

SCALING ARCHETYPAL CRIMINALS

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ABSTRACT: *The current study introduces an exploratory postdiction scale whose elements are derived from Moffitt's (2001) developmental taxonomy, specifically her idea of the life-course persistent offender. Using data obtained from a probability sample of 500 adult arrestees in the western United States, this 7-item additive scale postdicts such criminal behavior as violent and property Index arrests, felony convictions, and prison sentences with overall accuracy ranging from 85% to 92%. Unlike other efforts, this scale suggests that most criminals are benign, low-level offenders, a finding anticipated by Moffitt's theory. Like prior criminological scales, the current measure has difficulty correctly identifying high-rate offenders. The merits of using theory to influence scale construction are expressed and suggestions for refining this instrument are offered.*

INTRODUCTION

The accurate identification of who will become a habitual offender is one of the primary scientific goals of criminology (Broadhurst, 2000, p. 109; Farrington, 2000a; Gottfredson & Hirschi, 1986, pp. 213-218). Criminologists know with great certainty that individual criminal behavior is extremely skewed. For most persons, criminal behavior is short-lived and unexceptional. Offense prevalence peaks during late adolescence. Most persons with some involvement in delinquency do not pose any particular risk of danger or recidivism per se. Instead, their involvement in crime is likened to "going through a phase." Unfortunately, this same optimistic profile does not characterize the remaining 5% of the offender population. The criminal behavior of persons in this group is chronic, frequent, dire, and psychopathic (Black & Larson, 1999; DeLisi, 2001; Lynam, 1996). Contrary to the adolescent folly that most persons experience, chronic criminality emerges in childhood and never disappears. This persistent criminality severely compromises pro-social development and impedes involvement in the family, school, and work. It is also characterized by educational failure, chronic unemployment, poor physical and mental health, attendant substance abuse problems, and prolonged involvement in the criminal jus-

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tice system (Caspi et al., 1997; Moffitt, 1990, 1993; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996).

While scholars have confidently described the empirical existence of these two groups, this knowledge has not translated into effective policy (Gottfredson & Tonry, 1987). Researchers have been unable to devise an instrument that differentiates serious, high-rate offenders from benign, low-level offenders. Earlier attempts have identified too many non-serious offenders as chronic, an inaccuracy often referred to as the false positive problem. The current study seeks to advance this area by introducing a scale of career/serious criminality informed by Moffitt's theory of the life-course persistent offender.

EMPIRICAL BACKGROUND

The main figure involved in criminal career scaling is Peter Greenwood. Based on the self-reported criminal records of 2,190 male prison and jail inmates in California, Michigan, and Texas, Greenwood and Abrahamse (1982) devised a seven-item additive scale to predict the most active criminal offenders. These seven criteria, distilled from the characteristics of the most recidivistic robbers and burglars, were prior incarceration for the same type of offense, incarceration for more than half the preceding two years, conviction prior to age 16, juvenile incarceration, recent narcotic use, adolescent narcotic use, and employment for less than half of the preceding two years.

Each item was treated as a dichotomy. Offenders who possessed the characteristic scored one; inmates who lacked the characteristic scored zero. Offenders with a cumulative score of zero or one were categorized as low-rate, while offenders with a cumulative score of two or three fell into the medium-rate group. Cumulative scores of four through seven marked high-rate offenders. The scale predicted that 27% of the offenders were low-rate. The scale classified 44% as medium-rate and 29% as high-rate. Based on these predicted classifications, Greenwood and Abrahamse (1982) suggested that selective incapacitation of high-rate offenders would cause the California robbery rate to drop by 15%, while reducing the total incarcerated robber population by 5%. A similar 15% reduction in California's burglary rate would require a 7% increase in the incarcerated burglar population. Moreover, Greenwood and Abrahamse (1982) reported that only 4% of the cases were extreme false positives, low-rate offenders erroneously predicted to be high-rate offenders. The scale accurately predicted 52% of low-rate offenders, 50% of medium-rate offenders, and 52% of high-rate offenders. These figures are equal to an overall accuracy of 51%.

The Greenwood scale started a cavalcade of critical responses. Scholars were quick to address the methodological shortcomings and ethical dilemmas posed by selecting individual offenders for punishment (e.g., Barnett & Lofaso, 1985; Blackmore & Welsh, 1983; Cohen, 1984; Gottfredson & Gottfredson, 1985, 1994; von Hirsch, 1984, 1985). The sharpest criticism surrounded the inaccuracy of the Greenwood scale. For example, von Hirsch (1985, pp. 110-111) concluded that the Greenwood scale demonstrated a false positive rate of 56% and a false negative rate of 16%. The reason Greenwood's report of false positives was so low is that only extreme false positives, offenders predicted to be high-rate who were actually low-rate, were counted. Separate reexaminations of Greenwood's data (Cohen, 1983; Visher, 1986) yielded false positive rates in excess of 50%.

The general inaccuracy of the Greenwood scale prompted other researchers to attempt to increase the scale's predictive power. Decker and Salert (1986) employed a refined seven-item scale measuring adolescent arrest and incarceration history, degree of substance abuse, and employment record. The authors applied the scale to a national probability sample of 11,397 inmates from 215 state correctional facilities and concluded that their scale posted a high error rate. In fact, the scale incorrectly targeted over one-third of the inmates and missed 60% of the actual chronic offenders (Decker & Salert, 1986, p. 225).

Greenwood has acknowledged the limitations of his earlier work. Using a modified five-item scale, Greenwood and Turner (1987) examined 2,700 men committed to California Youth Authority facilities between 1966 and 1971 and 200 former inmates from the original Rand Inmate Survey. Once again, they found that the predictive instrument was rather inaccurate in predicting prospective offense rates. Greenwood and Turner (1987, p. x) suggested that "high-rate offenders cannot be accurately identified, either prospectively or retrospectively, on the basis of their arrest rates alone." Regarding earlier claims derived from the 1982 study, Greenwood and Turner (1987, p. 49) concluded "that several subsequent reanalyses of these data suggest that these initial estimates were overly optimistic."

Several other researchers harbored similarly grim opinions about the utility of offender prediction scales. Consider these examples:

- "While factors related to 'risk' of future high-rate criminal behavior can be identified, the accurate identification of high-rate offenders using information available in official records does not appear possible at present . . . predictive devices using these factors can be expected to produce a large proportion of false predictions. Such devices must be employed cautiously" (Haapanen, 1990, p. 143).

- “Selective incapacitation scales, if they can be made to work at all, will at best be crude instruments” (von Hirsch, 1985, p. 114).
- “Proposals for selective incapacitation are predicated on the idea that we can prospectively identify high-rate offenders sufficiently early in their careers to reap the incapacitative benefit of crime reduction. The major obstacle to the successful implementation of such proposals is that no convincing evidence exists that this is possible” (Auerhahn, 1999, p. 726).

Miranne and Geerken (1991) administered a revised Greenwood scale to 200 male inmates incarcerated in New Orleans. Their analysis of face-to-face interviews demonstrated that offense frequencies are highly skewed, suggesting the existence of different types of offenders. Miranne and Geerken’s (1991) revised Greenwood scale accurately classified 49% of the inmates into low, medium, and high-rate categories, findings that were similar to Greenwood and Abrahamse (1982) and Visser (1986). These observations led Miranne and Geerken (1991, p. 511) to conclude that the “results offer support for the generalizability of Greenwood’s predictive scale, at least to inmate self-report samples. Still, it must be remembered that the predictive accuracy of the scale is fairly low, especially for the high-rate offenders, who are the most relevant for selective incapacitation policies.”

Auerhahn (1999) replicated the Greenwood and Abrahamse study with a representative sample of 2,188 California prisoners and a modified seven-item scale. The new items included any prior conviction, free at least one year before current incarceration, arrest before age 16, incarceration as a juvenile, regular use of heroin or barbiturates at any point in an inmate’s life, adolescent heroin or barbiturate use, and recent employment status. Auerhahn’s revised measure performed slightly better than Greenwood’s original scale. The total accuracy increased from 51% to 60% and the false positive incidence decreased by 50%. However, low alpha coefficients (.38 for Auerhahn’s modification and .48 for Greenwood’s original scale) imply that these instruments are not useful tools in predicting the most active criminal offenders.

Even though attempts to predict habituation in criminal behavior have failed, it is premature to conclude that such an endeavor is impossible. A multitude of diverse research projects (DeLisi, 2000; Farrington, 1997, 2000a; Fergusson, Horwood, & Nagin, 2000; Mazerolle, Brame, Paternoster, Piquero, & Dean, 2000; Wikstrom & Loeber, 2000) demonstrate that criminal behavior is extremely skewed. A small group of active criminals continues to exist at the extreme right tail of the offending distribution. Correctly identifying these offenders is a primary goal of crime control policy.

THEORETICAL BACKGROUND

Moffitt's developmental taxonomy represents a major theoretical advance in criminal career research. Moffitt (2001) suggests there are two distinct types of criminal offenders, each with a unique natural history and etiology. Most offenders are delinquent for a brief period during adolescence. Their delinquency is the manifestation of the difficult transition from adolescence to adulthood. This criminal type, which Moffitt refers to as the adolescence-limited offender, is common and normative. The second type of criminal behavior is rare. In fact, it occurs in less than 10% of males. This group, life-course persistent offenders, engages in antisocial behavior of one sort or another at every life stage.

The appeal of Moffitt's taxonomy is that it seeks to differentiate the two archetypal classes, persons whose criminal behavior is normal and unproblematic (adolescence-limited) from persons whose criminal behavior is extreme (life-course persistent). Nearly everyone engages in some delinquency during adolescence, a life-stage where behaving antisocially is socially normal. Most persons desist from engaging in criminal behavior once the demands of adult status arrive with attendant involvement in advanced education, employment, family, and military. Scholars with diverse perspectives are in agreement regarding the life trajectory of the adolescence-limited offender (Greenberg & Larkin, 1985; Hirschi & Gottfredson, 1983; Sampson & Laub, 1993). Academicians are generally unconcerned with adolescence-limited offenders because they are not the targets of prediction scales and selective incapacitation policies. Instead, attention is riveted on life-course persistent offenders because they are the focus of policy makers.

Unlike many sociological perspectives on criminal behavior, Moffitt's psychological theory is unequivocal about the virulence of life-course persistent offenders. The ontogenetic factor in the life-course persistent offender is neuropsychological defect. It includes psychological processes within the nervous system that influence such characteristics as temperament, behavioral development, and cognitive abilities. Empirical investigations into the link between neuropsychological defects and serious criminality largely support Moffitt's claims (Caspi et al., 1997; Farrington, 2000b; Henry, Caspi, Moffitt, & Silva, 1996; Krueger et al., 1994; Lynam, 1996; Moffitt, 1990, 1993; Newman, Caspi, Moffitt, & Silva, 1997).

These defects render such children difficult to parent. Moffitt (2001, pp. 104-106) suggests that children with neuropsychological problems co-occur with family disadvantage. These environments are disproportionately filled with parents and other family members who

often share the unsavory temperament and personality of their difficult children. Indeed, scholars have found that initial childhood disadvantage frequently interacts with troublesome home environments (see Baldry & Farrington, 2000; Farrington, Barnes, & Lambert, 1996; Henry, Moffitt, Robins, & Earls, 1993).

The onset of criminal or analogously criminal behavior approximates which type of offender one will become. Early onset is a troubling harbinger of maladaptive future behavior (Farrington & Hawkins, 1991; Loeber & Farrington, 2000; Moffitt et al., 1996). Severely antisocial, deviant, and difficult children are very likely to become tomorrow's murderers, rapists, kidnappers, and armed robbers. Unlike other explanations of crime (e.g., Sampson & Laub, 1993), there is no hope for rehabilitation or convalescence for the life-course persistent offender. Life-course persistent offenders are pathologically flawed individuals whose criminality is severe. Can early criminal behavior be used to identify whose criminal careers will demonstrate the most continuity and severity? Is Moffitt's theory useful for scale construction? The current study seeks answers to these questions.

METHODS

Research Design and Sample

A panel or cohort design with longitudinal data is needed to create a true prediction scale. Given the costs of such designs and the exploratory purpose of this research, the current study employs a postdiction design (see Chaiken & Chaiken, 1990; Chaiken, Chaiken, & Rhodes, 1994). Postdiction allows the researcher to assess offending careers retroactively to determine whether baseline variables, such as the ones proposed for the current scale, could have postdicted certain criminal outcomes.

A seven-item additive scale was produced. These items are sex, age of onset at first arrest, juvenile predatory arrest, juvenile serious property arrest, juvenile felony conviction, juvenile violation of non-incarceration sentence, and juvenile commitment to prison. Following convention (e.g., Auerhahn, 1999; Decker & Salert, 1986; Greenwood & Abrahamse, 1982; Greenwood & Turner, 1987; Miranne & Geerken, 1991), a trichotomous scale was used. Offenders scoring zero or one occupy the low-rate category. Scores of two or three reflect medium-rate participants and values of four through seven delineate high-rate offenders. Three-by-three contingency tables (low-, medium-, and high-rate) allow a comparison of the postdicted and observed criminal behavior. The four outcome variables are violent Index arrests, property Index arrests, felony convictions, and prison sentences during adult-

hood. These indicators were selected because they measure the likely adult outcomes of life-course persistent offenders.

Developing a scale necessitates a construction sample with three characteristics. First, it should contain a heterogeneous group that includes all types of offenders (e.g., low-, medium-, and high-rate). Second, an offender sample is needed since general population samples tend to exclude the most serious offenders (Cernkovich, Giordano, & Pugh, 1985; DeLisi, 2001). Third, official measures are needed for accurate arrest, judicial, and sentencing information.

The data come from a simple random sample of 500 adults arrested and detained at a large urban jail in the western United States. A pre-trial services unit interviewed all respondents from January to June 2000 and gathered information regarding employment, residence, mental health, substance abuse treatment, and criminal history. This information is used to determine the defendant's risks of flight, recidivism, and danger to the community.

The National Crime Information Center (NCIC) database contains arrest and judicial information from local, state, federal, and foreign criminal justice agencies. The use of official data, such as the NCIC, can be a disputatious issue (see Elliott & Ageton, 1980; Gove, Hughes, & Geerken, 1985; Hindelang, Hirschi, & Weis, 1979). The most common criticisms are that official estimates of crime are rife with criminal justice system biases and are a better reflection of police performance rather than criminal activity. In addition, researchers often exaggerate arrest estimates derived from NCIC records because they mistakenly count sentencing and prison admission entries as new crimes (Geerken, 1994). The current author's substantial experience with processing, interpreting, and quantifying NCIC records should minimize some of these concerns.

The sample is demographically diverse. The group is 73% male ($n = 365$) and 27% female ($n = 135$). In terms of race, 61% of the members are white ($n = 306$) and 39% are non-white ($n = 194$), with 79% of the minorities being Hispanic. The average offender age is 33 years (range 18 to 72 years) and the average age of onset is 26 years (range 10 to 70 years). Only six offenders were arrested before age 14. The study group contains offenders of varied and skewed criminality. Offenders averaged six arrests (range = 1 to 72, $SD = 9.00$, skewness = 2.76) for any combination of Part I and II offenses. Offenders averaged 0.28 arrests for violent Index offenses (range = 0 to 7, $SD = 0.86$, skewness = 4.02), 0.95 arrests for property Index offenses (range = 0 to 31, $SD = 2.71$, skewness = 6.18), 0.44 felony convictions (range = 0 to 18, $SD = 1.59$, skewness = 5.60), and 0.28 prison sentences (range = 0 to 17, $SD =$

1.26, skewness = 7.41). Prison sentences are measured in years, not months.

Scale Components

Sex

Moffitt suggests that only males exhibit the pathological criminality of the life-course persistent offender. When investigating extreme behaviors, such as persistent/career criminality (Moffitt, Lynam, & Silva, 1994), violent offending (Henry et al., 1996), and psychopathology (Krueger, Caspi, Moffitt, White, & Stouthamer-Loeber, 1996), Moffitt and her colleagues employ exclusively male samples. Sex (female = 0; male = 1) is one of the fundamental risk factors regarding the probability of involvement in career criminality.

Onset

The stability of antisocial behavior is closely linked to its extremity (Moffitt, 2001, p. 96). Moreover, both stability and extremity of antisocial behavior are inversely related to onset. According to Moffitt, one flaw is the overemphasis on offending careers that emerge during adolescence because the most serious and socially destructive (life-course persistent) offenders began their criminal career during childhood. Moffitt suggests that the genesis of life-course persistent criminality occurs during prenatal, perinatal, and postnatal life stages (for comprehensive discussions of the childhood proxies of criminal behavior, see Farrington, 1997, 1998). However, childhood and adolescent problem behaviors are actually analogs of adult criminal behavior and even life-course persistent offenders might not become arrested until adolescence. Prior researchers have delineated age 14 as a useful threshold to differentiate offender types (Mazerolle et al., 2000; Nagin, Farrington, & Moffitt, 1995; Tibbetts & Piquero, 1999). This operationalization (0 = before 14; 1 = 14+) is also used in the current scale.

Predatory and Serious Property Juvenile Arrests

Predatory arrests include the charges of murder, rape, robbery, aggravated assault, and kidnapping. Serious property arrests refer to burglary, auto theft, and arson. Moffitt (2001) suggests that these offenses are the types of behaviors in which life-course persistent offenders are involved. Conversely, the common adolescence-limited offenders engage primarily in status offenses and minor delinquent acts, such as vandalism. Juvenile arrests for these offenses are measured on a “no” (scored as zero) or “yes” (scored as one) basis.

Juvenile Felony Conviction, Non-Compliance, and Imprisonment

The developmental taxonomy lacks explicit mention of criminal justice system status. However, it is not difficult to infer the legal statuses of life-course persistent offenders. Moffitt (2001) indicates that the prognosis for the life-course persistent person is bleak, characterized by substance abuse, financial and employment instability, family dissolution, transience, and psychiatric illness. These characteristics contribute to adverse involvement with the criminal justice system. The juvenile justice system is less punitive and not as reliant on incarceration as the adult criminal justice system. Consequently, those subjects who receive the most severe legal punishments during adolescence are likely to be serious offenders. Moreover, excessive non-compliance with the intermediate sanctions that precede prison similarly reflects an offender who is unwilling or unable to comply with court orders. The personality profile of the life-course persistent offender, particularly defiance toward authority and generalized impulsivity, decreases the likelihood of successful completion of a criminal sentence (Caspi et al., 1997; Frost, Moffitt, & McGee, 1989; Gottfredson & Hirschi, 1990; Moffitt et al., 1996; Newman et al., 1997). Dichotomous measures of criminal justice system involvement during adolescence are coded zero for none and one for exposure.

RESULTS

The zero-order correlation matrix, displayed in Table 1, shows the seven scale items correlate positively with each other. Particularly robust are the positive coefficients between arrests for serious offenses and justice system statuses during adolescence. For example, the correlations between serious property involvement and juvenile prison ($r = .65$), felony conviction status ($r = .64$), and non-compliance ($r = .59$) are particularly strong. Curiously, there is a consistently non-significant correlation between sex and the various criminality measures. This finding is surprising because Moffitt asserts that males, not females, primarily engage in life-course persistent offending. Overall, the seven items appear to be a reliable indicator of the life-course persistent offender ($\alpha = .79$).

Table 2 presents the postdiction results after applying the newly proposed scale. The most drastic difference between this postdiction scale and earlier predictive instruments is the overwhelming number of offenders who are identified as low-rate. Specifically, the current scale postdicts 96% ($n = 480$) of the offenders as low-rate, 2.4% ($n = 12$) as medium-rate, and 1.6% ($n = 8$) as high-rate offenders. These totals are

TABLE 1
Zero-Order Correlation Matrix for Life-Course
Persistent Scale Items, ($n = 500$)

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	Mean	SD
X ₁ Onset								.11	.31
X ₂ Juvenile Prison	.16*							.05	.22
X ₃ Felony Conviction	.33*	.65*	.09					.09	.29
X ₄ Non-Compliance	.42*	.40*	.80*					.08	.27
X ₅ Predatory Arrest	-.01	.33*	.21*	.20*				.05	.22
X ₆ Property Arrest	.42*	.41*	.64*	.59*	.13*			.15	.36
X ₇ Sex	.06	.05	.07	.08	-.01	.03		.81	.39

* $p < .05$

far different from the Greenwood scale and its derivations which routinely identified 30% of offenders as high-rate, over 40% as medium-rate, and approximately 30% as low-rate. The finding that most offenders are low-rate clearly resonates with Moffitt's theoretical ideas. For most persons, delinquency is a normative, ephemeral occurrence during adolescence. Furthermore, life-long, persistent involvement in crime is exceedingly rare. Thus, there is little reason to believe that a predictive instrument has much validity in asserting that one in three offenders experience high-rate criminality. Again, the parsimony of Moffitt's theory is quite useful in differentiating the "good" from the "bad" archetypal offenders.

Overall, the scale successfully postdicts 90.6% of violent Index arrests, 85.8% of property Index arrest, 90.2% of felony convictions, and 92.2% of prison sentences. As Table 2 shows, the overwhelming majority of this successful postdiction occurs among low-rate offenders. For the four outcome variables, the accurate low-rate postdiction rates are 94%, 87.7%, 93%, and 95%. No false positives were produced for the four outcome variables. False negatives among the low-rate offenders are 6% for violent arrests, 12.3% for property arrests, 7% for felony convictions, and 5% for prison sentences. Overall, these totals surpass the ability of earlier scales to correctly identify low-rate offenders (see Hayes & Geerken, 1997, p. 361).

The current instrument is not nearly as successful in identifying medium-rate and high-rate offenders. Among medium-rate offenders, the scale accurately postdicts 8.3% for violent arrests, 16.7% for property arrests, none for felony convictions, and 8.3% for prison sentences. For high-rate offenders, the same totals are 12.5%, 75%, 50%, and 50%, respectively. For both medium- and high-rate offenders, the scale produces many false positives (offenders identified as high-rate but who

TABLE 2
Postdiction Results for Violent and Property Index
Arrests, Felony Convictions, and Prison Sentences
(*n* = 500)

Offender Type	Correct Postdictions		False Positives		False Negatives		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Violent Arrests								
Low-Rate	451	94.0%	0	0.0%	29	6.0%	480	96.0%
Medium-Rate	1	8.3	9	75.0	2	16.7	12	2.4
High-Rate	1	12.5	7	87.5	0	0.0	8	1.6
Property Arrests								
Low-Rate	421	87.7%	0	0.0%	59	12.3%	480	96.0%
Medium-Rate	2	16.7	5	41.7	5	41.7	12	2.4
High-Rate	6	75.0	2	25.0	0	0.0	8	1.6
Felony Convictions								
Low-Rate	447	93.0%	0	0.0%	33	7.0%	480	96.0%
Medium-Rate	0	0.0	11	91.7	1	8.3	12	2.4
High-Rate	4	50.0	4	50.0	0	0.0	8	1.6
Prison Sentences								
Low-Rate	456	95.0%	0	0.0%	24	5.0%	480	96.0%
Medium-Rate	1	8.3	11	91.7	0	0.0	12	2.4
High-Rate	4	50.0	4	50.0	0	0.0	8	1.6

are actually low- or medium-rate) and false negatives (offenders identified as low- or medium-rate who are actually high-rate). Among medium-rate offenders, the false positive totals for violent arrests, property arrests, felony convictions, and prison sentences are 75%, 41.7%, 91.7%, and 91.7%, respectively. Among the most recidivistic offenders, the false positive totals were 87.5%, 25%, 50%, and 50%, respectively. False negative misidentifications are less prevalent, but they do demonstrate the scale's difficulty in identifying more serious offenders. Among medium-rate offenders, the false negative rates are 16.7%, 41.7%, 8.3%, and none for violent arrests, property arrests, felony convictions, and prison sentences. For high-rate offenders, the commensurate totals are zero for all outcome variables.

DISCUSSION

The use of theoretically relevant variables suggests that the current scale is superior to prior efforts. Indeed, the 85% to 92% accuracy levels far exceed the 51% accuracy achieved by Greenwood and Abrahamse (1982), the 65% accuracy achieved by Decker and Salert (1986), the 50% accuracy achieved by Miranne and Geerken (1991),

and the 60% accuracy achieved by Auerhahn (1999). However, the high proportion of inaccurate identifications among medium- and high-rate offenders is troublesome and potentially costly. For example, the average annual imprisonment cost is approximately \$38,000 in the state where these data were collected. If criminal justice practitioners were completely reliant on the current scale for identifying candidates for selective incapacitation, there would be tremendous unnecessary costs. Overall, the scale produced 53 false positives. At \$38,000 per inmate, the scale would have produced an annual unnecessary incarceration cost of \$2,014,000.

False negatives present a different, yet equally troubling, dilemma. These are offenders whom the scale misidentifies as benign when they are actually high-rate criminal offenders. The scale produced 31 false negatives for violent arrests, 64 false negatives for property arrests, 34 false negatives for felony convictions, and 24 false negatives for prison sentences. Had criminal justice practitioners been relying on this scale, then the 20 most active offenders in the sample (the medium- and high-rate offenders) would have remained free when they deserved incarceration. These 20 most active offenders averaged 37 arrests during their criminal careers, were convicted of over four felonies, and served over three commitments to prison. Moreover, the most recidivistic offenders averaged over one arrest for a violent Index crime such as murder, rape, robbery, or aggravated assault. These are not the types of offenses or offenders that society can afford to tolerate.

The current study has important limitations that can be addressed by future research. First, the sample was selected from one adult jail in the western United States. This places a geographic limitation on the external validity of the findings. Second, the higher selectivity of the current scale produced low cell sizes for medium and high-rate offenders. Thus, while the scale can identify low-rate offenders with confidence, the same optimism does not characterize more recidivistic criminals. Both limitations can be addressed using a larger, nationally representative database, such as the 1945 or 1958 Philadelphia birth cohorts.

Further refinement of this scale is possible by incorporating measures of the neuropsychological defects mentioned by Moffitt (2001). For example, Tibbetts and Piquero (1999) recently tested Moffitt's theory by examining the influence of neuropsychological defects and environmental disadvantage on early criminal behavior. Using low birth weight as a proxy for neuropsychological defect, their analyses were consistent with Moffitt's claims. The addition of biological measures of neuropsychological defect to the current scale could facilitate the instrument's ability to identify or postdict more serious offenders.

CONCLUSION

Early prediction scales failed for two, non-mutually exclusive reasons. They were far too liberal in their classification and they lacked solid grounding in criminological theory. The scales developed by Greenwood and other researchers predicted that 30% of offenders were high-rate criminals. However, Moffitt and a sizable empirical literature suggest that only about 5% of offenders demonstrate the pathological criminality of life-course persistent offenders. The most severe criminals are marked by their exceptionality. Any scale which purports that one-third of all offenders are this variety is designed to fail. Conversely, the current scale is very selective, with only 2.4% of offenders postdicting as medium-rate and just 1.6% postdicting as high-rate. The remaining 96% of offenders are common, generally low-level, adolescence-limited types. In other words, the current scale, in conjunction with Moffitt's theory, suggests that only 4% of offenders will be high-rate. However, the instrument is unable to determine *which* 4%. While some strides have been made, more research is needed to correctly identify the elusive few pathological criminals.

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