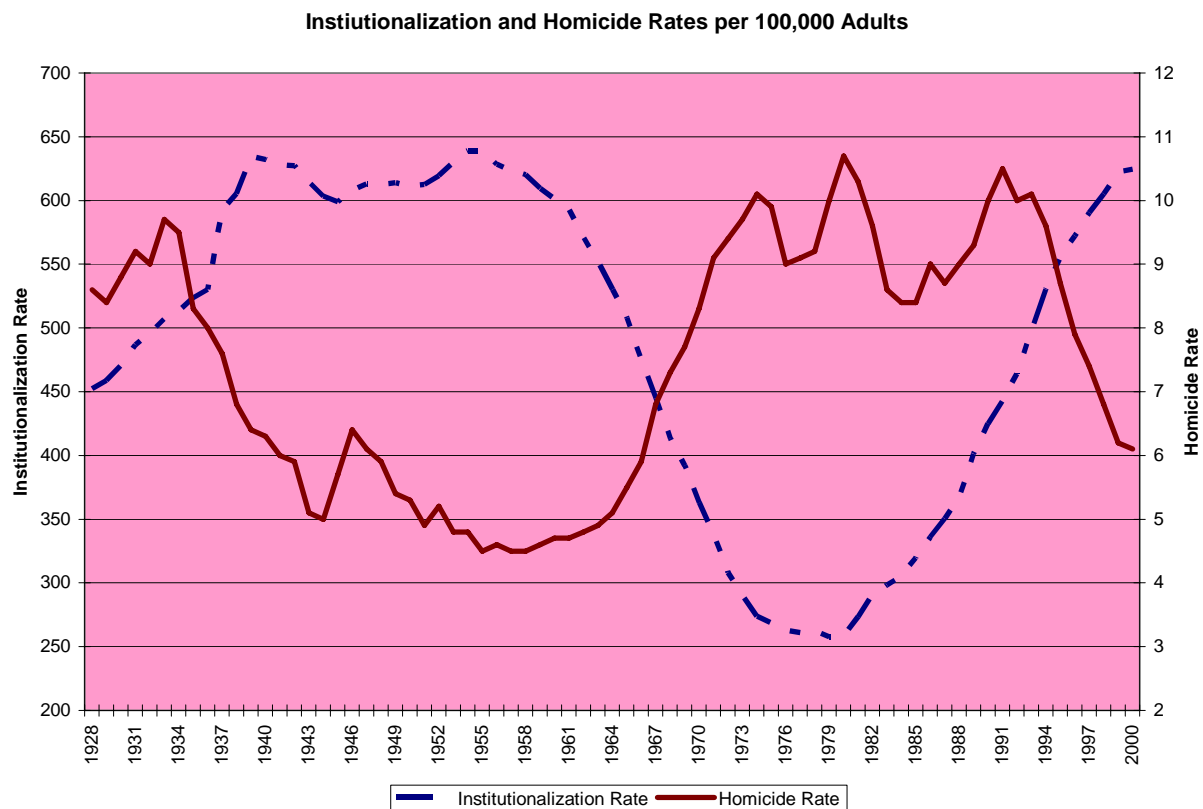
This is remarkable for at least two reasons. First, the empirical data on mental hospitalization reflect extraordinarily high rates of institutionalization at mid-century. Simply put, when the data on mental hospitalization rates are combined with the data on prison rates for the period 1928 through 2000, the incarceration revolution of the late twentieth century barely reaches the level of aggregated institutionalization that the United States experienced at mid century. The highest rate of aggregated institutionalization during the entire twentieth century occurred in 1955 when almost 640 persons per 100,000 adults over the age 15 were institutionalized in asylums, mental hospitals, and state and federal prisons. Throughout almost the entire period from 1938 to 1960, the United States population experienced rates of institutionalization *in excess* of 600 inmates per 100,000 adults. Figure 1 shows the aggregate rate of institutionalization in the United States for the period 1928 to 2000, as well as the disaggregated trend lines for mental hospitalization on the one hand and state and federal prisons on the other:

Institutionalization in the United States (per 100,000 adults)



Aggregating mental hospitalization and imprisonment rates into a combined institutionalization rate significantly changes the trend line for confinement over the twentieth century. We are used to thinking of confinement through the lens of incarceration only, and to referring to the period prior to the mid-1970s as one of “relative stability” followed by an exponential rise—and I include myself here (Harcourt 2001: 4; Harcourt 2006). As a literal matter, this is of course right. If all we are describing is the specific variable in our study and the source of the data, then indeed the observations are relatively stable over the five decades. But the truth is, what we generally are trying to capture when we use the variable, prison rate, is something about confinement, about coercive social control, about institutionalization. And from this larger perspective, the period before 1970—in fact, the entire twentieth century—reflects remarkable instability.

Second, for anyone who has spent time looking at longitudinal data on homicide in the United States, the aggregated institutionalization trend from Figure 1 is shocking: it reflects a mirror image of national homicide rates. This is visually represented in the following figure, Figure 2, using vital statistics data from the National Center for Health Statistics:



The relationship between institutionalization and homicide rates in Figure 2 is remarkable, at least at first glance. Later in this paper, I test and quantify the relationship, and find that, correcting for autocorrelation of the time-series data and holding constant the leading structural covariates of homicide (poverty, demographic change, and unemployment), the relationship is large, statistically significant, and robust. Naturally, the correlation does not begin to explain the relationship. These are aggregated national level time-series data and, as such, they provide weak power to rule out alternative explanations for the patterns observed in the data. But

what this does suggest is that we may need to revisit all of our empirical studies that use the imprisonment rate as a proxy for coercive social control.

The potential implications of aggregating mental hospital and prison data are wide ranging and particularly salient for sociological, criminological, and econometric research into the incarceration-crime relationship.<sup>2</sup> Rethinking confinement through the lens of institutionalization would also significantly impact research in punishment theory, such as studies that have attempted to operationalize and test the central insights of the Frankfurt School—specifically, Georg Rusche and Otto Kirchheimer’s suggestion in *Punishment and Social Structure* that penal strategies are shaped by systems of economic production and fiscal policies. A review of that literature suggests that there is empirical plausibility to the Rusche-Kirchheimer hypothesis (Chiricos and Delone 1992: 431). To date, though, the research has focused only on imprisonment rates.

For instance, in a study titled *Unemployment, Imprisonment, and Social Structures of Accumulation: Historical Contingency in the Rusche-Kirchheimer Hypothesis*, Raymond Michalowski and Susan Carlson refine the test of the Rusche-Kirchheimer hypothesis by periodizing their analyses. Drawing on recent theories about shifts in social structures of accumulation (“SSAs”) in the United States during the twentieth century, the authors break down the years between 1933 and 1992 into four periods: (1) a period of economic exploration from 1933 to 1947 marked by high levels of structural unemployment, labor conflict, and worker displacement, that lead to the emergence of social institutions (welfare state policies and labor accords) that have come to be known as Fordist (1999:224); (2) a period of economic consolidation from 1948 to 1966 marked by increasing economic output, upward trends in real wages, and decreasing unemployment (1999:224); (3) a period of decay from 1967 to 1979 marked by increasing unemployment, eroding labor accords, and the oil crisis of 1973 (1999: 225); and (4) a period of renewed exploration from 1980 to 1992 marked by significant displacement of young men, a shift away from social-welfare strategies, and the growth of the service industry, that some have called the beginning of the post-Fordist period (1999: 226). Using imprisonment rates only, the authors find a weak, though statistically significant impact of

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<sup>2</sup> Not only studies of incapacitation and deterrence, but also research that studies the influence of crime rates on incarceration rates. Much of this work uses data from the early 1970s (e.g. Ouimet and Tremblay 1996 (using *inter alia* 1972 data). Here too, aggregating mental hospitalization rates would have a significant effect.

unemployment on prison admissions during the first period of exploration (1999:237); and a strong impact of unemployment on prison admissions during the third period of decay (1999:238). The trouble is, both of those periods are marked by stability of incarceration, but by instability of institutionalization: using aggregated institutionalization data, the first period (exploration) is characterized by a dramatic increase in the institutionalized population, and the third period (decay) is marked by an exponential decrease in institutionalization.

Another area of research that would be significantly affected is studies of the relationship between education, incarceration, and crime (*e.g.*, Lochner 2004; Jacobs and Lefgren 2003), which again tend to use imprisonment data only.

My purpose in this essay is not to prove an institutionalization-homicide relationship, nor to question the studies on the incarceration-unemployment relationship. Instead, my goal is to reconnect social theory to empirical research: to take seriously the social theory writings on the asylum from the 1960s and 1970s—and on the continuity of spatial exclusion and confinement—and to allow those writings to inform our empirical research. To provoke us all—myself included—to rethink confinement through the lens of institutionalization.

This paper proceeds in three parts. Part I locates the central idea of the paper in the larger literature and reviews some of the empirical research surrounding the incarceration expansion. Part II presents the empirical data on aggregated institutionalization rates and offers preliminary quantitative findings on the institutionalization-homicide relationship. Part III then offers reflections on possible interpretations and directions for future research.

## **PART I: Asylums and Penitentiaries**

Many have gestured at the continuity of spatial exclusion and confinement that marks both the asylum and the penitentiary. Erving Goffman's essays on *Asylums* (1961) are a good place to start. Goffman locates the asylum within the space of what he calls "total institutions"—a class of institutions that includes the prison, the jail, sanitarium and leprosaria, and almshouses for the poor and infirm, as well as the army barrack, boarding schools, and monasteries (1961: 4-5). These total institutions, Goffman explains, are marked by a "basic split" between a group of

inmates removed from the outside world and a staff that is integrated with that outside world (1961: 7). Listen as Goffman introduces his topic:

A total institution may be defined as a place of residence and work where a large number of like-situated individuals, cut off from the wider society for an appreciable period of time, together lead an enclosed, formally administered round of life. Prisons serve as a clear example, providing we appreciate that what is prison-like about prisons is found in institutions whose members have broken no laws. This volume deals with total institutions in general and one example, mental hospitals, in particular. (Goffman 1961:xiii)

It is the continuity—and discontinuities—between the different “total institutions” that Goffman explores in his work, tracing the contours of the asylum inmate’s world and the inmate’s relation to the supervisory staff, and in the process producing a manual on the structure of the self.

David Rothman, in *The Discovery of the Asylum* (1971), similarly explores total institutions, but from the perspective of social history. He too locates the asylum squarely in a shared space with the prison, the sanitarium, the orphanage, and the almshouse. The question Rothman poses is, “Why in the decades after 1820 did [Americans] all at once erect penitentiaries for the criminal, asylums for the insane, almshouses for the poor, orphan asylums for homeless children, and reformatories for delinquents?” (1971: xiii). It is this “revolution in social practice” that Rothman seeks to explore and explain—a revolution that encompasses institutionalization *writ large*. “Institutions,” Rothman observes, “became places of first resort, the preferred solution to the problems of poverty, crime, delinquency, and insanity.” *Id.* In remarkably Durkheimian fashion, Rothman’s answer turns on social and moral cohesion: on the perceived need to restore some form of social balance during a time of instability at the birth of the new republic (*see especially* 1971: xviii and 295). In this quest for stability and social cohesion, the invention of the penitentiary, the asylum, and the almshouse—as well as houses of refuge, reformatories, and orphan asylums—represented the ordering of spatial confinement necessary to appease apprehension of the unknown. It produced, again, a continuity of confinement.

In *Madness and Civilization* (1961), Michel Foucault documented the continuity from the lazar homes for lepers on the outskirts of villages in the Middle Ages to the all encompassing houses of confinement in the seventeenth century, to the birth of the asylum in the modern age.

“Leprosy disappeared, the leper vanished, or almost, from memory,” Foucault remarks; and yet, “these structures remained. Often, in these same places, the formulas of exclusion would be repeated, strangely similar two or three centuries later. Poor vagabonds, criminals, and ‘deranged minds’ would take the part played by the leper. . . . With an altogether new meaning and in a very different culture, the forms would remain—essentially that major form of a rigorous division which is social exclusion but spiritual reintegration” (1965: 7).

Goffman’s “total institutions” were all reunited in the establishment in 1656 by Louis XIV of the Hôpital Général in Paris. Once an arsenal, a rest home for war veterans, and various hospitals—including both hospitals “la grande et la petite Pitié”—the new Hôpital Général would now serve as a house of confinement for the poor, the homeless, the unemployed, the prisoners, and the insane—those who sought assistance and those who were sent there by royal or judicial decree. And in the space of several months, one out of every hundred inhabitants of Paris would find themselves confined in these institutions (Foucault 1965: 38; 1972:59). This model of confinement would be extended across France and, in an edict dated June 16, 1676, Louis XIV would order the establishment of a “*hospital general* in each city of his kingdom” (1965: 41; 1972:62). Similar networks of houses of confinement spread through German-speaking countries, England, Scotland, Ireland, and across Europe.

What characterized these houses of confinement was their indiscriminate nature: “the same walls could contain those condemned by common law, young men who disturbed their families’ peace or who squandered their goods, people without profession, and the insane” (1965:45; 1972: 66). “One-tenth of all the arrests made in Paris for the Hôpital Général concern ‘the insane,’ ‘demented’ men, individuals of ‘wandering mind,’ and ‘persons who have become completely mad.’ Between these and the others, no sign of a differentiation. Judging from the registries, the same sensibility appears to collect them, the same gestures to set them apart” (1965: 65).

And what unified the category, Foucault suggested, was a new ethic of work and moral obligation as a reaction against idleness and economic turmoil—especially the problems of unemployment, the vagabond, the homeless, and the destitute (1965: 46). The classical age brought together the insane and the criminal, the poor and the unemployed, in one unitary category, a “complex unity” that assembled “a new sensibility to poverty and to the duties of

assistance, new forms of reaction to the economic problems of unemployment and idleness, a new ethic of work, and also the dream of a city where moral obligation was joined to civil law, within the authoritarian forms of constraint” (1965: 46). At the heart of it all was a conception of poverty as being the source of all disorder. The houses of confinement were an attempt to create order: the Hôpital Général was expressly established with the goal of preventing “mendicancy and idleness as the source of all disorders” (1965: 47), and it was the culmination of many initiatives to banish paupers from Paris—like the decree of 1606 that “ordered the beggars of Paris to be whipped in the public square, branded on the shoulder, shorn, and then driven from the city” (1965: 47). In the place of total exile, there came confinement: “the unemployed person was no longer driven away or punished; he was taken in charge, at the expense of the nation but at the cost of his individual liberty” (1965: 48). And the numbers were astounding, rising to between five and six thousand people of all ages—men, women, and children: “La Salpêtrière housed 1,460 women and small children; at La Pitié there were 98 boys, 897 girls between seven and seventeen, and 95 women; at Bicêtre, 1,615 adult men; at La Savonnerie, 305 boys between eight and thirteen; finally, Scipion lodged 530 pregnant women, nursing women, and very young children” (1965: 49).

It would take the age of reason—the seventeenth and eighteenth centuries—to identify the category of the insane, and extract the madman from the houses of correction—to see the insane as curable, as subjects of medical knowledge. The post-Revolutionary period expressed outrage and indignation at the idea that the insane would be thrown in with the lot of criminals and paupers (1965:224). “The raving mad. . . are chained in dungeons beside criminals. What a monstrous association! The calm madmen are treated worse than malefactors” (1965: 221). And, through an intricate process, madness was separated—created as another category—within the realm of the unreason.<sup>3</sup> “The undifferentiated unity of unreason had been broken. Madness was

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<sup>3</sup> In *Madness and Civilization*, Foucault traces the shift to a number of factors, including the reaction of elite criminals, the need for industrialized labor, and the development of the medical personage—rather than humanitarian instinct. So, for instance, the outrage is portrayed as the reaction of the criminal nobility against being incarcerated with the insane. “The presence of the mad appears as an injustice; but *for others*,” Foucault wrote (1965:228). The complaints had been heard *from the prisoners*: “one man writes to Maurepas, indignant at being ‘forced to mingle with madmen, some of whom are so violent that at every moment I risk suffering dangerous abuse from them’; another—the Abbé de Montcrif—makes the same complaint to Lieutenant Berryer: ‘This is the ninth month that I have been confined here in this dreadful place with fifteen or twenty raving madmen, pell-mell with epileptics’” (1965: 224). Also, insofar as the turn to industry called for more bodies, confinement of men who could be bettered became unreasonable: “confinement was a gross error, and an economic mistake” (1965: 232). Cure

individualized, strangely twinned with crime” (1965: 228). There was though a commonality they would share—the commonality of confinement: “between madness and confinement, a profound relation had been instituted, a link which was almost one of essence” (1965: 228). This is what gave birth to the asylum—“the happy age when madness was finally recognized and treated according to a truth to which we had too long remained blind” (1965: 241). The common thread running through Foucault’s account—as well as Goffman’s and others’—is precisely this continuity of spatial exclusion: “The asylum was substituted for the lazar house, in the geography of haunted places as in the landscape of the moral universe” (1965: 57).

An outpouring of critical work in the 1960s and 70s, from the Left and from the Right, portrayed the mental hospital as an inherently repressive institution, on par with the prison. Drawing on the writings of Thomas Szasz, *The Myth of Mental Illness* (1961), as well as on the work of Rothman, Foucault, and Ignatieff (1978), these critical writings contributed to the idea of a continuity of confinement (*see generally* Grob 1983:ix-x). From this perspective, mental illness was “an abstraction designed to rationalize the confinement of individuals who manifested disruptive and aberrant behavior” and the asylum’s primary function was to “confine social deviants and/or unproductive persons” (Grob 1983: ix-x).

### *Empirical Social Science Research*

But little of the social theorizing made its way into the measurement of coercive social control for purposes of empirical research, data collection, and statistical analyses. The one exception, of course, involves studies of the interdependence of mental hospitalization and prison populations. This research specifically explores whether the deinstitutionalization of mental hospitals in the 1960s fed prison populations, contributing to the rise in incarceration in the following decades (*see, e.g.*, Steadman, Monahan, et al. 1984; Liska, Markowitz, et al. 1999; Raphael 2000; Pfaff 2004). But other than this specific body of literature, the link between the asylum and the penitentiary has essentially been ignored.

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became important to return the insane to the labor force. Still others saw as their mission to impose a morality on the insane—to return them to the ethical standards of humanity (1965: 259). And there is also the development of the medical personage and medical knowledge. “With the new status of the medical personage, the deepest meaning of confinements is abolished: mental disease, with the meanings we now give it, is made possible” (1965: 270). “If the medical personage could isolate madness, it was not because he knew it, but because he mastered it, and what for positivism would be an image of objectivity was only the other side of this domination” (1965:272).

This is the product, in part, of the balkanization of research on systems of social control (Markowitz et al. 1999). Criminologists and sociologists of punishment have turned most of their attention recently—and justifiably—to the massive prison build-up. Historians of mental health systems, in contrast, have had their own remarkable trend to explain: the massive deinstitutionalization of mental health patients (Gronfein 1985: 192). The focus of their research predominantly was on explaining the move to deinstitutionalization, much of it exploring alternative explanations to the humanitarian and outright deinstitutionalization policies.<sup>4</sup> But the two research interests seem not to have intersected.

It is also, in part, an accident of history, in the sense that much of the longitudinal research into structural covariates of homicide and into the incarceration-crime relationship was conducted using pre-1980 data during a period of perceived stability of imprisonment—for instance, the important work of Alfred Blumstein on the stability of punishment hypothesis (Blumstein and Moitra 1979), research on the prison-crime nexus (*e.g.* Chiricos and Waldo 1970; Bowker 1981; McGuire and Sheehan 1983), the leading studies on covariates of homicide (reviewed in Land, McCall and Cohen 1990), and the research of the NRC's Panel on Research on Deterrent and Incapacitative Effects (Blumstein, Cohen and Nagin 1979). The shock of the incarceration explosion in the 1980s and 1990s led most researchers to revise their earlier findings on the stability of punishment—including Blumstein (1995)—and triggered an outpouring of new research on the effect of incarceration on crime, this time using 1990s data (for a review of that extensive literature, *see* Spelman 2000). But the temporal disjuncture obscured the role of mental hospitalization: by 1995, the number of persons in mental hospitals was so relatively small, that the rate of mental hospitalization seemed insignificant.

It also reflects the wide gulf between critical social theory and quantitative research. Whatever the explanation, though, the result is striking: no published empirical research conceptualizes confinement through the lens of institutionalization. The criminology has failed to connect the prison to the asylum.

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<sup>4</sup> William Gronfein shows, in his article *Incentives and Intentions in Mental Health Policy* (1985), that the structure of reimbursement policies that came into effect with the passage of the federal Medicaid program was the decisive factor in moving toward deinstitutionalization—and not, as many tend to think (Rose 1979; Aviram et al. 1976), the mere policy choice, nor the funding of community mental health centers (1985: 193).

For instance, Alfred Blumstein, in his account of crime trends in the introduction to the edited volume *The Crime Drop in America*—generally perceived as an authoritative compilation on recent crime trends—never addresses aggregated institutionalization. With regard to the sharp increase in crime in the 1960s, Blumstein hits on all the usual suspects—the baby-boom generation, political legitimacy, economics—and includes later the usual explanations for the crime drop—changing drug use patterns, decreased gun violence, New York style policing, federal COPS program, increased incarceration. Notably absent in all of this, though, is the relationship between mental health and prison populations. It is simply nowhere in the analysis. Here, then, are the major causes of the trends from the 1960s to 1990s, according to Blumstein:

The marked growth in violence between 1965 and the early 1970s may have been, at least in part, a result of the decline in perceived legitimacy of American social and governmental authority during this turbulent period, which contained the civil rights movement and the strident opposition to the war in Vietnam. The continuing uptrend from 1970 to 1980 and the decline to 1985 are largely attributable to the movement of the baby-boom generation into and then out of the high-crime ages of the late teens and early twenties; this is reflected in the general stability of violence rates within individual ages during that period. The rise following the 1985 trough should almost certainly be laid at the crack (smokable cocaine) epidemic and the contagion of violence spawned by its markets, which became a major factor in the urban problems of the late 1980s. The decline in the 1990s is a much more complicated story, which involves the numerous factors addressed in the subsequent chapters of this volume. (Blumstein and Wallman 2000b:4)

Those chapters cover gun violence, drug markets, policing practices, demographics and prison population expansion—but do not mention anywhere the mental health nexus.

This is also true of the literature that focuses exclusively on the incarceration-crime relationship. When addressing the role of prison populations, for example, Blumstein refers to the period from 1925 to 1975 as “a fifty-year period of impressive stability.” Blumstein discounts the role of incarceration as too “simplistic,” observing that, “After all, in the 1980s, during the period of the most prodigious growth in imprisonment, violence was increasing most markedly” (Blumstein and Wallman 2000b: 5-6). (Incidentally, neither of these statements is correct if we use an aggregated institutionalization measure).

More recently, Steven Levitt, in his review of the empirical literature on crime, *Understanding Why Crime Fell in the 1990s: Four Factors that Explain the Decline and Six that*

*Do Not*, identifies the prison population build-up as one of the four factors that explains the crime drop of the 1990s. Levitt estimates that the increased prison population over the 1990s accounted for a 12 percent reduction of homicide and violent crime, and an 8 percent reduction in property crime—for a total of about one-third of the overall drop in crime in the 1990s (Levitt 2004: 178-79).

When Levitt extends his analysis to discuss the period 1973—1991, however, he sticks to the prison population exclusively, and does not even consider the contribution of the declining mental hospital population. For this reason, Levitt is surprised that the drop in crime did not start sooner. Regarding the period 1973—1991, Levitt writes:

The one factor that dominates all others in terms of predicted impact on crime in this earlier [1973—1991] period is the growth in the prison population. Between 1973 and 1991, the incarceration rate more than tripled, rising from 96 to 313 inmates per 100,000 residents. By my estimates, that should have reduced violent crime and homicide by over 30 percent and property crime by more than 20 percent. Note that this predicted impact of incarceration is much larger than for the latter [1990s] period. (Levitt 2004:184)

Based on prison data alone, Levitt is left with a significant gap between projected and actual crime rates for the period 1973—1990. “In contrast to the 1990s, the actual crime experience in the 1973—1991 period is not well explained by the set of factors analyzed in this paper. There appears to be a substantial unexplained rise in crime over the period 1973—1991” (Levitt 2004; 186). Levitt finds this surprising given the important effect of incarceration in the 1990s. “In the light of the estimates linking increased incarceration to lower crime, it is perhaps surprising that the rising prison population of the 1980s did not induce a commensurate decline in crime in that period” (Levitt 2004: 179 n.7).

Levitt concludes: “The real puzzle that stands unanswered, I argue, is why crime rates did not start falling earlier” (2004: 164). “The real puzzle in my opinion, therefore, is not why crime fell in the 1990s, but why it did not start falling sooner” (Levitt 2004: 186). The missing piece of that puzzle, though, may well be mental hospitalizations—which, if included in the measure of confinement, would significantly alter the trend from 1973 to 1990. I discuss this further in Part II. If the value of interest is coercive social control, then imprisonment may not capture it all.

## **PART II: Measuring Confinement and Exploring Some Implications**

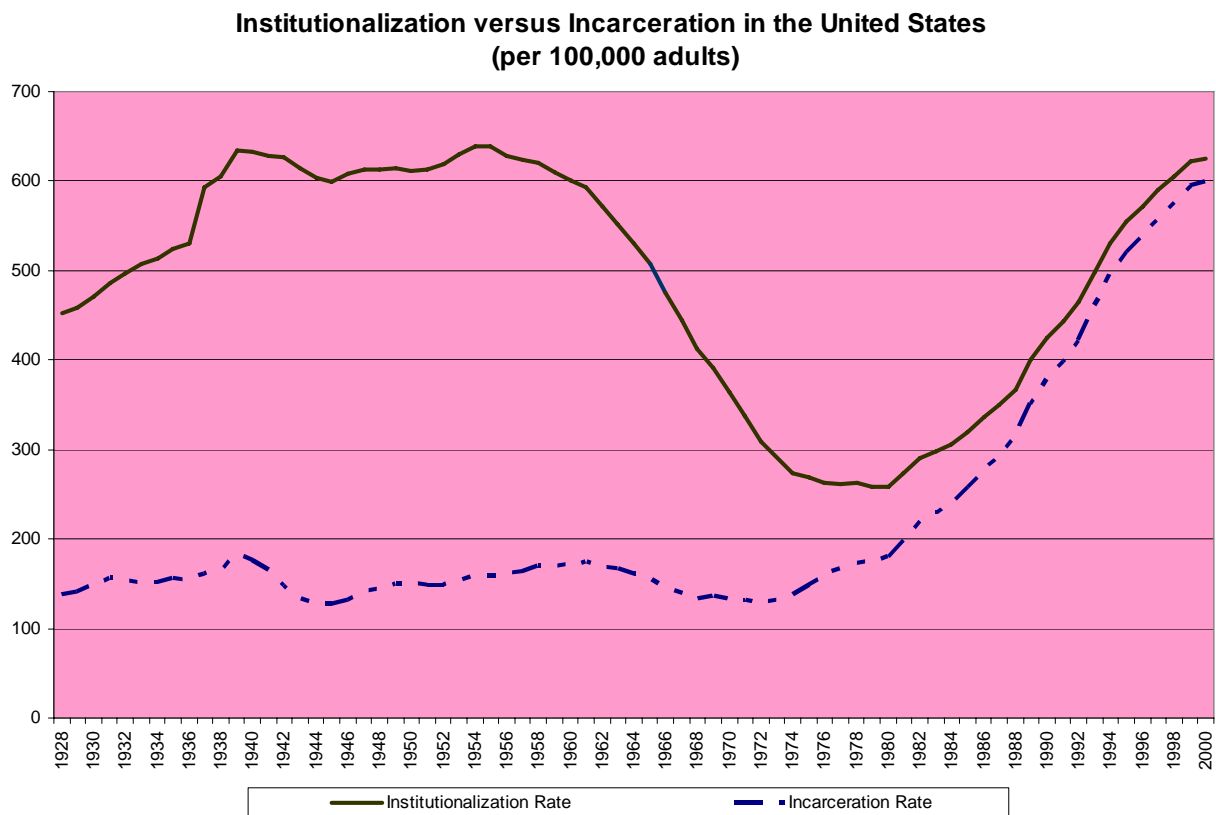
In this part, I turn to the empirical. I present data on the aggregated institutionalization rate for the United States, and explore the relationship between that measure of confinement and homicide rates.

### **A. Aggregating Mental Hospital and Prison Data**

The first task, a simple one, is to aggregate time-series data on the population of mental institutions and prisons—to create an aggregated institutionalization rate. In order to construct such a measure, I draw first on data from the Bureau of Justice Statistics for the number of prisoners under the jurisdiction of state and federal prisons from 1925 to 2004. For data on mental health populations, I draw on several different sources, including the U.S. Department of Commerce publication *Patients in Mental Institutions*, the Center for Mental Health Services' *Mental Health* report, Gerald Grob's *From Asylum to Community* (1991), and an article by Howard Goldman and his colleagues (1983). The resulting data set on mental health populations is nevertheless still missing 17 values over the 72 year period from 1928 to 2000, and so I have linearly interpolated the missing observations. In order to compute the rate of institutionalization per 100,000 adults over 15, I use general population data from the U.S. Census Bureau, *Current Population Reports*.

Because there are no reliable statistics on jail populations—in most cases, no data at all—for the period before 1970, I have not included jail population data in the aggregated institutionalization numbers. In Appendix 1, I discuss jail data and replicate my models using the best available jail data. The results essentially do not change. But because the data on jail populations is so weak, I have not included them in the body of this essay.

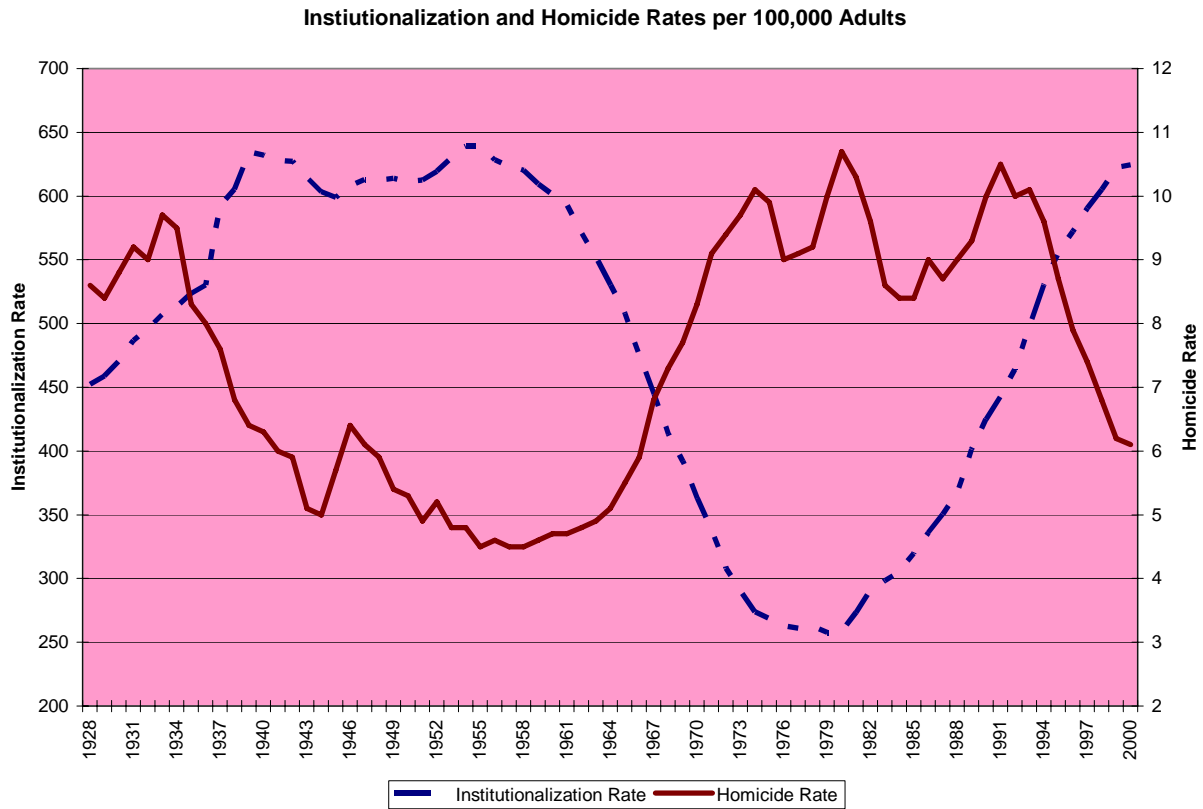
The resulting time-series for the rate of aggregated institutionalization, as compared to the rate of incarceration in state and federal prisons, is represented in Figure 3 below:



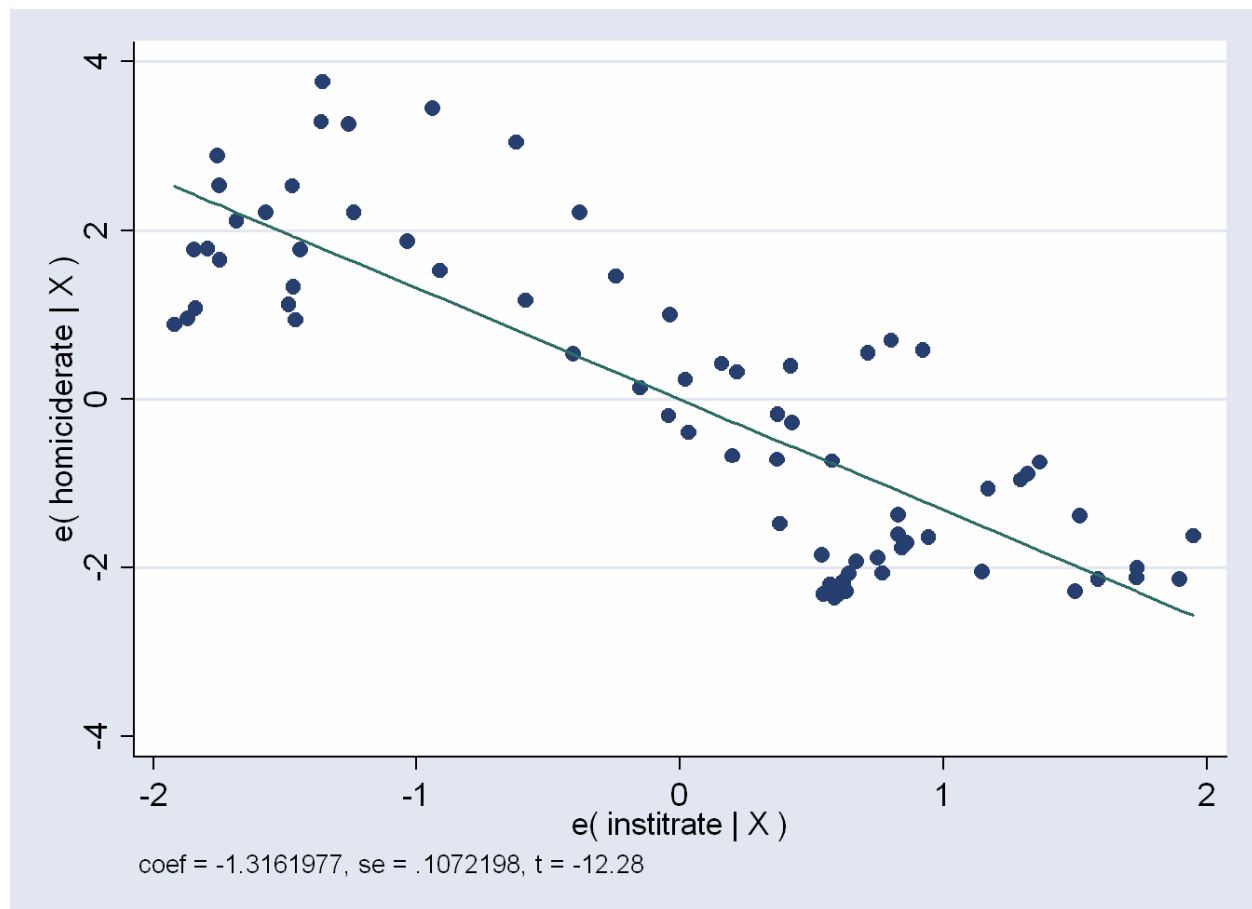
As Figure 3 demonstrates, the trend for aggregated institutionalization for the period 1928 to 1980 differs significantly from the trend for incarceration alone over that period.

#### B. Exploring the Relationship between Institutionalization and Homicide Rates

Anyone who has spent time looking at the homicide trends for the twentieth century will immediately recognize that the aggregated institutionalization rate from Figure 3 is an inverted plot—or mirror image—of the homicide trend line during the twentieth century. This is visually represented earlier in Figure 2, which I reproduce again here. Figure 2 draws its homicide data from the National Center for Health Statistics' *Vital Statistics of the United States*:



The correlation between the aggregated institutionalization and homicide rates is remarkably high:  $-0.78$ . This is reflected in the following scatterplot, Figure 4, which plots the observations for each year between 1928 and 2000 (holding constant, as I discuss in a moment, unemployment and youth demographic change):



(i) Prais-Winsten Regression Model

The relevant data here involve time series, and as a result are highly autocorrelated—the value in the time series at any one time depends heavily on the value in the preceding time(s). In order to adjust for autocorrelation, I employ a Prais-Winsten regression model with an autocorrelation adjustment of one time lag. The Prais-Winsten model essentially eliminates most of the autocorrelation (which is measured on a scale from 0 to 4 by the Durbin-Watson statistic, 0 being highly positively interrelated data, 2 showing no autocorrelation, and 4 being highly negatively interrelated data). In addition, I compare the results I obtain against a Cochrane-Orcutt regression model, which was an earlier method intended to achieve the same result. These

are straightforward models used by many researchers in the study of time-series data. Apart from the adjustment for autocorrelation, the regression model is simple: the aggregate homicide rate serves as the dependant variable, and the rate of institutionalization and other control variables are the regressors.

The control variables that I employ consist of three leading structural covariates for homicide: (1) the unemployment rate, (2) the changing age structure of the United States, and (3) the poverty rate. I run several models that take account of each individually, as well as the combined effect of these other indicators. A word about each of the three controls.

(a) Unemployment

A tremendous amount of research has been conducted on the relationship between rates of crime and unemployment. At the theoretical level, a range of theories of action (from rational action theory, to strain and conflict theories) intuitively suggest that being unemployed may increase the motivation for crime (Carlson and Michalowski 1997: 209-210; Votey 1991: 128-130). On the other hand, as Cantor and Land (1985) suggest, increased unemployment may also decrease the opportunity for criminal activity by reducing crime targets (employed people with money circulating in the neighborhood) (1985: 320-321).

The empirical research on the unemployment-crime nexus has been mixed and inconsistent, and, as a result, different schools of thought have developed on the salience of unemployment. Some, such as James Q. Wilson and James Alan Fox, discount the relationship, arguing that unemployment has little or no effect on crime rates (Wilson and Herrnstein 1985:328; Fox 1978:29 (“The absence of an impact of the unemployment rate on the rate of crime appears at this time to be unequivocal”). Others, however, are less sure.

In a thorough review of the research literature, *Rates of Crime and Unemployment: An Analysis of Aggregate Research Evidence*, Theodore G. Chiricos analyzes the findings from 63 studies containing 288 estimates of the crime-unemployment relationship, and concludes that there is a conditional relationship.<sup>5</sup> Chiricos summarizes his findings: “for all crimes combined,

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<sup>5</sup> Three other earlier and less exhaustive reviews of the literature include Gillespie 1978 (reviewing 21 studies and finding a modest conditional relationship); Long and Witte 1981 (reviewing 16 studies involving unemployment and

the U-C relationship is three times more likely to be positive than negative (75/25 percent) and more than 15 times as likely to be significant/positive as significant/negative (31/2 percent). More meaningful, of course, are comparisons of U-C findings for specific types of crime. Table 1 reveals that *property* crimes are more likely than *violent* crimes to produce positive results (85/64 percent) and significant/positive results (40/22 percent)” (Chiricos 1987: 192).

One of the main difficulties in studying the unemployment-crime nexus concerns measurement. The official rate of unemployment reported by governmental agencies typically includes only those persons who have been looking for work during the past month or months, but does not include persons who have given up their job search or have never looked for work. The latter are not considered to be within the labor force, and therefore are not considered unemployed (Chiricos 1987: 187 n.1). Naturally, this complicates matters significantly and suggests that official unemployment data may only work as a proxy for the condition of the labor force.

Because of the basic structure of my institutionalization data, there are few choices to be made regarding the unemployment data: we are dealing here with national data collected annually that covers the whole adult population. It turns out that this is not the method of analysis that produces the most highly consistent positive results in the unemployment context. In fact, this format is possibly the least favorable to the unemployment explanation: national level data show less consistently strong results than sub-national, violent crime is less strong than property crime, and long-term data is less strong than more recent data since the 1970s. Nevertheless, it is still important to factor in the effect of unemployment.

The measure I have chosen is the official unemployment rate reported by the U.S. Census and Department of Labor, which consists of the percentage of the civilian labor force that is unemployed, in thousands of persons 16 years old and over (prior to 1947, 14 years old and over), annual averages. For these data, I have drawn on the U.S. Census Bureau’s *Historical Statistics of the United States: Colonial Times to 1970*, for the period 1925—1970; and on data from the U.S. Department of Labor Bureau of Labor Statistics for the period 1940-2004.

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finding modest conditional relationship); and Freeman 1983 (reviewing 18 studies and concluding that the relationship is modest and insufficient to explain upward trend in crime).

(b) Demographics

Another privileged explanation for long-term crime trends is the demographic-change hypothesis (*see generally* Fox 2000). The central intuition here is that variations in the composition of the population consisting of higher offending subgroups (such as 15 to 24 year old males) will have significant effects on the overall societal crime rate. From this compositional effects perspective, the three central axes of demographic concern are age, gender, and race. This flows from research that consistently shows that, at the individual level, “young people, males, and members of disadvantaged minorities are at comparatively high risk of becoming offenders and victims, at least with respect to the common ‘street’ crimes” (South and Messner 2000: 84).

A lot of research consistently attributes a large portion of the rise in crime during the 1960s to the post-World War II baby boom which spanned the period 1946—1964 and produced a large number of high-risk persons aged 14 to 24 during the 1960s and 1970s (Blumstein and Nagin 1975; Laub 1983). There is debate, though, over the extent of the influence—as well as over how to interpret the results. Lawrence Cohen and Kenneth Land (1987) studied the relationship between the proportion of the population between 15 and 24 and variations in homicide and auto theft rates, and found a highly significant statistical relationship accounting for a substantial fraction of the change. In contrast, Steven Levitt conducted a study published in 1999 titled *The Limited Role of Changing Age Structure in Explaining Aggregate Crime Rates*, and found that “the changing age distribution can explain only 10—20% of the dramatic rise in crime observed between 1960 and 1980” (Levitt 1999: 582). Levitt characterizes this as “a limited impact” (1999: 581). James Alan Fox and Alex Piquero (2003: 354) contend that about 10 percent of the drop in crime in the 1990s was due to changing demographics and refer to this as “deadly demographics.” So the estimates and especially the interpretations vary significantly.

Here, too, there are different methods and choices in analyzing the demographic change hypothesis. The simplest approach is to regress the crime rates using demographic and other variables as regressors. In a review of 90 such studies, Thomas Marvell and Carlisle Moody (1991) find that only a small number find significant relationships. Again, however, given my institutionalization and homicide data, this is the only feasible approach here. Other approaches

include computing and comparing hypothetical rates of disaggregated group offending based on different population compositions (Levitt 1999).

The population data I use are drawn from the United States Census Bureau, *Current Population Reports*. Based on the data from those reports, I calculate the percentage of the total population represented by 15 to 24 year olds. A couple of caveats regarding the data: first, beginning in 1959, the populations of Alaska and Hawaii are included in the data, resulting in a 750,000 person increase in the population (or 4.2%) that year. Also, the population estimates are all July estimates. Since there is going to be a slight time discrepancy, I have decided to lag this variable: in the statistical analysis, I use July 1927 population data in the regression to represent Dec 31, 1927 population. Finally, the population estimates for the period 1940 to 1979 include Armed Forces overseas, whereas the earlier and later periods do not. Naturally, this will have a slight distortion on the analysis, since it increases the population between the ages of 15 and 24 for the period 1940 to 1979. The total number of 15 to 24 year olds, though, is so large (24 million and 42.5 million respectively for 1940 and 1979) that the distortion is barely noticeable.

(c) Poverty

The third and last control variable in the models is poverty rates. In their seminal study, *Structural Covariates of Homicide Rates: Are There Any Invariances Across Time and Social Space* (1990), Kenneth Land, Patricia McCall, and Lawrence Cohen review twenty-one of the leading homicide studies and find that “by far, the strongest and most invariant effect is due to the resource-deprivation/affluence index; consistently across the four decennial census periods, cities, metropolitan areas, or states that are more deprived have higher homicide rates, and those that are more affluent have lower rates.” The trick again, however, is measuring poverty. The most widely used method is to rely on the official Census count of the percentage of households (families) below the poverty line. Since this is often highly correlated with other indicators of socio-economic status, some researchers will create an index for resource deprivation. However, in order to avoid biases in the construction of the index, I use the official poverty rate directly from the U.S. Census Bureau. The rates are only available from 1959 onwards, when the poverty line was first measured—so the regressions including this variable use a smaller number of observations ( $N = 42$ , rather than 73 as in all the other regressions).

There are, of course, other popular explanations for major recent crime trends, but they do not tend to explain *both* the earlier increase in crime in the 1960s and the drop in 1990s. So, for instance, many point to the change in street drug markets during the 1990s and the decline of crack cocaine consumption as a leading explanation for the sharp drop in crime in the 1990s (Johnson, Golub and Dunlap 2000; Levitt 2004). Others point to the dispersion of activities away from the family and households in the period following World War II (Cohen and Felson 1979: 604—605). And then, of course, there is the abortion hypothesis (Donohue and Levitt 2001). My models do not take account of these other possible explanations.

(ii) Findings

Table 1 shows that, regardless of the model specification, the aggregated institutionalization rate has a statistically significant correlation with the homicide rate, and that the contribution of institutionalization is far more important than that of other statistically significant control variables. So, for instance, looking at Model 4, which holds constant unemployment and demographic changes, institutionalization is at least two times more influential than unemployment (with a beta of  $-.876$  versus  $.402$  for unemployment). The Prais-Winsten coefficient of  $-1.119$  for institutionalization in Model 4 suggests that an increase in institutionalization of 1 per 1,000 adults is likely to translate into a reduction in the homicide rate of 1.119 per 100,000—with a 95 % confidence level ranging from  $-1.74$  to  $-0.5$ .

Institutionalization remains robust regardless of model specification. In all but one case, it is statistically significant at the  $.001$  level (and that one case is significant at the  $.002$  level), and, broadly speaking, is in the same range of influence. This is not entirely surprising because, in this case, the two trends—aggregated institutionalization and homicide rates—are practically mirror images and so highly correlated. As a result, regardless of the model, the result is likely going to be statistically significant.

**Table 1**

**The Effect of Aggregating Institutionalization on the Incarceration-Crime Nexus:  
Prais-Winsten Autocorrelation Adjustment at Lag 1 (AR1) Regression Results**

Dependent variable = Homicide Rates, 1928—2000

Explanatory variables:	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Institutionalization:						
Prais coefficient	-1.085***	-1.107***	-1.067***	-1.119***	-1.312***	-1.723***
Standard error	(.264)	(.251)	(.327)	(.309)	(.347)	(.44)
P value	0.000	0.000	0.002	0.001	0.001	0.000
OLS beta		-.78	-.78	-.876	-.502	-.911
Unemployment:						
Prais coefficient		.051**		.051**		.072
Standard error		(.025)		(.025)		(.102)
P value		0.042		0.043		0.484
OLS beta		.31		.402		.12
Proportion 15 - 24:						
Prais coefficient			0.014	-.01		-.4
Standard error			(.149)	(.14)		(.196)
P value			0.924	0.946		0.049
OLS beta			-.009	-.219		-.58
Poverty:						
Prais coefficient					.046	-.081
Standard error					(.102)	(.114)
P value					0.654	0.482
OLS beta					-.417	-.364
Durbin-Watson statistic pre-Prais-Winsten	0.1319	0.186	0.1319	0.235	0.213	0.36
Durbin-Watson statistic post-Prais-Winsten	1.3278	1.4678	1.3244	1.47	1.051	1.156
OLS R-squared	0.609	0.706	0.609	0.736	0.647	0.832
N	73	73	73	73	42	42

\* = statistically significant at 10 percent cutoff. \*\* = 5 percent cutoff. \*\*\* = 1 percent cutoff.

The same cannot be said, though, of the relationship between the prison rate alone (excluding mental health populations) and the national homicide rate. Table 2 summarizes the results of Prais-Winsten regressions using similar model specifications. As Table 2 demonstrates, the initial statistical relationship between prison and homicide rates vanishes pretty quickly as soon as other control variables, such as demographic change and poverty rates, are included in the models. It is fair to say, from Table 2, that there is no robust relationship between the long term trends when prison rates, rather than aggregated institutionalization rates, are used.

Overall, the analyses suggest that including mental health data in the rate of institutionalization—rather than using prison rates only—is likely to have significant effects on the study of the relationship in the United States between confinement and crime during the twentieth century. Although it is tempting to discuss incapacitation here, far more research is necessary before we can begin to evaluate possible explanations for the relationship.

One additional comment: a problem with the analysis here is that there may be simultaneity bias. The relationship between crime and institutionalization is likely to be two-way: although increased institutionalization is likely to decrease crime rates through incapacitation, increased crime is also likely to increase institutionalization through convictions and sentencing. As a result, the incapacitation effect of institutionalization on crime is probably diminished and the statistical estimates are likely to understate the effect—as Levitt suggests, “perhaps dramatically” (Levitt 1996: 322). But the effect of this bias, if there is one, would only be to *underestimate* the effect of aggregated institutionalization on crime, and that would only *increase* the effect of aggregated institutionalization on homicide.

**Table 2**

**Using Prison Rates Only in Studying the Incarceration-Crime Nexus:  
Prais-Winsten Autocorrelation Adjustment at Lag 1 (AR1) Regression Results**

Dependent variable = Homicide Rates, 1928—2000

Explanatory variables:	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Prison Rate:						
Prais coefficient	-.0073*	-.009**	-.004	-.006	-.006	-.005
Standard error	(.004)	(.004)	(.004)	(.005)	(.004)	(.006)
P value	0.066	0.033	0.375	0.210	0.144	0.390
Unemployment:						
Prais coefficient		.053**		.049*		.158
Standard error		(.026)		(.026)		(.123)
P value		0.048		0.064		0.206
Proportion 15 - 24:						
Prais coefficient			.225	.191		.05
Standard error			(.171)	(.169)		(.316)
P value			0.191	0.263		0.876
Poverty:						
Prais coefficient					-.086	-.196
Standard error					(.109)	(.182)
P value					0.437	0.288
Durbin-Watson statistic pre-Prais-Winsten	0.0669	0.0885	0.1385	0.136	0.194	0.612
Durbin-Watson statistic post-Prais-Winsten	1.109	1.221	1.127	1.229	0.947	0.992
OLS R-squared	0.0495	0.174	0.508	0.511	0.472	0.81
N	73	73	73	73	42	42

\* = statistically significant at 10 percent cutoff. \*\* = 5 percent cutoff. \*\*\* = 1 percent cutoff.

(iii) Estimating the Effects

Despite possible simultaneity bias, the influence of aggregated institutionalization on the homicide rate is large and robust. Based on the six models, we can estimate (using the 95 percent confidence intervals) that the effect may be somewhere between a low of -0.415 and a high of -2.014. This means that a one person increase in the rate of aggregated institutionalization per 1,000 adults (or an increase of 100 per 100,000) is associated with a decrease in the homicide rate of between 0.4 and 2 persons per 100,000 adults—in a universe where the homicide rates have varied between 4.5 and 10.7, with a mean of 7.4 over the period 1928 to 2000. A summary of the 95 percent confidence intervals for the six models from Table 1 follows:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
High	-1.612	-1.608	-1.072	-1.736	-2.014	-2.614
Low	-0.559	-0.605	-0.415	-0.502	-0.609	-0.831

Another way to estimate the possible effect is to go back to Steve Levitt's 2004 review of crime trends in the *Journal of Economic Perspectives*. Recall that Levitt finds, based on his best estimates, that the elasticity of crime with respect to the prison population is -0.30 for homicide and violent crime and -0.20 for property crime (2004: 178). This leads Levitt to the following estimates:

	Incarceration Rate			Homicide	Violent Crime	Property Crime
	1991	2001	Change			
1990s	313	470	+50.2%	- 12%	- 12%	- 8%
	1973	1991	Change			
1973—1991	96	313	+226%	- 35%	- 35%	- 24%

Recall also that Levitt's estimates for homicide for the period 1973—1991 are off by a net 25 percent. Levitt's total estimated effect on homicide from his 10 factors is -20 percent, but the actual change in UCR reported homicides is up 5 percent. This leads Levitt to conclude that "There appears to be a substantial unexplained rise in crime over the period 1973—1991" (Levitt 2004: 186).

The unexplained difference vanishes, however, if we include mental hospitalization in the aggregated institutionalization rate: the increase in confinement from 1973 to 1991 would only have been 152 per 100,000, or up 52 percent, from a rate of 291 in 1973 to a rate of 443 in 1991. Based on Levitt's estimates, this would have translated into a 12 percent decrease in homicides, not a 35 percent decrease. Levitt's revised estimate for the total affect of his 10 factors on homicide during the 1973—1991 period would be an increase in homicides of 3 percent, which is not far from the actual reported change in the UCR of a positive 5 percent. In other words, using aggregated institutionalization data rather than prison data would eliminate Levitt's disparity regarding the change in homicides.

### **PART III: Implications and Directions**

Rethinking confinement through the lens of institutionalization puts the incarceration revolution of the late-twentieth century in a different light. If hospitalization and prison rates are aggregated, the United States is only now beginning to reach the levels of institutionalization that were commonplace from the mid-1930s to the mid-1950s. Naturally, this tells us nothing about the *proper amount of confinement* in society, nor should it alter our perception or evaluation of the incarceration revolution of the late twentieth century. What it does underscore, more than anything, is how much institutionalization there was in the 1930s, 40s, 50s, and 60s. Perhaps, then, it is the continuity of confinement—and not only the most recent exponential increase in imprisonment—that we need to study empirically and explain.

One obvious objection is that these are two very different populations. Although there may be some overlap at the margin, it is hard to believe that the same people who were deinstitutionalized would end up in prison. The continuity thesis is, in this sense, shocking to our sensibilities about the “insane” and the “criminal.” This raises the question of the interdependence of the two populations, an area that has received significant research attention.

In their 1984 study, *The Impact of State Mental Hospital Deinstitutionalization on United States Prison Populations, 1968—1978*, Henry Steadman, John Monahan and their colleagues test the degree of reciprocity between the mental health and prison systems in the wake of state mental hospital deinstitutionalization. They use both a comparative and longitudinal approach. Their study randomly selected a total of 3,897 male prisoners and 2,376 adult male admittees to state mental hospitals from six different states, half from 1968 and the other half from 1978. They gathered full institutional histories for arrests, imprisonment, and state mental hospitalization for each inmate and then compared the system overlap between 1968 and 1978. They were able, thus, to measure the extent of cross-institutionalization: the change in the number of prisoners with prior mental health contacts, as well as the change in mental health patients with criminal records.

Regarding the number and proportion of prison admittees with one or more prior mental hospitalizations, Steadman and Monahan found significant variation between the six states.

Texas experienced a huge increase, California and Iowa an increase as well, but New York, Arizona and Massachusetts experienced proportional declines. Naturally, it was a period of rapid expansion in the prison population, with prison admissions up 42.4 percent for the six states from 1968 to 1978. During that period, the overall number of prisoners in the six states with prior hospitalization almost doubled, up 97.3% (Steadman et al. 1984:481 Table 2).

Consolidating their tables, and calculating total figures, their findings can be summarized as follows:

	Number of Prison Admittees with Prior Hospitalization			Percentage of Prison Admittees with Prior Hospitalization		Expected 1978 Number Using 1968 Percentages	Percent Difference Actual vs. Expected
	1968	1978	Change	1968	1978		
NY	741	797	+7.6	12.1	9.3	1,037	-23.1
CA	1,069	1,777	+66.2	9.5	15.2	1,111	+59.9
AZ	35	39	+11.4	3.9	2.2	69	-43.5
TX	18	1,004	+5,477.8	0.3	8.4	35	+2,768.6
IA	64	153	+139.1	7.7	16.7	71	+115.5
MA	54	139	+157.4	12.5	9.0	194	-28.4
Total	1,981	3,909	+97.3%	7.7%	10.7%	2,517	+55.3%

Because three states (New York, Arizona, and Massachusetts) experienced relative declines—that is, taking into account the increase in the prison population—Steadman and Monahan conclude from these data that there is little evidence of movement from the mental hospitals to prisons: “the percentage of former patients among the ranks of prison admittees decreased in as many study states as it increased” (1984: 483). Thus, “little evidence was found to support the idea that mental hospital deinstitutionalization was a significant factor in the rise of prison populations during th[e] period [1968 to 1978]” (1984: 490).

On the other side of the equation, Steadman and Monahan do find evidence that mental hospitals were becoming more “criminal” (1984: 487). Holding constant the changes in total mental hospital admissions for the six states—which were down nine percent from 1968 to 1978—the number of mental hospital admittees with one or more prior arrests increased by an average 40.3 percent, and the number with a prior imprisonment increased on average by 60.4 percent. “In all study states but Iowa, the actual number of hospital admittees with one or more prior arrests is substantially higher (from 11.7% to 99.9%) than would be expected from total admission trends” (1984: 486).

My interpretation of their prison data is less sanguine. Although the state-by-state breakdown is even, the aggregated numbers tell a different story. The number of inmates with a prior mental hospitalization is more than 50 percent higher than would have been expected given the prison growth. To be sure, it does not account for all of the prison expansion. In this sense, Steadman and Monahan are undoubtedly right: the evidence does not show that deinstitutionalization *explains* the prison explosion. It does not establish direct transfer from the asylum to the penitentiary. But there may be significant overlap and, over time, more substitution. The proportion has increase by more than half. It is consistent at least with some interdependence. The real question is, how much?<sup>6</sup>

Steven Raphael (1999) tackles this question using an econometric model in his paper *The Deinstitutionalization of the Mentally Ill and Growth in the U.S. Prison Populations: 1971 to 1996*. Raphael tests for a relationship between mental hospitalization and prison populations using state-level data for the period 1971 to 1996. And what he finds, across his six different models, is that the mental hospitalization rate has a statistically significant and robust negative effect on prison rates. Moreover, the magnitude of the effect is large and ranges from a low of 7 to a high of a 2 person decline in mental hospitalization resulting in a one person increase in the prison rate. Translated into actual population numbers, Raphael’s findings suggest that deinstitutionalization from 1971 to 1996 resulted in between 48,000 and 148,000 additional state prisoners in 1996, which, according to Raphael, “accounts for 4.5 to 14 percent of the total

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<sup>6</sup> Another problem with their analysis is that the reduction in mental health care starting in the 1960s may itself reduce the number of mental health contacts for individuals who end up in prison. Measuring the interdependence of the two populations based on prior mental hospitalization will not capture mental illness properly if there is less and less care that leaves traces on the general population.

prison population for this year and for roughly 28 to 86 percent of prison inmates suffering from mental illness” (Raphael 1999: \*12). What we also know is that, at the close of the twentieth century, there was a high level of mentally ill offenders in prisons and jails in the United States—288,000 in 1998—representing 16 percent of jail and state prison inmates (Ditton 1999; Raphael 1999).

*Back to Social Theory*

The problem with these empirical analyses, though, is that again they take too literally the official categories of the “mentally ill” and of the “criminal.” The diagnosis and documentation of mental illness needs to be problematized, as does the guilty verdict. The empirical studies put too much credence in the official labels. These categories are not natural and do not have independent validity and objective signification. The question is not, “How many people with mental illness are in the criminal justice system?” Rather, the question should be, “Has the criminal justice system caught in its wider net the type of people at the margin of society—the class of deviants from predominant social norms—who used to be caught up in the asylum and mental hospital?” The real challenge is to deconstruct *both* the categories of the “insane” *and* of the “criminal” *simultaneously*.

The first is easy. With regard to the asylum, we are all constructivists today. We all accept the claim that criminality was medicalized in the early twentieth century. As Liska and Markowitz suggest, correctly, “During the first half of the 20<sup>th</sup> century, psychiatrists medicalized social problems, successfully arguing that the cause of many social problems, like crime, lies in the psychological malfunctioning of people and that the solution lies in their treatment by medical specialists in treatment centers” (1999: 1747). Or as William Gronfein explains:

In Goffman’s words (1961: 352), “part of the official mandate of the public mental hospital is to protect the community from the danger and nuisance of certain kinds of misconduct.” Publicly supported insane asylums represented an uneasy, albeit surprisingly successful, marriage between asylum and prison, a fact that was of particular importance in contributing to their long term growth. (Gronfein 1985: 194)

On this, we all agree: the category of the “insane” was created in modern times to capture the deviant and marginal. In order to make sense of the larger trend in institutionalization, we need to view the “criminal” through the same prism. Is it possible that the category of the

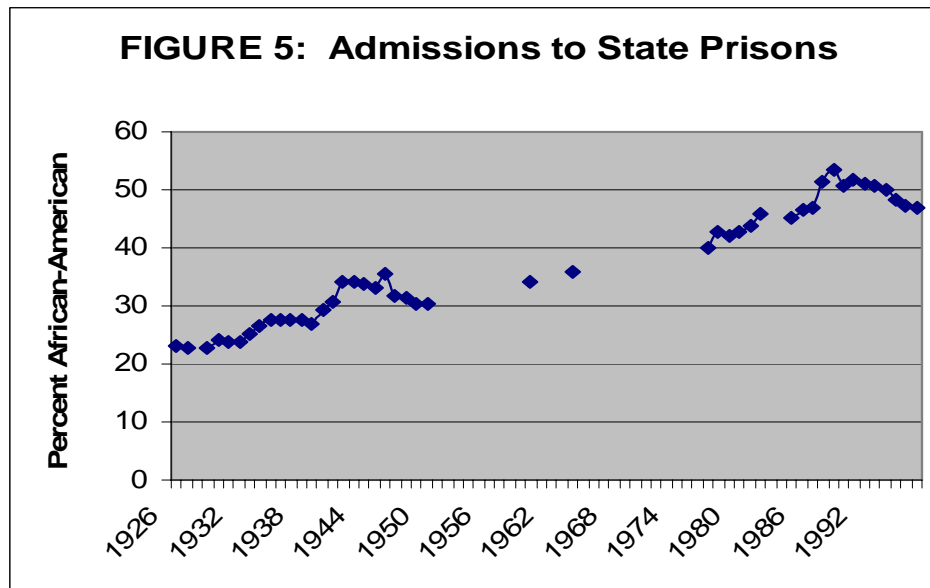
present-day criminal does the same work that used to be done by the category of the insane? Might it capture the same class of norm violators, the same kind of deviants?

Certainly there are important demographic differences. The gender distribution, for instance, was far more even in mental hospitals than in prisons. In 1966, for example, there were 560,548 first time admissions to mental hospitals of which 310,810 (or 55.4 percent) were male and 249,738 (or 44.6 percent) were female (U.S. Dept. of Health, Education, and Welfare, *1967 Mental Health Facilities Report* (1969)). In contrast, new admittees to state and federal prison were consistently 95 percent male throughout the twentieth century (Cahalan 1986: 66). There were also sharp differences in racial and age compositions—which I discuss next. But within the demographic group—within the set of male inmates, for instance—could the categories have served the same function, at least roughly? Steadman and Monahan gesture at this in their study, suggesting that the relationship between the mental health and prison systems may be indirect, “mediated by community reaction towards all types of socially marginal groups when the societal tolerance level for deviance is exceeded” (Steadman et al. 1984). This is one direction to pursue.

And how does race figure into the equation, since it is such an important part of the incarceration expansion—since the prison has become, as Loic Wacquant suggests, the last of our peculiar institutions (Wacquant 2001)? There is some evidence to suggest that the proportion of minorities in mental hospitals was increasing during deinstitutionalization. From 1968 to 1978, for instance, there was already a demographic shift among mental hospital admittees. In Steadman and Monahan’s data, for instance, the proportion of non-whites increased from 18.3 percent in 1968 to 31.7 percent in 1978: “across the six states studied, the mean age at hospital admission decreased from 39.1 in 1968 to 33.3 by 1978. The percentage of whites among admitted patients also decreased, from 81.7% in 1968 to 68.3% in 1978” (1984: 479). There was less stark a shift in prison admissions in their data, though the direction of change was the same: “Across the six states, the mean age of prison admittees was 29.0 in 1968 and 28.1 in 1978. The percentage of whites among prison admittees was also relatively stable, decreasing only from 57.6% in 1968 to 52.3% in 1978” (Steadman et al. 1984: 479).

At the national level, though, the racial shift in prison admissions began well before 1968. In fact, throughout the twentieth century, African-Americans have represented a

consistently increasing proportion of the state and federal prison population. Since 1926, the year the federal government began collecting data on correctional populations, the proportion of African-Americans newly admitted to state prisons has increased steadily from 23.1 percent in 1926 to 45.8 percent in 1982. It reached 51.8 percent in 1991, and stood at 47 percent in 1997. This trend is illustrated in Figure 5 below:



In 1978, African-Americans represented 42.6 of newly admitted inmates in state prisons. That same year, minorities represented 31.7 percent of newly admitted patients in mental hospitals—up from 18.3 percent in 1968. Is it possible that, as the population in mental hospitals became increasingly African-American and young, our society gravitated toward the prison rather than the mental hospital as the proper way to deal with at-risk populations? This too would require further investigation.

Overall, it is the differences and the gradual changes in the demographic composition of the two populations that stick out. The mental hospitalization population was far more evenly distributed along gender lines, was an older population, and tended to be more white. But the demographic distributions changed over time, and this gradual change calls for explanation. It also significantly affects the interpretation of a possible relationship between institutionalization

and homicide. After all, the mental hospital population was largely female, and statistically women are far less likely to be violent offenders. How then could there be any continuity in the effect on serious violent crime? And if there is indeed a continuing effect, might that suggest that the present prison population also includes a sizeable portion of low-risk offenders? In other words, have the women in the mental hospitalization populations been replaced by non-violent drug offenders in the prison populations? Also, if there is indeed a relationship, does it suggest that the *type of institutionalization* doesn't matter: regardless of whether we use mental hospitals or prisons, we achieve the same result. If so, does this militate in favor of returning to a medicalized model?

### Conclusion

Michel Foucault writes, in *Madness and Civilization*, that “There must have formed, silently and doubtless over the course of many years, a social sensibility, common to European culture, that suddenly began to manifest itself in the second half of the seventeenth century; it was this sensibility that suddenly isolated the category destined to populate the places of confinement. To inhabit the reaches long since abandoned by the lepers, they chose a group that to our eyes is strangely mixed and confused. But what is for us merely an undifferentiated sensibility must have been, for those living in the classical age, a clearly articulated perception” (1965: 45).

To our eyes, the categories of “mental illness” and “criminality”—and the corresponding populations of the mental hospital and the prison—seem so distinct, so different, so particular. With the exception of the 16 percent or more prison inmates who are suffering from mental illness, it seems to many of us so wrong and confused to mix the categories. It seems almost insulting to aggregate the two populations into one variable. But is it? Will later generations question our own inability to see and take into account the continuity of spatial exclusion and confinement? Will they question our own balkanization of research on social control? Will they question our categories?

Of course, the story may be even more complicated. Perhaps I have not even begun to scratch the surface of institutionalization. After all, Goffman included in the set of total institutions the army. Should we add the armed forces as part of our institutionalization count?

Also, in the mental health area, many of the persons who were deinstitutionalized moved into private facilities. As William Gronfein writes, “many former patients have been ‘transinstitutionalized’ rather than deinstitutionalized, moving from state-supported asylums to privately run nursing homes or board-and-care homes” (1985: 193).<sup>7</sup> Should we include nursing homes as well? How exactly should we define institutionalization? Where do we place the contour of the total institution?

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<sup>7</sup> Gerald Grob notes that “much of the decline in the number of patients in mental hospitals was more apparent than real. During the 1960s the number of mental patients in chronic nursing homes rose precipitously as states attempted to reduce their expenditures by taking advantage of new federal programs” (Grob 1983: 317). So, for instance, whereas mental hospital populations decreased sharply and rapidly from over 500,000 in 1963 to under 370,000 six years later in 1970, “the number of individuals with mental disorders in chronic nursing homes increased from 221,721 to 426,712 (of which 367,586 were aged sixty-five or older)” (Grob 1983: 317).

Bibliography

- Abbott, Andrew D. 1982. *The Emergence of American Psychiatry, 1880—1930*. Ph.D. Dissertation, Department of Sociology, University of Chicago.
- . 1990. "Vacancy Models for Historical Data," 80—102, in *Social Mobility and Social Structure*, Ronald L. Breiger, ed. Cambridge: Cambridge University Press.
- Adler, Freda. 1986. "Jail as a Repository for Former Mental Patients," *International Journal of Offender Therapy and Comparative Criminology* 30: 225—36.
- Aviram, Uri, S. Leonard Syme, and Judith B. Cohen. 1976. "The effects of policies and programs on reduction of mental hospitalization." *Social Science and Medicine* 10:571—577.
- Blumstein, Alfred. 1995. "Prisons," in *Crime*, James Q. Wilson and Joan Petersilia, eds. San Francisco: ICS Press.
- Blumstein, Alfred. 2000. "Disaggregating the Violence Trends," 13—44, in Blumstein and Wallman, eds., *The Crime Drop in America*. Cambridge, UK: Cambridge University Press.
- Blumstein, Alfred, Jacqueline Cohen and Daniel Nagin, eds. 1978. *Deterrence and Incapacitation: Estimating the Effects of Criminal Sanctions on Crime Rates*. Washington DC: National Academy of Sciences.
- Blumstein, Alfred, and Soumyo Moitra. 1979. "An Analysis of Time Series of the Imprisonment Rate in the States of the United States: A Further Test of the Stability of Punishment Hypothesis," *Journal of Criminal Law and Criminology* 70: 376.
- Blumstein, Alfred and Daniel S. Nagin. 1975. "Analysis of Arrest Rates for Trends in Criminality," *Socio-Economic Planning Sciences* 9: 221—227.
- Blumstein, Alfred and Joel Wallman. 2000a. *The Crime Drop in America*. Cambridge, UK: Cambridge University Press.
- Blumstein, Alfred and Joel Wallman. 2000b. "The Recent Rise and Fall of American Violence," 1—12, in Blumstein and Wallman, eds., *The Crime Drop in America*. Cambridge, UK: Cambridge University Press.
- Bowker, L. H. 1981. "Crime and the Use of Prisons in the United States—A Time Series Analysis," *Crime & Delinquency* 27(2): 206-212.
- Cahalan, Margaret Werner with Lee Anne Parsons. 1986. *Historical Corrections Statistics in the United States, 1850-1984*. Rockville, MD: Westat, Inc.

- Cantor, David, and Kenneth C. Land. 1985. "Unemployment and Crime Rates in the Post-World War II United States: A Theoretical and Empirical Analysis." *American Sociological Review* 50(3): 317-332.
- Cappell, Charles L., and Gresham Sykes. 1991. "Prison Commitments, Crime, and Unemployment: A Theoretical and Empirical Specification for the United States, 1933-1985." *Journal of Quantitative Criminology* 7(2):155-199.
- Carlson, Susan M., and Raymond J. Michalowski. 1997. "Crime, Unemployment, and Social Structures of Accumulation: An Inquiry into Historical Contingency." *Justice Quarterly* 14(2): 209-242.
- Chiricos, Theodore G. 1987. "Rates of Crime and Unemployment: An Analysis of Aggregate Research Evidence." 34(2): 187—212.
- Chiricos, Theodore G. and Miram Delone. 1992. "Labor Surplus and Punishment: A Review and Assessment of Theory and Evidence," *Social Problems* 39: 421—446.
- Chiricos, Theodore G. and Gordon P. Waldo. 1970. "Punishment and Crime: An Examination of Some Empirical Evidence," *Social Problems* 18(2): 200—217.
- Cohen, Lawrence E. and Marcus Felson. 1979. "Social Change and Crime Rate Trends: A Routine Activity Approach," *American Sociological Review* 44(4): 588—608.
- Cohen, Lawrence and Kenneth Land. 1987. "Age Structure and Crime: Symmetry versus Asymmetry and the Projection of Crime Rates Through the 1990s," *American Sociological Review* 52: 170—183.
- DeFina, Robert H. and Thomas M. Arvanites. 2002. "The Weak Effect of Imprisonment on Crime: 1971—1998," *Social Science Quarterly* 83(3): 635—653.
- Ditton, Paula M. 1999. "Mental Health and Treatment of Inmates and Probationers," *Bureau of Justice Statistics Special Report*, Bureau of Justice Statistics, National Corrections Journal 174463 (July 1999).
- Donohue, John J. III and Steven D. Levitt. 2001. "The Impact of Legalized Abortion on Crime," *Quarterly Journal of Economics* 116(2): 379—420.
- Eck, John and Edward Maguire. 2000. "Have Changes in Policing Reduced Violent Crime? An Assessment of the Evidence," 207—265, in Blumstein and Wallman, *The Crime Drop in America*. Cambridge, UK: Cambridge University Press.
- Foucault, Michel. 1972 [1961]. *Histoire de la folie à l'âge classique*. Paris: Gallimard.

- Foucault, Michel. 1965. *Madness and Civilization*. New York: Vintage.
- Fox, James Alan. 1978. *Forecasting Crime Data*. Lexington, MA: Lexington Books.
- Fox, James Alan. 2000. "Demographics and U.S. Homicide," 288—318, in Blumstein and Wallman, eds., *The Crime Drop in America*. Cambridge, UK: Cambridge University Press.
- Fox, James Alan, and Alex R. Piquero. 2003. "Deadly Demographics: Population Characteristics and Forecasting Homicide Trends." *Crime and Delinquency* 49(3):339-359.
- Freeman, Richard B. 1983. "Crime and Unemployment," 89—106, James Q. Wilson, ed., *Crime and Public Policy*. San Francisco: ICS Press.
- Gillespie, Robert W. 1978. "Economic Factors in Crime and Delinquency: A Critical Review of the Empirical Evidence," 601—626, *Unemployment and Crime: Hearings Before the Subcommittee on Crime of the Committee on the Judiciary of the House of Representatives*. Washington, DC: U.S. Government Printing Office.
- Goffman, Erving. 1961. *Asylums: Essays on the Social Situation of Mental Patients and Other Inmates*. Garden City, NY: Doubleday.
- Goldman, Howard, Neal H. Adams, and Carl A. Taube. 1983. "Deinstitutionalization: The Data Demythologized," *Hospital and Community Psychology* 34(2): 132.
- Grabosky, Peter N. 1980. "Rates of Imprisonment and Psychiatric Hospitalization in the United States," *Social Indicators Research* 7: 63.
- Grob, Gerald N. 1966. *The State and the Mentally Ill: A History of Worcester State Hospital in Massachusetts, 1830-1920*. Chapel Hill: University of North Carolina Press.
- . 1983. *Mental Illness and American Society, 1875—1940*. Princeton, NJ: Princeton University Press.
- . 1991. *From Asylum to Community: Mental Health Policy in Modern America*. Princeton, NJ: Princeton University Press.
- Grogger, Jeff. 2000. "An Economic Model of Recent Trends in Violence," 266—287, in Blumstein and Wallman, *The Crime Drop in America*. Cambridge, UK: Cambridge University Press.
- Gronfein, William. 1985. "Incentives and Intentions in Mental Health Policy: A Comparison of the Medicaid and Community Mental Health Programs," *Journal of Health and Social Behavior* 26(3): 192—206.

- Harcourt, Bernard E. 2001. *Illusion of Order: The False Promise of Broken Windows Policing*. Cambridge MA: Harvard University Press.
- Harcourt, Bernard E. 2006. *Against Prediction: Profiling, Policing and Punishing in An Actuarial Age*. Chicago, IL: University of Chicago Press (forthcoming).
- Ignatieff, Michael. 1978. *A Just Measure of Pain: The Penitentiary in the Industrial Revolution, 1850—1950*. New York: Pantheon.
- . 1981. "State, Civil Society, and Total Institutions: A Critique of Recent Social Histories of Punishment," *Crime and Justice* 3: 153—92.
- Jacobs, Brian and Lars Lefgren. 2003. "Are Idle Hands the Devil's Workshop?: Incapacitation, Concentration, and Juvenile Crime," *American Econ Rev* 93: 1560.
- Johnson, Bruce, Andrew Golub and E. Dunlap. 2000. "The Rise and Decline of Hard Drugs, Drug Markets, and Violence in Inner-City New York," 164—206, in Blumstein and Wallman, eds., *The Crime Drop in America*. New York: Cambridge University Press.
- Land, Kenneth C., Patricia L. McCall, and Lawrence E. Cohen. 1990. "Structural Covariates of Homicide Rates: Are There Any Invariances across Time and Social Space?" *American Journal of Sociology* 95:922-63.
- Laub, John H. 1983. "Urbanism, Race, and Crime," *Journal of Research in Crime and Delinquency* 20: 183—198.
- Levitt, Steven D. 1996. "The Effect of Prison Population Size on Crime Rates: Evidence from Prison Overcrowding Litigation," *Quarterly Journal of Economics* 111(2): 319—351.
- Levitt, Steven D. 1999. "The Limited Role of Changing Age Structure in Explaining Aggregate Crime Rates," *Criminology* 37(3): 581—598.
- Levitt, Steven D. 2004. "Understanding Why Crime Fell in the 1990s: Four Factors that Explain the Decline and Six that Do Not," *Journal of Economic Perspectives* 18(1): 163—190.
- Liska, Allen E. 1997. "Modeling the Relationships Between Macro Forms of Social Control," *Annual Review of Sociology* 23: 39—61.
- Liska, Allen E., Fred E. Markowitz, Rachel Bridges Whaley, and Paul Bellair. 1999. "Modeling the Relationship Between the Criminal Justice and Mental Health Systems," *American Journal of Sociology* 104(6): 1744—1775 (May, 1999).
- Lochner, . 2004. "Education, Work, and Crime: A Human Capital Approach,"

- Long, Sharon K. and Ann D. Witte. 1981. "Current Economic Trends: Implications for Crime and Criminal Justice," 69—143, Kevin N. Wright, ed., *Crime and Criminal Justice in a Declining Economy*. Cambridge, MA: Oelgeschlager, Gunn and Hain.
- Marvell, Thoms and Carlisle Moody. 1991. "Age Structure and Crime Rates: The Conflicting Evidence," *Journal of Quantitative Criminology* 7: 237—273.
- . 1994. "Prison Population-Growth and Crime Reduction," *Journal of Quantitative Criminology*, 10(2): 109-140.
- McGuire, William and Richard G. Sheehan. 1983. "Relationships Between Crime Rates and Incarceration Rates- Further Analysis," *Journal of Research in Crime and Delinquency*, 20(1): 73-85.
- Michalowski, Raymond J., and Susan M. Carlson. 1999. "Unemployment, Imprisonment, and Social Structures of Accumulation: Historical Contingency in the Rusche-Kirchheimer Hypothesis." *Criminology* 37(2): 217-250.
- Michalowski, Raymond J., and Susan M. Carlson. 2000. "Crime, Punishment, and Social Structures of Accumulation." *Journal of Contemporary Criminal Justice* 16(3): 272-292.
- Ostrom, Charles W. Jr. 1990. *Times Series Analysis: Regression Techniques*. London: Sage Publications.
- Ouimet, Marc, and Pierre Tremblay. 1996. "A Normative Theory of the Relationship Between Crime Rates and Imprisonment Rates: An Analysis of the Penal Behavior of the U.S. States from 1972 to 1992." *Journal of Crime and Delinquency* 33(1): 109-125.
- Palermo, George B., Edward J. Gumz, and Frank J. Liska. 1992. "Mental Illness and Criminal Behavior Revisited," *International Journal of Offender Theory and Comparative Criminology* 36:53—61.
- Penrose, Lionel S. 1939. "Mental Disease and Crime: Outline of a Comparative Study of European Statistics," *British Journal of Medical Psychology*, 18:1—15.
- Pfaff, John F. 2004. "Explaining the Growth in U.S. Prison Populations: 1977—1998," working paper dated July 17, 2004, on file with author.
- Raphael, Steven. 2000. "The Deinstitutionalization of the Mentally Ill and Growth in the U.S. Prison Populations: 1971 to 1996," working paper dated September 2000 available at <http://ist-socrates.berkeley.edu/~raphael/raphael2000.pdf>
- Reitz, Kevin. 1997. "Zimring, Hawkins, and the Macro Problems of Imprisonment," *Journal of Criminal Law and Criminology*, 87: 604.

- Rose, Stephen. 1979. "Deciphering deinstitutionalization: Complexities in policy and program analysis," *Milbank Memorial Fund Quarterly* 37: 429—461.
- Ross, Christine, Sheldon Danziger, and Eugene Smolensky. 1987. "The Level and Trend of Poverty in the United States, 1939—1979," *Demography* 24(4): 587—600.
- Rothman, David. 1971. *The Discovery of the Asylum*. Boston, MA: Little, Brown.
- South, Scott J., and Steven F. Messner. 2000. "Crime and Demography: Multiple Linkages, Reciprocal Relations." *Annual Review of Sociology* 26: 83-106.
- Spelman, William. 200. "The Limited Importance of Prison Expansion," 97—129, in Blumstein and Wallman, *The Crime Drop in America*. Cambridge, UK: Cambridge University Press.
- Steadman, Henry J., John Monahan, Barbara Duffee, Eliot Hartstone, and Pamela Clark Robbins. 1984. "The Impact of State Mental Hospital Deinstitutionalization on United States Prison Populations, 1968—1978," *Journal of Criminal Law and Criminology* 75(2): 474—490 (Summer 1984).
- Steffensmeier, Darrell J., Emilie Andersen Allan, Miles D. Harer, and Cathy Streifel. 1989. *American Journal of Sociology* 94(4): 803—831.
- Stewart, James B. 1991. *Den of Thieves*. New York: Simon & Schuster.
- Szasz, Thomas. 1961. *The Myth of Mental Illness: Foundations of a Theory of Personal Conduct*. New York: Harper & Row.
- Votey, Harold L. Jr.. 1991. "Employment, Age, Race, and Crime: A Labor Theoretic Investigation." *Journal of Quantitative Criminology* 7(2): 123-153.
- Wacquant, Loïc. 2005. *Deadly Symbiosis: Race and the Rise of Neoliberal Penalty*. Cambridge, UK: Polity Press.
- Wilson, James Q. and Richard Herrnstein. 1985. *Crime and Human Nature*. New York: Simon and Schuster.
- Zimring, Franklin E., and Gordon Hawkins. 1995. *Incapacitation: Penal Confinement and the Restraint of Crime*. New York: Oxford University Press.

## Appendix

### A Note on Jail Data and their Effect

There are no reliable statistics on jail populations—in most cases, no data at all—for the period before 1970. That is the year that the Law Enforcement Assistance Administration (LEAA) conducted the first census of jails (Cahalan 1986:73 and Table 4-1 at p. 76). Prior to that, there were decennial Census Bureau counts for 1880, 1890, 1940, 1950, and 1960, but even those Census counts are not reliable. So for instance, in 1970, the Census reported 129,189 inmates in jail, whereas the first Department of Justice LEAA count that same year reported 160,863 inmates in jail—24.5% higher than the Census count.

There are a number of reasons for the underreporting and non-reporting of jail inmates. Jails are jurisdictionally at the municipal and county level and, as a result, are much more difficult to survey than, for instance, federal prisons. In addition, between 1904 and at least 1940, the Census only counted jail inmates who were *sentenced*. The more thorough 1923 special report, “Prisoners, 1923,” also excluded inmates who were not sentenced, and in addition omitted certain jails that were believed not to contain sentenced jail inmates. So all the data, including the 1933 “County and City Jails” report, excluded jail inmates who had not been sentenced yet (Cahalan 1986: 73).

From 1940 to 1950, according to the Census count, the jail population was decreasing, down almost 13,000 or 13% from 99,249 in 1940 to 86,492 in 1950. Again, though, the 1970 LEAA count and comparison to the 1970 Census count suggests that these number may have been off by as much as 25 percent.

If we make very conservative assumptions and assume (1) that the jail population stayed flat from 1928 to 1940 (recall, it was dropping from 1940 to 1950) and (2) that the Census counts were valid (recall that they are at least 25 percent off), and we interpolate linearly the missing data (we only have three unreliable years, 1940, 1950, and 1960, for the 42 year period 1928 to 1970), then we obtain data that we can use to add to the institutionalization number.

For jail numbers, I was able to obtain historical data for decennial years (1940, 1950, 1960, 1970, and 1980) as well as 1933, 1972, 1978, 1982 and 1983 from Cahalan (1986). For

data since 1983, data derived from the *Sourcebook of Criminal Justice Statistics*, and yearly *Prison and Jail Inmates* and *Prisoners* publications of the Bureau of Justice Statistics. For missing data, I have linearly interpolated the data.

When I run a model, it reduces the effect, but not by that much. The result are summarized here:

### Appendix Table 1

#### Adding Jail Rate to Institutionalization in Studying the Incarceration-Crime Nexus: Prais-Winsten Autocorrelation Adjustment at Lag 1 (AR1) Regression Results

Dependent variable = Homicide Rates, 1928—2000

Explanatory variables:	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Institutionalization plus Jail Rate:						
Prais coefficient	-.806***	-.815***	-.774**	-.78***	-.833***	-1.15***
Standard error	(.235)	(.231)	(.301)	(.296)	(.274)	(.378)
P value	0.001	0.001	0.012	0.009	0.004	0.004
Unemployment:						
Prais coefficient		.047*		.047*		.159
Standard error		(.025)		(.025)		(.106)
P value		0.061		0.064		0.129
Proportion 15 - 24:						
Prais coefficient			-.0295	.015		-.444*
Standard error			(.172)	(.169)		(.251)
P value			0.864	0.931		0.086
Poverty:						
Prais coefficient					-.02	-.258**
Standard error					(.102)	(.114)
P value					0.845	0.030
Durbin-Watson statistic pre-Prais-Winsten	0.081	0.098	0.081	0.129	0.203	0.379
Durbin-Watson statistic post-Prais-Winsten	1.274	1.396	1.269	1.393	1.017	1.183
OLS R-squared	0.351	0.437	0.352	0.484	0.565	0.821
N	73	73	73	73	42	42

\* = statistically significant at 10 percent cutoff. \*\* = 5 percent cutoff. \*\*\* = 1 percent cutoff.

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