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COMMENT: **POSTADOLESCENT BRAIN DEVELOPMENT: A DISCONNECT BETWEEN NEUROSCIENCE, EMERGING ADULTS, AND THE CORRECTIONS SYSTEM**

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TEXT:
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I. Introduction

When do people really grow up? Although individuals reach the age of adulthood at eighteen, many continue to exhibit immature, juvenile behavior. In 2005, a quarter of the adults sentenced to prison were between eighteen and twenty-five, many of whom were nonviolent, first-time offenders. [n1] A good example is Simon, who was just eighteen years old when he was involved in a fatal accident:

I arrived at the park in my car and there was a group of cars ... doing donuts and stuff. And then I started going a bit stupid just doing handbrake turns and reserve flicks [sic] and then all of a sudden the car rolled and Danny had his head out the window and he didn't have his seatbelt on so you can imagine then... . I just have no tears left now. I used to cry every night ... . [n2]

Danny was killed in the accident. Despite Simon's remorse for his immature actions, he was sent to serve time in adult prison. [n3]

[*731] Another example is Monica, who turned eighteen a few months before she decided to steal a car. [n4] She explained that the motivating factor in her decision to go through with the crime was the rush she felt from stealing: "You just feel great. Your heart's pumping... . That is the best feeling." [n5] Monica used the car for joyriding at excessive speeds before police caught her several days later. [n6] Monica stated that she did not consider the consequences of her actions. [n7] Both Simon and Monica acted immaturely; however, Simon's act resulted in far more tragic consequences. Monica was twenty-four when she completed her prison sentence, and subsequently attended youth-worker training. [n8] She has a hard time believing she ever had such poor judgment. [n9]

In America, the legal age of adulthood is eighteen, but research suggests that, structurally, the human brain is not aware of this societal milestone. [n10] Scientists are just beginning to conduct studies to determine why people change so drastically after they reach the age of eighteen, [n11] but it is clear that the seven-year period between eighteen and twenty-five is full of significant changes in both environment and responsibility. [n12] For example, many of these "emerging adults" [n13] move away from their parents and are often surrounded by others of the same age, with similar interests and similar goals. [n14] Some start college, while others begin to support themselves for the first time. [n15]

These individuals continue to develop both behaviorally and cognitively. [n16] The human brain continues to mature until at least the age of twenty-five, particularly in the areas of judgment, reasoning, and impulse control. [n17] When a highly impressionable emerging adult is **[*732]** placed in a social environment composed of adult offenders, this environment may affect the individual's future behavior and structural brain development. [n18] On the other hand, juvenile detention centers often provide detainees mandatory education and rehabilitation that simply is not available in adult prisons. [n19] The stark contrast between the adult and juvenile corrections systems provides little in terms of a hybrid approach for emerging-adult offenders, who are behaviorally and cognitively between these two extremes.

This raises the question of whether these emerging-adult offenders should be treated as fully culpable adults. Moral culpability may be a difficult concept to quantify, but the U.S. Supreme Court has recently made instructive determinations in a string of cases concerning the death penalty. [n20] In Roper v. Simmons, the Court outlawed the juvenile death penalty, relying on psychological and scientific brain research to conclude that a juvenile's character is not fully developed at ages sixteen or seventeen. [n21] The Court opined that a categorical rule against the juvenile death penalty was necessary to avoid violating the Eighth Amendment's rule against cruel and unusual punishment. [n22] The Court further noted that, although development does not cease at age eighteen, a line had to be drawn for policy purposes. [n23]

The issue is not as simple as determining whether emerging adults know the difference between right and wrong. [n24] Emerging adults actually have trouble controlling their behavior, not understanding that violating the law is morally wrong. [n25] A legal system that arbitrarily distinguishes between juveniles and adults based on the age of eighteen cannot be reconciled with the psychological, behavioral, and cognitive research that shows significant development through the age of twenty-five. This research does not necessarily indicate that all emerging adults should be held less responsible for their actions. The fact that brain development - particularly in the areas of reasoning, judgment, and impulse control - continues beyond the age of eighteen could have significant implications for the justice and corrections systems. [n26] **[*733]** Continued brain development in areas that implicate moral culpability suggests that rehabilitation efforts in corrections systems should look very different for emerging-adult offenders. The system of sentencing emerging adults, particularly for nonviolent, first-time offenders, should rely more on individual, developmental, and maturation information rather than only on traditional adult punishment and incarceration.

This Comment examines recent Supreme Court death-penalty jurisprudence and its emphasis on moral culpability and behavioral and cognitive development. In particular, it analyzes Roper and the Court's observations regarding the developmental differences between juveniles and adults. Part II evaluates recent scientific findings suggesting that development in decision-making skills, judgment, rational thought, and organization continues through an individual's mid-twenties. Additionally, it considers research demonstrating that the emerging-adult brain retains capacity for significant training-and learning-induced structural development and responds structurally to environmental stimuli. Part III analyzes the history and current state of juvenile and adult corrections in the United States, and compares the approaches, goals, and structures of these two very different systems.

Part IV examines existing programs aimed at emerging adults, and recommends a programmatic sentencing approach that squares the development of the emerging-adult brain with both juvenile-and adult-corrections models through (1) judicial education on emerging-adult development, (2) a structured scheduling model that requires emerging-adult prisoners to participate in education and work programs, (3) re-entry programs with a focus on individualized counseling, and (4) specialized programming particularly for emerging-adult inmates. These recommendations attempt to lower recidivism rates and incarcerations costs for nonviolent, first-time, emerging-adult

offenders. Finally, Part V concludes that, while no one program model is a cure-all for emerging-adult inmates, state legislatures should address emerging-adult corrections and consider this research in determining the availability of appropriate sentencing structures geared toward these offenders.

II. The Emphasis of Recent Supreme Court Jurisprudence on Moral Culpability and Behavioral and Cognitive Development

The Supreme Court has recently considered issues of moral culpability and behavioral and cognitive development in several death-penalty cases. [n27] Because these cases address brain development within **[*734]** the context of the legal system, they demonstrate that the Court has followed a clear trend of using psychological, behavioral, and cognitive-brain development research in its determinations.

A. Thompson and Stanford: The Minimum Age for the Death Penalty

In 1988, the Thompson v. Oklahoma Court determined that evolving standards of decency [n28] forbade the execution of offenders who were younger than sixteen when they committed their crime. [n29] The Court based its decision on the Eighth Amendment's prohibition against cruel and unusual punishment. [n30] The Court explained that juveniles were less culpable because

inexperience, less education, and less intelligence make [a juvenile] less able to evaluate the consequences of his or her conduct while at the same time he or she is much more apt to be motivated by mere emotion or peer pressure than is an adult. The reasons why juveniles are not trusted with privileges and responsibilities of an adult also explain why their irresponsible conduct is not as morally reprehensible as that of an adult. [n31]

Furthermore, the Court explained that subjecting an individual under the age of sixteen to capital punishment would not serve the "two principle social purposes" of the death penalty - retribution and deterrence. [n32]

Just one year later, however, the Stanford v. Kentucky [n33] Court seemed to stray from Thompson's rationale. The Court held that the Eighth and Fourteenth Amendments did not preclude execution of sixteen-to seventeen-year-old offenders because state legislatures determined the evolving standards of decency. [n34] Failing to find a clear national consensus concerning the applicability of capital punishment to **[*735]** these offenders, [n35] the Court ruled that states could determine the minimum age for imposing the death penalty, so long as that minimum age was at least sixteen. [n36] Furthermore, the Court declined to include public-opinion polls or views of professional organizations, interest groups, and the international community in its ruling, and concluded that juvenile capital punishment did not offend the Constitution because no clear societal consensus existed. [n37]

B. Penry and Atkins: Capital Punishment for Mentally Retarded Individuals

In Penry v. Lynaugh, the Court held that the Eighth Amendment did not mandate a categorical exemption from the death penalty for mentally retarded individuals. [n38] The Court stated that "in light of the diverse capacities and life experiences of mentally retarded persons, it cannot be said ... that all mentally retarded people, by definition, can never act with the level of culpability associated with the death penalty." [n39]

In 2002, however, the Court overturned Penry in Atkins v. Virginia. [n40] The Court held that the "standards of decency" had evolved since its 1989 Penry decision, and that the death penalty constituted "excessive punishment" to individuals with reduced mental capabilities. [n41] Because the mentally retarded were "less morally culpable" than those "offenders who are not mentally retarded," capital punishment seemed an ineffective deterrent. [n42] The Atkins Court relied on four main factors: (1) legislative intent; (2) the rare imposition of the death penalty on the mentally retarded; (3) religious-, professional-, social-, and international-community opinions; and (4) whether the death penalty

constituted cruel and unusual punishment of mentally retarded individuals under the evolving standards of decency. [n43] In its independent **[*736]** examination, the Court specifically used cognitive and behavioral research in determining that executing mentally retarded individuals did not serve the retribution and deterrence goals of the death penalty:

The theory of deterrence in capital sentencing is predicated upon the notion that the increased severity of the punishment will inhibit criminal actors from carrying out murderous conduct. Yet, it is the same cognitive and behavioral impairments that make these defendants less morally culpable ... that also make it less likely that they can process the information of the possibility of execution as a penalty and, as a result, control their conduct accordingly. [n44]

C. Roper: Juvenile Death Penalty

The Court considered its Atkins reasoning in Roper v. Simmons, which held that the juvenile death penalty violated the Eighth and Fourteenth Amendments. [n45] After receiving a death sentence for a homicide he committed at seventeen, [n46] Christopher Simmons argued that he had received ineffective assistance of counsel at trial because his attorney failed to present evidence of his immature and impulsive nature and his susceptibility to being manipulated and influenced. [n47] The trial court sustained the sentence, however, and Simmons filed another petition for postconviction relief, arguing that the Eighth and Fourteenth Amendments should protect juveniles from capital punishment based on Atkins. [n48] Simmons asserted that, while mentally retarded offenders are less morally culpable because of their "diminished ability to understand and process information, to learn from experience, to engage in logical reasoning, or to control impulses," [n49] juveniles display similar characteristics. [n50] Citing Atkins and Thompson, the Missouri Supreme **[*737]** Court agreed with Simmons, set aside his death sentence, and resentenced him to life in prison without eligibility for probation or parole. [n51]

On appeal, the U.S. Supreme Court set forth a rule protecting juveniles from capital punishment and suggested three general differences between juveniles and adults: (1) "[a] lack of maturity and an underdeveloped sense of responsibility are found in youth more often than in adults and are more understandable among the young"; [n52] (2) "juveniles are more vulnerable or susceptible to negative influences and outside pressures, including peer pressure"; [n53] and (3) "the character of a juvenile is not as well formed as that of an adult." [n54] While the Court drew a line at the age of eighteen for the death penalty, [n55] it also conceded that the enumerated qualities did not disappear when a juvenile turned eighteen. [n56]

The Roper Court depended on psychological research from 1992 and 1968, which has evolved significantly since its publication. For example, the Court cited a 1992 study by Professor Jeffrey Jensen Arnett to support its determination that those under the age of eighteen lack maturity and demonstrate an underdeveloped sense of responsibility. [n57] Arnett's more recent research suggests, however, that significant behavioral and cognitive development continues beyond the age of eighteen. [n58] He found that emerging adults lack the maturity expected of adults and demonstrate an underdeveloped sense of responsibility, much like their juvenile counterparts. [n59]

Additionally, Roper relied on a study from 1968 that showed the character of a juvenile is not as well formed as that of an adult because personalities of juveniles are "more transitory, less fixed." [n60] According to the Court,

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The reality that juveniles still struggle to define their identity means it is less supportable to conclude that even a heinous crime committed by a juvenile is evidence of irretrievably depraved character. From a moral standpoint it would be misguided to equate the failings of a minor with those of an adult, for a greater possibility exists that a minor's character deficiencies will be reformed. [n61]

Again, however, subsequent research conclusively shows personality and individualism are traits that are not set by age eighteen, but instead are determined in the late twenties.

The Roper Court recognized that, due to the diminished culpability of juveniles, "neither retribution nor deterrence provides adequate justification for imposing the death penalty." [n62] Furthermore, the Court stated that "retribution is not proportional if the law's most severe penalty is imposed on one whose culpability or blameworthiness is diminished, to a substantial degree, by reason of youth and immaturity." [n63] The Court also found that it was unclear whether the death penalty was an effective deterrent for juveniles because they were less likely to engage in a cost-benefit analysis and consider execution as a possible result of their actions. [n64]

Finally, Roper rested on the type of scientific research that now suggests that both behavioral and cognitive development continue through the twenties. [n65] Although the Court "[drew] the line" for capital punishment at eighteen, it simultaneously recognized that brain development could continue beyond that age. [n66] As a result, the Court's reasoning leaves the question of whether emerging adults are categorically less culpable for their actions open. Even if emerging adults must be held fully culpable for their actions based on the Court's line-drawing in Roper, the corrections system should treat emerging adults differently.

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III. Postadolescent Behavioral and Cognitive Development: The Emerging-Adult Brain

Historically, scientists believed that the human brain ceased development when an individual reached the age of twelve. [n67] With the advent of magnetic resonance imaging (MRI), [n68] however, scientists have found evidence that the brain continues to develop throughout adolescence. [n69] The most recent research concludes that both behavioral [n70] and cognitive [n71] development continues through "emerging adulthood."

A. Evidence of Postadolescent Behavioral Development

Many studies have demonstrated behavioral development in emerging adults. In 2000, Arnett's study indicated that emerging adulthood is a period between adolescence and adulthood which is "theoretically and empirically distinct." [n72] Arnett's research showed that emerging adulthood is a period of demographic diversity and instability that includes identity exploration based on "love, work, and world views." [n73] Furthermore, Arnett noted that risk-taking behavior, such as unprotected sex or reckless driving, actually peaks during emerging adulthood. [n74] At the age of eighteen, the emerging adult (1) leaves the dependency of childhood and adolescence, (2) does not yet endure the normative responsibilities of adulthood, (3) is less likely to be monitored **[*740]** by adults, and (4) can pursue experiences more freely without the constraints of adolescence or adulthood. [n75]

Although Arnett explained that "eighteen is a good age marker for the end of adolescence and beginning of emerging adulthood," he also noted that the passage from emerging adulthood to adulthood is much less definite. [n76]

There are nineteen-year-olds who have reached adulthood - demographically, subjectively, and in terms of identity formation - and twenty-nine-year-olds who have not. Nevertheless, for most people, the transition from emerging adulthood to young adulthood intensifies in the late twenties and is reached by age thirty ... . [n77]

Arnett therefore concluded that the "heterogeneity of emerging adulthood represents both a warning and an opportunity" for other scientific research. [n78]

B. Evidence of Postadolescent Cognitive Development

Before scientists used MRI to quantify anatomical brain development, they had to rely on postmortem studies. [n79] These studies revealed that maturation began in the womb and continued through the third decade of life. [n80] Research on the central nervous system continued with positron emission tomography (PET), which measures baseline glucose metabolism as an index of brain activity. [n81] Modern studies performed using MRI have confirmed earlier discoveries; [n82] however, the introduction of functional magnetic resonance imaging (fMRI) scans has allowed scientists to perform additional task-based research on subjects. [n83]

[*741] Essentially, fMRI has permitted researchers to determine which regions of the brain are activated by proposed questions or scenarios as an individual performs a task inside the MRI scanner. [n84] For example, in one study on adolescents and adults, researchers found that, when the groups viewed pictures of adult facial expressions, their patterns of brain activity were very different. Adults correctly identified the facial expressions by relying on the prefrontal cortex [n85] - the area of the brain involved in judgment, reason, and planning. [n86] Adolescents, however, struggled to determine correct responses. [n87] The researchers found that adolescents relied mostly on the amygdala - a region of the brain associated with gut reactions, instinct, and overall emotional responses. [n88] As the teens aged, they came to rely more on the prefrontal cortex and less on the amygdala. [n89]

MRI and fMRI have also allowed researchers to study how the brain develop over time. [n90] One important part of development is myelination - the process by which myelin, a fatty white substance, forms a sheath around the axons of neurons inside the brain when they mature. [n91] Myelination dramatically improves the ability for an axon to conduct a signal [n92] because insulation allows for quicker communication between brain cells and enhances the speed and efficiency of **[*742]** electrochemical impulses. [n93] Researchers have long compared this process to the advent of a superhighway within the brain. [n94]

Scientists have associated differences in myelination with varying levels of cognitive ability. [n95] Indeed, they believe that cognitive processes rely on myelination - or white-matter integrity - and measure functional maturity in the brain based on white-matter development. [n96] Research has shown that white-matter maturation, particularly in the frontal lobe of the brain (which includes the prefrontal cortex), correlates with measures of executive function. [n97]

During gestation and infancy, the human brain looks very different than it does in adulthood [n98]: there is much more gray matter, which is composed of neurons. [n99] While the brain is forming, it produces more cells and connections than will eventually be needed. [n100] During childhood, the brain undergoes a "pruning" process in which unneeded brain cells and connections are eliminated. [n101] Although the human brain is 95 percent of its adult size before a child reaches the age of six, its development is far from over. [n102] The brain experiences yet another pruning period and increased myelination during adolescence. [n103] Research has shown that gray-matter volume has the following four-part developmental trajectory: its volume within the brain increases during **[*743]** childhood, peaks at adolescence, and decreases in both late adolescence and young adulthood. [n104]

Researchers agree that adolescents take more risks in part due to the fact that they have an immature prefrontal cortex. [n105] Evidence shows that the prefrontal cortex does not fully mature until the mid-twenties, and that myelination continues throughout the twenties. [n106] Myelination generally occurs from back to front, [n107] and the frontal lobe's gray matter is among the last to mature. [n108] Because the prefrontal cortex governs impulsivity, judgment, planning for the future, and foresight of consequences, it is responsible for the very characteristics that may make one morally culpable. [n109]

In a study on postadolescent brain maturation, researchers found changes in the frontal cortices in individuals ages twelve to thirty. [n110] The study showed a continued gray-matter reduction between childhood and adulthood, which reflected "increased myelination in peripheral regions of the cortex that may improve cognitive processing in adulthood." [n111] This evidence highlighted the likelihood that frontal-lobe maturation affects adult cognition. [n112]

C. Neuroplasticity and the Emerging-Adult Brain

The brain is sensitive to environmental changes well past the age of eighteen. For example, in a study performed on children, adolescents, and adults, researchers found that practicing the piano had regionally specific white-matter development in each age group. [n113] While still **[*744]** maturing, fibers were susceptible to "training-induced plasticity" - maturation due to changes in behavior and environment. [n114]

Researchers found further evidence of neuroplasticity in MRI brain scans of individuals learning to juggle. [n115] The researchers split the group into two subgroups, one that practiced juggling for several months and one that did not. [n116] In subsequent MRI scans, the jugglers showed transient structural gray-matter changes, while the nonjugglers showed no alterations. [n117] The results contradicted the traditional view that, besides normal age-related changes, the structure of the adult brain does not change significantly, and also indicated that "learning-induced cortical plasticity is also reflected at a structural level." [n118]

Another study determined how the average volume of London cab drivers' hippocampi [n119] compared with that of non-cab drivers. [n120] The researchers found that the hippocampi of the cab drivers showed significantly increased gray-matter volume with no similar increase in the non-cab drivers. [n121] The researchers concluded that this reflected a reorganization of circuitry within the hippocampus "in response to a need to store an increasingly detailed spatial representation." [n122] According to the researchers, "on a broader level, the demonstration that normal activities can induce changes in the relative volume of gray matter in the brain has obvious implications for rehabilitation of those who have suffered brain injury or disease." [n123] It is unclear, however, whether structural changes are possible due to similar environment-related plasticity in other regions of the human brain. [n124]

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D. Structural Brain Alterations Based on Environmental Changes in Emerging Adults

The Laboratory for Adolescent Studies at Dartmouth College recently completed the first phase in a study that followed brain development of college freshman to clarify changes in brain structure. [n125] According to the researchers, the freshman year is "a time filled [with] cognitive, social, and emotional challenges that require ongoing adaptation." [n126] Overall, the study suggested that a comprehensive change of environmental demands over the course of a six-month period contributed to modifications in the brain structure. [n127]

The study used a group of healthy college freshman between 17.9 and 19.8 years old, and scanned each participant using MRI once at the beginning of the study, and again approximately six months later [n128] The results of the study showed regionally specific changes in brain structure likely due to myelination, which has been linked to environmental provocation [n129]:

The sociocognitive skills required to get along in this new environment are likely related to the changes observed in regions of the brain known to contribute to emotional experience and behavioral regulation. The observed intensity increases in the insular cortex, claustrum, cingulate, and caudate nucleaus imply significant change in the connectivity of these areas. It is conceivable that these changes are at least in part the result of environmental provocation. [n130]

Thus, these results suggest that the brain is dynamic and environmentally sensitive, and that environmental demands [n131] can result in discernable structural changes. [n132] These changes imply that environmental **[*746]** surroundings are of great importance for emerging adults in particular. The research supports the theory that, when an emerging adult is placed in prison, structural changes could continue to occur in the brain based on the environmental and behavioral demands of the prison. Therefore, it is likely that the individual's behavioral and cognitive response to the environment will be categorically different from an emerging adult who is surrounded by other emerging adults in an incentive-based, structured rehabilitation program, with education opportunities that blend components of the juvenile

and adult systems.

E. Analysis of Postadolescent Brain Development in Light of Roper

Research and the Court's language in Roper suggest the scientifically arbitrary nature of the age of eighteen in determining sentencing for emerging adults. While there is extensive research on individuals who begin to offend as juveniles, there is very little research on first-time, emerging-adult offenders [n133] other than the study demonstrating the prevalence of risk-taking behaviors between the ages of eighteen and twenty-five. [n134]

Taken together, the behavioral-and cognitive-development research and the Supreme Court's suggestion that maturity among offenders is fluid indicate that states should take a more flexible approach to promote rehabilitation efforts for emerging-adult offenders in prison. Currently, however, when one reaches the age of eighteen and engages in criminal behavior in the United States, the options for sentencing are sparse at best. [n135]

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IV. Contrasts Between Juvenile and Adult Corrections

A. Juvenile Corrections and Its Emphasis on the Individual Offender

In 1899, Cook County, Illinois formed the first juvenile corrections system [n136] in response to concerns that young offenders were products of poor living environments that spawned delinquent behavior. [n137] Instead of punishing juvenile offenders like their adult counterparts, the juvenile system focused on rehabilitation to capitalize on the perceived malleability of these individuals. [n138]

By the early 1940s, every state had created an independent juvenile court system. [n139] The juvenile court's function was to determine a course of treatment necessary to rehabilitate the offender through an individually tailored, clinical approach. [n140] Therefore, "the juvenile was to be released as soon as he ... was rehabilitated, or, conversely, to be kept in custody or under supervision until the age of majority." [n141] Many states created the juvenile court with the goal of providing judges with the flexibility to determine sentences based on an individual, treatment-oriented framework. [n142] The juvenile-court judge had unfettered discretion in terms of the length of sentence and sentence structure for the juvenile. [n143] Flexibility within juvenile sentences continues to be a mainstay of the juvenile corrections system.

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1. waiver

Increases in juvenile crime [n144] led to public demand for changes within juvenile corrections in the 1990s. [n145] State legislatures responded by shifting the focus from rehabilitation to incarceration for juveniles. [n146] Additionally, every state has relaxed standards to facilitate the prosecution of juveniles in adult criminal courts. [n147] Statutory criteria governs the waiver process, which involves a balance of state interests in public safety, and the interests, maturity, and culpability of the accused juvenile. [n148] Critics, however, point out the lack of staff, the differing missions of the adult and juvenile systems, and the financial impacts of failing to provide appropriate treatment to juveniles based on their unique developmental needs. [n149] Yet, waiver is based on a flexible approach to sentencing and a determination of the juvenile's capacity for rehabilitation.

2. blended sentencing

Several states have recently implemented blended-sentencing statutes, which allow juveniles to be held accountable for their offense under both juvenile and criminal laws. [n150] A typical blended-sentencing provision permits a judge to sentence a juvenile to both a juvenile disposition and a stayed adult criminal sentence. [n151] If the juvenile fails to meet the requirements of the juvenile sentence, the stayed adult criminal sentence will be imposed, and the juvenile will

immediately be **[*749]** transferred to the adult facility. [n152] Under the "Criminal-Inclusive Blend," a juvenile convicted in adult court is sentenced to both juvenile and criminal sanctions, though the court usually suspends the latter. [n153] Under the "Criminal-Exclusive Blend," the juvenile tried in adult court is given either juvenile or criminal sanctions. [n154] Juvenile courts also retain the option of "Juvenile-Contiguous Blend" - sentencing the juvenile to juvenile detention and then to adult detention. [n155] This approach, like waiver, is fluid and is based primarily on the judicial determination of the individual's maturity and culpability.

3. extended juvenile jurisdiction

Minnesota was the first state to introduce extended juvenile jurisdiction (EJJ), which allows a judge to impose both a juvenile and adult sentence. [n156] Thirty-four states extend juvenile-court jurisdiction to individuals under twenty-one. [n157] EJJ, however, has raised concern among scholars and lawmakers because it may place pressure on the juvenile to get rehabilitated, instead of on the state to rehabilitate the juvenile. [n158] Others see value in a system that allows rehabilitation efforts to extend past an individual's eighteenth year. [n159] Moreover, although rehabilitation efforts for juvenile offenders who are over the age of **[*750]** eighteen currently exist in juvenile corrections facilities, EJJ is only available to those who commit crimes before reaching age eighteen. [n160]

4. scheduling

Some states allocate resources to juvenile corrections based on the system's underlying mission of rehabilitating minors and equipping juveniles to lead responsible, productive lives after incarceration. [n161] A juvenile disposition can cost the state almost three times more than adult corrections due to the heightened services and programming offered to juveniles. [n162] For example, juvenile corrections institutions in Wisconsin adhere to a strict daily schedule. [n163] The schedule includes mandatory education courses - such as Math, English, Social Studies, Keyboarding, Geography, Careers, and Physical Education and Health - and apportion at least an hour to recreation, gym time, and community service. [n164] The facilities offer parenting classes and counseling and therapy sessions, which are "weaved through the day." [n165] Finally, the number of staff at juvenile institutions allows for a significant amount of rehabilitation services and intervention. [n166]

B. Adult Corrections

1. determinate sentencing

The adult corrections system stands in stark contrast to the juvenile model, especially with its move away from indeterminate sentencing. [n167] Until the 1970s, every state had indeterminate sentencing. [n168] The legislature set forth sentence maximums; judges made determinations between several choices including incarceration, probation, maximum sentences, and fines; corrections officers could decide whether an inmate qualified for "good time"; and parole boards determined release dates for **[*751]** prisoners. [n169] According to the Model Penal Code, the three general purposes governing the sentencing and treatment of the offender were (1) preventing offenses; (2) promoting correction and rehabilitation of offenders; and (3) safeguarding offenders against "excessive, disproportionate or arbitrary punishment." [n170] The system did not place an emphasis on the imposition of just deserts, the level of seriousness of the crime committed, or the expression of public outrage. [n171]

Although no standard approach existed among the states, structured sentencing became more prevalent by 1999. [n172] Between 1975 and 1985, many states developed voluntary guidelines to assist judges with sentencing. [n173] While structured sentencing guidelines are helpful in estimating prison-space needs and reduce sentencing disparities, they significantly constrain judges' decision-making processes in individual cases. [n174] Thus, "many judges have long opposed guidelines and mandatory sentencing laws because their rigidity can result in injustices in individual cases." [n175]

Wisconsin was one of forty states that passed structured sentencing laws during the 1990s. [n176] Under its Truth in

Sentencing Act, the state abolished mandatory release and discretionary parole, supplied a maximum period of confinement and extended supervision to guide judges, and required that offenders serve the full sentenced time of confinement. [n177] Essentially, judges sentence offenders to a set amount of time in prison plus additional time on extended supervision, and an offender who violates the rules of extended supervision can be sent back to prison. [n178] Such programs are extremely expensive, partly because they result in increased length of sentences. [n179] Analysts have projected the annual cost for Wisconsin's system to exceed $ 50 million by 2010 and the cumulative cost to surpass $ 575 million by 2014. [n180]

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2. reemergence of rehabilitation in adult corrections

Recently, some states have reinstated rehabilitative measures in adult prison systems. Plagued by overcrowding and recidivism, the "tough on crime" approach that dominated politics since the 1970s also produced a need for more prisons in America. [n181] For example, California built thirty-three prisons from 1984 to 2004, but had only built twelve in the preceding 132 years. [n182] States like Ohio, however, have embraced rehabilitation as a model for adult corrections, and developed reentry programs. [n183] Similarly, Illinois reopened a correctional center in LaSalle County that focused explicitly on drug-treatment programs, inmate education, and job preparation. [n184] Upon release, inmates receive comprehensive case management to assist them with finding employment and the general transition into society. [n185]

The reinstitution of rehabilitative measures is aimed at reducing recidivism, as the corrections systems release more prisoners each year. [n186] Throughout the country, 600,000 inmates leave prisons annually, and the rate of recidivism indicates that two-thirds of those will be rearrested within three years of their release. [n187] Still, some argue that the recent shift is based on economics and believe that, when states regain funding for prisons, inmates will again see a reduction in rehabilitative measures. [n188]

a. Reentry Programs

One example of a successful rehabilitation program is the reentry program, which was recently implemented at a facility in LaSalle, Illinois. Before Illinois enacted the program, one ex-prison inmate described the extent of the state's reentry program: a pamphlet with contact information for potential jobs and a bus ticket back to the same neighborhood where he committed the crime that landed him in prison. [n189] As an alternative, some state correctional facilities have recently begun a front-end approach to reentry. Ohio instituted the model reentry program **[*753]** in 2001. [n190] The program begins with an initial-needs assessment by the court to determine a reentry plan; the offender then meets periodically with a reentry case manager who monitors any progress; rehabilitation programs assigned to the offender are consistent with the reentry plan; and each offender must complete 300 hours of community service during incarceration. [n191]

Congressional measures for reentry programs have followed. In 2005, the House passed the Second Chance Act to facilitate successful reentry of prisoners back into society. [n192] The primary goals of the Act are to reduce recidivism, increase public safety, and foster better communication among states and communities. [n193] Key components of the Act include the reauthorization of federal reentry grants, the creation of a National Re-Entry Resource Center, the establishment of a federal reentry taskforce to identify best practices and encourage collaboration on reentry strategies, the authorization of funding to conduct reentry research, and the creation of grants for nonprofit organizations to provide mentoring and transitional service to returning offenders. [n194]

b. Education in Prisons

Compared to 18 percent of the general population, an estimated 40 percent of the state-prison inmates, 27 percent of federal-prison inmates, and 31 percent of those serving probation had not completed high school. [n195] The availability

of educational programs has increased in recent years. In 1995, 88 percent of state prisons and only 72 percent of private prisons offered such programs; in 2000, 91 percent of state prisons and 88 percent of private prisons offered educational programs to inmates. [n196] More than half of state inmates who were twenty-four or younger had not completed high school or obtain a GED, but young inmates were more likely to participate in prison educational **[*754]** programs. [n197] This research suggests that educational programs may be well suited to emerging-adult inmates.

3. scheduling

The most notable scheduling difference between juvenile and adult corrections is that many states do not require adults to attend school or to work. [n198] Additionally, the adult facilities often reserve therapy and counseling services for inmates preparing for release. [n199] Therefore, the facilities may place an inmate who actively seeks therapy at the front end of a sentence on a waiting list.

IV. Emerging-Adult Corrections: Recommendations for a New Approach Based on Existing Infrastructure

A. Existing Programs

On a national level, some adult corrections facilities have begun to offer programming specifically for emerging-adult offenders. Washington's Department of Corrections allows emerging adults facing less than five years of incarceration to serve time at a grant-funded vocational transition program. [n200] The Department of Health and Human Services recently awarded eleven three-year grants to provide drug-abuse treatment for adults residing in rural communities, and one California county will use its grant specifically for emerging adults. [n201] In 2003, the Department also awarded State Incentive Grants - which aimed to reduce the illegal use of drugs - and states like Missouri, Connecticut, and Utah received grants to provide prevention and management systems for the emerging-adult population. [n202]

[*755]

B. Recommendations

1. educating judges about emerging-adult development

While juvenile-court judges consider developmental information for the purposes of rehabilitating juveniles at the time of sentencing, adult-court judges have fewer rehabilitation options in sentencing inmates, and therefore may have less experience determining appropriate rehabilitation schemes for emerging-adult prisoners. [n203] Therefore, educating adult-court judges about the behavioral-and cognitive-development needs of emerging adults is essential.

2. structured scheduling

More importantly, front-end rehabilitation schemes should be available to emerging-adult inmates when they enter the prison system. Much like the incentive-based blended sentencing and EJJ in juvenile sentencing, emerging-adult prisoners need structured programs suited to their definitive developmental stage.

a. Education and Vocational Programs

Even though some adult prisons offer up to five hours of education programming per day, attendance is often not mandatory. [n204] Research has shown that structured programs yield positive results among emerging adults in particular, [n205] and that learning-and training-induced structural changes within the brain continue through the mid-twenties. [n206] This indicates that education programs may be especially well suited for the emerging-adult prison population.

Emerging adults are more likely than any other age group in prison to attend class and receive their GEDs. [n207] Policymakers should recognize that education is a strong area of interest for this group and provides a positive outlet.

As such, academic or vocational education should be mandatory for nonviolent, first-time offenders. Additionally, Ohio's approach, in which officials meet with inmates at the beginning of their incarceration to discuss community-service requirements and to **[*756]** create a support network based on rehabilitation, could be especially useful.

b. Reentry Programs

Emerging adulthood is a period of behavioral development during which risk-taking behavior peaks. [n208] Additionally, while emerging adults may understand the difference between right and wrong, their brains continue to mature in areas that govern judgment, reasoning, and impulse control. [n209] Thus, emerging-adult offenders may also benefit tremendously from individualized and ongoing counseling programs that address their developmental needs. Front-end rehabilitation that continues through the prisoner's stay and focuses on the individual's progress could benefit emerging adults in particular.

c. Specialized Programming for Emerging-Adult Inmates

Programs specifically designed for emerging adults are necessary in adult prisons because of their developmental needs. Research suggests that environment may affect not only the future behavior of emerging adults, but also structural brain development, indicating that they are highly impressionable. [n210] Therefore, specialized programming aimed at imposing structured scheduling and controlling their social environment to include positive outlets and limit exposure to violent adult prisoners may be necessary. While some specialized programming for emerging adults currently exists, [n211] much of it is in the form of drug treatment. [n212] Encouraging social interaction between emerging-adult inmates could be useful for their developmental needs.

d. Rehabilitation Yields Lower Recidivism Rates and Lower Costs

Rehabilitation programs are more cost effective than long-term incarceration. [n213] Many states are now turning back to rehabilitation in their adult prison systems due to the rising costs of incarceration and prison overcrowding. [n214] Unlike most adult corrections facilities, juvenile corrections facilities often offer structured programs that suit the overall goal of producing individuals who lead responsible, productive lives **[*757]** after incarceration. [n215] While juvenile programs can cost states up to three times the amount of adult programs, studies have shown that state expenditures on juvenile treatment centers are cost effective in the long run. [n216] For example, one study found "that for every dollar spent on intensive treatment for seriously delinquent youth, we saved $ 7.18 in lowered recidivism and associated victim costs." [n217]

Juvenile corrections systems cost more because of their emphasis on rehabilitating the individual. This emphasis begins with juvenile-court judges, who have more leeway to determine suitable sentences based on developmental needs. [n218] Juvenile sentences provide a combination of education, counseling, and equipping the juvenile to become a responsible member of society. [n219] The underlying theory is that juveniles are still developing, and therefore are amenable to rehabilitation. [n220] Based on emerging-adult research and the lack of emphasis on rehabilitation in adult prisons, prisons should consider emerging adulthood a unique developmental stage. [n221]

Determining recidivism rates can be difficult because of the many ways the term is defined, however, the Mendota Juvenile Treatment Center's definition is quite simple: one who commits a new offense. [n222] Based on this definition, the juvenile recidivism rate in Wisconsin is between 9 and 11 percent for girls, and approximately 27 percent for boys. [n223] Nationally, however, the recidivism rate for adult males in prisons is substantially higher, totaling over 50 percent. [n224] Therefore, juvenile corrections facilities may cost states more up front, but the lowered recidivism saves money in the long run.

[*758]

V. Conclusion

There is very little empirical research regarding first-time emerging-adult offenders. [n225] Regardless, states should consider their behavioral and brain development when determining policy and sentencing. The brain is more malleable than scientists once believed [n226]: Research confirms growth well beyond the age of eighteen, and has allowed for a deeper understanding of the end of adolescence and the transition to adulthood. [n227] Studies have shown that, during this developmental stage, the brain responds to learning-and training-induced and environmentally stimulated structural changes. These findings suggest that emerging adulthood is both a time of heightened risk and a heightened opportunity for the justice system. Lobbyists and legislatures must consider the needs of emerging adults and incorporate them into specialized programming for these individuals.

An incentive-based, specialized rehabilitation program would reduce recidivism rates by giving offenders tools to become functioning members of society after release. Simultaneously, this could control costs associated with recidivism and prison overcrowding due to lengthy incarceration periods. Finally, and perhaps most importantly, such programs are likely to be successful as they would suit emerging adults' distinct behavioral-and cognitive-development needs.

Legal Topics:

For related research and practice materials, see the following legal topics:
Constitutional LawBill of RightsFundamental RightsCriminal ProcessCruel & Unusual PunishmentCriminal Law & ProcedureJuvenile OffendersSentencingCapital PunishmentCriminal Law & ProcedureSentencingCapital PunishmentCruel & Unusual Punishment

FOOTNOTES:

n1. Paige M. Harrison & Allen J. Beck, Bureau of Justice Statistics, U.S. Dep't of Justice, Prisoners in 2004, at 8-9 (2005) http://www.ojp.usdoj.gov/bjs/pub/pdf/p04.pdf.

n2. Innovations: Teen Brain (ABC Radio Australia radio broadcast Jan. 30, 2006) (transcript available at http://www.abc.net.au/ra/innovations/stories/ s1559561.htm).

n3. Id.

n4. Id. Monica had previously stolen cars at age fourteen. Id.

n5. Id.

n6. See id.

n7. Id.

n8. Id.

n9. Id.

n10. Id.; see also Craig M. Bennett & Abigail A. Baird, Anatomical Changes in the Emerging Adult Brain: A Voxel-Based Morphometry Study, 27 Human Brain Mapping 766, 766 (2006); Jeffrey Jensen Arnett, Emerging Adulthood: A Theory of Development from the Late Teens Through the Twenties, 55 Am. Psychologist 469, 471 (2000).

n11. Innovations: Teen Brain, supra note 2.

n12. See, e.g., Bennett & Baird, supra note 10, at 766; Arnett, supra note 10, at 471.

n13. Arnett, supra note 10, at 471 (identifying emerging adults as those individuals ages eighteen to twenty-five).

n14. See id.

n15. Id.

n16. See id. at 471-73; Bennett & Baird, supra note 10, at 766-67.

n17. See Claudia Wallis, What Makes Teens Tick, Time, May 10, 2004, at 56.

n18. See generally Bennett & Baird, supra note 10.

n19. Wis. Council on Children & Families, Rethinking the Juvenile in Juvenile Justice 17-18 (2006), http://www.wccf.org/pdf/rethinkingjuvjjsrpt.pdf

n20. See, e.g., Roper v. Simmons, 543 U.S. 551 (2005); Atkins v. Virginia 536 U.S. 304 (2002); Penry v. Lynaugh, 492 U.S. 302 (1989); Stanford v. Kentucky, 492 U.S. 361 (1989); Thompson v. Oklahoma, 487 U.S. 815 (1988).

n21. See 543 U.S. at 568-70.

n22. Id. at 568.

n23. See id. at 574.

n24. Id.; Innovations: Teen Brain, supra note 2.

n25. Innovations: Teen Brain, supra note 2.

n26. Id.; Wallis, supra note 17, at 65.

n27. See supra note 20.

n28. In Trop v. Dulles, the Supreme Court determined that the Eighth Amendment required that all punishments be subject to the "evolving standards of decency that mark the progress of a maturing society." 356 U.S. 86, 101 (1958). Indicia of these evolving standards include practices of other civilized nations, public attitudes, and legislative judgments. See id. at 101-04; see also Gregg v. Georgia, 428 U.S. 153, 171 (1976).

n29. 487 U.S. 815, 822-23 (1988).

n30. Id. at 821-23.

n31. Id. at 835.

n32. Id. at 836-38.

n33. 492 U.S. 361 (1989).

n34. See id. at 369-71.

n35. See id. at 370-71. The Court explained that, of the "37 States whose laws permit capital punishment, 15 decline to impose it upon 16-year-old offenders and 12 decline to impose it on 17-year-old offenders." Id. at 370.

n36. Id. at 371-72 (citing Tyson v. Arizona, 481 U.S. 137, 154 (1987)).

n37. See id. at 377.

n38. See 492 U.S. 302, 338-39 (1989). The Court noted that only two states had laws banning the capital punishment of mentally retarded people. Id. at 334.

n39. Id. at 338-39.

n40. See 536 U.S. 304, 320-21 (2002).

n41. See id. at 306, 321.

n42. Id. at 320.

n43. State ex rel. Simmons v. Roper, 112 S.W.3d 397, 404 (Mo. 2003) (en banc), aff'd 543 U.S. 551 (2005); Lucy C. Ferguson, Comment, The Implications of Developmental Cognitive Research on "Evolving Standards of Decency" and the Imposition of the Death Penalty on Juveniles, 54 Am. U. L. Rev. 441, 451 (2004).

n44. Atkins, 536 U.S. at 320.

n45. 543 U.S. 551, 578-79 (2005).

n46. Simmons and a friend broke into the victim's home, "covered her head with a towel, and walked her to a railroad trestle spanning the Meramec River. There they tied her hands and feet together with electrical wire, wrapped her whole face in duct tape and threw her from the bridge, drowning her in the waters below." Id. at 556-57.

n47. Id. at 558-59. Simmons's counsel also called experts who testified about Simmons's difficult home environment, behavioral changes, poor academic performance, truancy, drug and alcohol use, and the influence of other teenagers and young adults. Id. at 559.

n48. See id. at 558-59.

n49. Atkins, 536 U.S. at 320.

n50. See State ex rel. Simmons v. Roper, 112 S.W.3d 397, 399-400 (Mo. 2003).

n51. See id. at 412-13.

n52. Roper v. Simmons, 543 U.S. 551, 569 (2005) (quoting Johnson v. Texas, 509 U.S. 350, 367 (1993)).

n53. Id. (citing Eddings v. Oklahoma, 455 U.S. 104, 115 (1982)).

n54. Id. at 570.

n55. The Court concluded that "the age of 18 is the point where society draws the line for many purposes between childhood and adulthood." Id. at 574.

n56. Id.

n57. Id. at 569 ("Adolescents are overrepresented statistically in virtually every type of reckless behavior." (citing Jeffrey Arnett, Reckless Behavior in Adolescence: A Developmental Perspective, 12 Developmental Rev. 339, 339 (1992))).

n58. See Arnett, supra note 10; see also infra Part III.A.

n59. See Arnett, supra note 10.

n60. 543 U.S. at 570 (citing Erik H. Erikson, Identity: Youth and Crisis (1968)).

n61. Id.

n62. Id. at 572.

n63. Id. at 571.

n64. Id. at 571-72 (citing Thompson v. Oklahoma, 487 U.S. 815, 837 (1987)). The Court also noted that, "to the extent the juvenile death penalty might have residual deterrent effect, it is worth noting that the punishment of life imprisonment without the possibility of parole is itself a severe sanction, particularly for a young person." Id. at 572.

n65. Id. at 569.

n66. See Roper, 543 U.S. at 574.

n67. See Wallis, supra note 17, at 56-58.

n68. See generally Florence S. Antoine, Cooperative Group Evaluating Diagnostic Imaging Techniques, 81 J. Nat'l Cancer Inst. 1347, 1348 (1989).

n69. See Bennett & Baird, supra note 10, at 766; see also Arnett, supra note 10, at 473 ("If adolescence is the period from ages 10 to 18 and emerging adulthood is the period from (roughly) ages 18 to 25, most identity exploration takes place in emerging adulthood rather than adolescence.").

n70. See, e.g., Arnett, supra note 10. Arnett's behavioral research demonstrated changes in romantic relationships, intuition, world views, and risk-taking behavior of adults ages eighteen to twenty-five. See id. at 474, 479.

n71. See Elizabeth R. Sowell et al., In Vivo Evidence for Post-Adolescent Brain Maturation in Frontal and Striatal Regions, 2 Nature Neuroscience 859, 860 (1999); Bennett & Baird, supra note 10, at 4.

n72. Arnett, supra note 10, at 469.

n73. Id.

n74. Id. at 474-75. But see Roper v. Simmons, 543 U.S. 551, 569 (2005) ("It has been noted that "adolescents are overrepresented statistically in virtually every category of reckless behavior.'" (quoting Arnett, supra note 57, at 339)). Therefore, despite Arnett's more recent research regarding postadolescent brain development, the Roper Court focused on Arnett's earlier studies to support its finding that the juvenile death penalty violated the Eighth Amendment.

n75. See Arnett, supra note 10, at 469.

n76. Id. at 477.

n77. Id.

n78. Id. Arnett also found that emerging adulthood "is not a universal period but a period that exists only in cultures that postpone the entry into adult roles and responsibilities until well past the late teens. Thus, emerging adulthood would be most likely to be found in countries that are highly industrialized or postindustrial." Id. at 478.

n79. See Bennett & Baird, supra note 10, at 766.

n80. Id.

n81. Id.

n82. See Bennett & Baird, supra note 10, at 766-67.

n83. See Sarah Spinks, One Reason Teens Respond Differently to the World: Immature Brain Circuitry, http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/ work/onereason.html [hereinafter Spinks, One Reason] (last visited July 24, 2007).

With functional MRIs, researchers can see how the brain actually functions - what parts of the brain use energy when performing certain tasks. They know, for instance, the particular part of the brain that "lights up" when performing a visual task. Those images in which brain activity is measured are called "functional" because they measure how the brain performs tasks rather than simply mapping out the structure of the brain.

See Sarah Spinks, Adolescent Brains Are Works in Progress, http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain/work/adolescent.html [hereinafter Spinks, Adolescent Brains] (last visited July 24, 2007).

n84. Spinks, Adolescent Brains, supra note 83.

n85. Spinks, One Reason, supra note 83. The prefrontal cortex - which is the last part of the brain to mature, see Wallis, supra note 17, at 61 - is located just behind the forehead, and "acts as the "CEO' of the brain, controlling planning, working memory, organization, and modulating mood." Spinks, Adolescent Brains, supra note 83. "In other words, the final part of the brain to grow up is the part capable of deciding, I'll finish my homework and take out the garbage, and then I'll [instant message] my friends about seeing a movie." Wallis, supra note 17, at 59.

n86. Spinks, One Reason, supra note 83.

n87. See id.

n88. Id.

n89. Id.

n90. See id.

n91. Bennett & Baird, supra note 10, at 772; Ferguson, supra note 43, at 455 n.67 (citing Michael S. Gazzaniga et al., Cognitive Neuroscience: The Biology of the Mind 27-28, 41-42 (1998)); Wallis, supra note 17, at 59.

n92. Bennett & Baird, supra note 10, at 772.

n93. Ferguson, supra note 43, at 455 n.67 (citing Gazzaniga et al., supra note 91, at 27-28, 41-42).

n94. See, e.g., Richard P. Bunge, Glial Cells and the Central Myelin Sheath, 48 Physiological Revs. 197, 197 (1968).

n95. See Ferguson, supra note 43, at 455 n.70 ("Myelination results in quicker connections between neurons and it appears that the more effective each neuron, the fewer the neurons that need to be activated for each problem, which in turns appears to conserve energy in more "intelligent' brains." (citing Edward M. Miller, Intelligence and Brain Myelination: A Hypotheses, 17 Personality & Individual Differences 803, 804 (1994)).

n96. See Jay Giedd, Human Brain Growth, 156 Am. J. Psych. 4, 4 (1999).

n97. See, e.g., Elizabeth R. Sowell et al., Mapping Continued Brain Growth and Gray Matter Density Reduction in Dorsal Frontal Cortex: Inverse Relationships During Postadolescent Brain Maturation, 21 J. Neuroscience 8819, 8819 (2001). See generally Nature Publ'g Group,

NPG Web Focus: Neurodegeneration - Glossary, http://www.nature.com/focus/neurodegen/glossary/index.html#n16 (last visited July 24, 2007) ("[Executive function is a] cluster of high-order capacities, which include selective attention, behavioral planning and response inhibition, and the manipulation of information in problem-solving tasks.").

n98. See Bennett & Baird, supra note 10, at 766; see also Wallis, supra note 17, at 59-61.

n99. Wallis, supra note 17, at 59.

n100. Id.

n101. Id.

n102. See Giedd, supra note 96, at 4.

n103. See id.

n104. See Bennett & Baird, supra note 10, at 767.

n105. See Spinks, Adolescent Brains, supra note 83. (suggesting that teenagers' frontal lobes do not functioning fully, which could lead to risk-taking behavior).

n106. Sowell et al., supra note 71, at 859; see also Wallis, supra note 17, at 59.

n107. Sowell et al., supra note 71, at 859; see also Wallis, supra note 17, at 59.

n108. See Wallis, supra note 17, at 59; see also Innovations: Teen Brain, supra note 2.

n109. Juvenile Justice Ctr., ABA, Adolescence, Brain Development and Legal Culpability 2 (2004), http://www.abanet.org/crimjust/juvjus/Adolescence.pdf ("The frontal lobe is "involved in behavioral facets germane to many aspects of criminal culptability ... ." (quoting Ruben C. Gur, Director of the Brain Behavior Laboratory at the University of Pennsylvania)).

n110. Sowell et al., supra note 71, at 859.

n111. Id. at 860.

n112. See id. at 861.

n113. Sara L. Bengtsson et al., Extensive Piano Practicing Has Regionally Specific Effects on White Matter Development, 8 Nature Neuroscience 1148, 1148 (2005).

n114. See id.

n115. Bogdan Draganski et al., Changes in Gray Matter Induced by Training: Newly Honed Juggling Skills Show Up as a Transient Feature on a Brain-Imaging Scan, 427 Nature 311 (2004).

n116. See id. at 311. "Group comparison at the beginning ... showed no significant regional differences in grey matter between jugglers and non-jugglers." Id.

n117. See id.

n118. Id.

n119. " One important role of the hippocampus is to facilitate spatial memory in the form of navigation." Eleanor A. Maguire et al., Navigation-Related Structural Change in the Hippocampi of London Taxi Drivers, 97 PNAS 4398, 4398 (2000). The hippocampus is likely vital to storage within the brain and the use of mental maps. Id. at 4402.

n120. See id. at 4398.

n121. Id. at 4399.

n122. Id. at 4402.

n123. Id.

n124. Id.

n125. See Bennett & Baird, supra note 10, at 776.

n126. See id. at 767.

n127. See id. at 774-75.

n128. Id. at 767.

n129. Id. at 770-72. "Such changes have been observed structurally as increases in both gray matter volume and white matter integrity." Id. at 775 (citations omitted); see also Maguire et al., supra note 119, at 4399.

n130. See Bennett & Baird, supra note 10, at 775. The researchers noted that previous studies had linked brains which were "unresponsive to large environmental shifts" to schizophrenia, bipolarity, and depression - disorders common in emerging adults. See id.

n131. Id.

n132. Id. But see Frontline with Sarah Spinks, Inside the Teen Brain: Adolescent Brains Are Works in Progress, http://www.pbs.org/wgbh/pages/frontline/ shows/teenbrain/work/adolescent.html ("Moving from structure to function, and deciding what behavior is caused by what part of the brain is much more complicated."). The researchers also noted the limitations to their research, such as the "relatively small sample size" and the fact that "first-year students at an Ivy League College are certainly not representative of all [emerging] adults." See Bennett & Baird, supra note 10, at 775.

n133. See generally Terrence P. Thornberry, Explaining Multiple Patterns of Offending Across the Life Course and Across Generations, 602 Annals Am. Acad. Pol. & Soc. Sci. 156, 166-72 (2005) (discussing an "interactional" theory of offending based on four developmental stages, but only briefly discussing emerging-adult offenders).

n134. Arnett, supra note 10, at 474-75.

n135. See infra Part IV.B.

n136. Randi-Lynn Smallheer, Note, Sentence Blending and the Promise of Rehabilitation: Bringing the Juvenile Justice System Full Circle, 28 Hofstra L. Rev. 259, 265 (1999).

n137. Id. at 264 (citing Jennifer M. O'Connor & Lucinda K. Treat, Note, Getting Smart About Getting Tough: Juvenile Justice and the Possibility of Progressive Reform, 33 Am. Crim. L. Rev. 1299, 1303 (1996)).

n138. Id.

n139. Id.

n140. Id.; see also Chauncy E. Brummer, Extended Juvenile Jurisdiction: The Best of Both Worlds?, 54 Ark. L. Rev. 777, 783 (2002).

n141. Brummer, supra note 140, at 783 (quoting Marygold S. Melli, Juvenile Justice Reform in Context, 1996 Wis. L. Rev. 375, 380).

n142. 1.See id. at 782-83; see also Wis. Council on Children & Families, supra note 19.

n143. See Brummer, supra note 140, at 783. "Juries, lawyers, and formal procedural rules were intentionally not a part of juvenile court." Id. at 784.

n144. Arrests for juvenile crime quadrupled between 1965 and 1990. See Smallheer, supra note 136, at 270 (citing Richard E. Redding, Juveniles Transferred to Criminal Court: Legal Reform Proposals Based on Social Science Research, 1997 Utah L. Rev. 709, 762). Additionally, the juvenile-arrest rate for commission of violent crimes increased twice as fast between 1987 and 1991 as the rate for adults. See id. (citing Hunter Hurst III, Crime Scene: Treating Juveniles as Adults, Trial, July 1997, at 34, 35).

n145. See id. at 270-75.

n146. See id. at 272-74.

n147. Id. at 273.

n148. Brummer, supra note 140, at 788.

n149. See Wis. Council on Children & Families, supra note 19, at 17-18.

n150. See Brummer, supra note 140, at 778.

n151. Id.; see also Greg Jones & Michael Connelly, Md. State Comm'n on Criminal Sentencing, Update on Blended Sentences (2001), http://www.msccsp.org/publications/blended.html. There are two other types of blended sentences: (1) "Juvenile-Exclusive Blend," in which the juvenile court either gives a juvenile or an adult sentence; (2) "Juvenile-Inclusive Blend," in which the juvenile court assigns both sanctions on the individual, but usually suspends the adult sentence upon fulfillment of the juvenile sentence. Id.

n152. Brummer, supra note 140, at 778-79.

n153. Jones & Connelly, supra note 151.

n154. Id.

n155. Id.

n156. Chauncy Brummer, Extended Juvenile Jurisdiction: The Best of Both Worlds?, 54 Ark. L. Rev. 777, 792 (2002).

n157. See Howard K. Snyder & Melissa Sickmund, Nat'l Ctr. for Juvenile Justice, Juvenile Offenders and Victims: 2006 National Report 103 (2006), http://ojjdp.ncjrs.org/ojstatbb/nr2006/downloads/NR2006.pdf. As of 2006, juvenile authority over individuals extended to age nineteen in Mississippi and North Dakota; twenty in thirty-four states and the District of Columbia; twenty-one in Florida; twenty-two in Kansas; and twenty-four in California, Montana, Oregon, and Wisconsin. See id. Additionally, Colorado, Hawaii, and New Jersey use EJJ until the dispositional order is fulfilled. See id. Wisconsin recently changed its EJJ maximum age to twenty-five for serious juvenile offenders. Nat'l Ctr. for Juvenile Justice, State Juvenile Justice Profiles: Wisconsin, http://www.ncjj.org/stateprofiles/profiles/WI06.asp?state=%2Fstateprofiles%2Fprofiles%2FWI06.asp&topic =.

n158. Brummer, supra note 140, at 796.

n159. See, e.g., Ohio Criminal Sentencing Comm'n, A Plan for Juvenile Sentencing in Ohio 36 (1999), http://www.sconet.state.oh.us/Sentencing Commission/publications/juvenile sentencing.pdf ("To maximize rehabilitation opportunities, while protecting the public, the Commission proposes extending the juvenile court's jurisdiction for some offenses until the offender reaches age 25.").

n160. See generally Brummer, supra note 140.

n161. See, e.g., Wis. Council on Children & Families, supra note 19, at 17.

n162. Id.

n163. See id. at 17 chart a.

n164. See id.

n165. Id. at 17-18.

n166. Id. at 18.

n167. See generally Michael Tonry, Reconsidering Indeterminate Structured Sentencing, Sentencing & Corrections: Issues for the 21st Century, Sept. 1999, at 1, 6, available at http://www.ncjrs.gov/pdffiles1/nij/175722.pdf. There is, however, no standard approach in every state. Id. at 1.

n168. See id. at 1.

n169. Id.

n170. Id. at 4.

n171. Id.

n172. See id. at 1.

n173. Id. at 6.

n174. See id. at 8.

n175. Id.

n176. Mary Zahn & Gina Barton, Locked In, Milwaukee J. Sentinel, Nov. 21, 2004, at A1.

n177. See Wis. Stat.§§302.11(1z), 302.113, 304.06(1)(b), 973.02 (2005-06).

n178. See Zahn & Barton, supra note 176.

n179. See id.

n180. Id.

n181. See Sarah B. Miller, California Prison Boom Ends, Signaling a Shift in Priorities, Christian Sci. Monitor, June 20, 2005, at 3.

n182. Id.

n183. Id.

n184. Rex W. Huppke, Record Numbers of Ex-Cons Return to Illinois Streets, Chi. Trib., June 19, 2005, at C1.

n185. Id.

n186. See id.

n187. Id.

n188. Miller, supra note 181.

n189. Huppke, supra note 184.

n190. Reginald A. Wilkinson, Offender Reentry: A Storm Overdue, 5 Corrections Mgmt. Q. 46, 49-50 (2001).

n191. Id. at 50.

n192. H.R. 1704, 109th Cong. (2005). The Act has recently been reintroduced and passed by the House Judiciary Committee, and is currently awaiting approval by the full House. See Re-Entry Policy Council, Second Chance Act of 2007, http://www.reentrypolicy.org/reentry/Second Chance Act of 2005. aspx (last visited July 24, 2007); Second Chance Act of 2007, H.R. 1593, 110th Cong.

n193. See H.R. 1593 § 101(h).

n194. See id. §§111-116.

n195. Caroline Wolf Harlow, Bureau of Justice Statistics, Dep't of Justice, Education and Correctional Populations 2 (2003), http://www.ojp.usdoj.gov/bjs/pub/pdf/ecp.pdf.

n196. Id. at 4 tbl.3.

n197. Id. at 7.

n198. See, e.g., Wis. Council on Children & Families, supra note 19, at 18.

n199. Id.

n200. See Wash. State Dep't of Corrections, Clallam Bay Corrections Center, http://www.doc.wa.gov/facilities/cbccdescription.htm (last visited June 12, 2007).

n201. See Press Release, Dep't of Health & Human Servs., HHS Awards $ 16.2 Million for Methamphetamine Abuse Treatment (Aug. 18, 2005), http://www.hhs.gov/news/press/2005pres/20050818.html.

n202. See Press Release, Substance Abuse & Mental Health Servs. Admin., Dept. of Health & Human Servs., States Awarded Federal Grants to Fund Anti-Drug Programs (Sept. 22, 2003), http://www.samhsa.gov/news/newsreleases/ 030922nr twosigs.htm.

n203. See Wis. Council on Children & Families, supra note 19, at 18.

n204. Id.

n205. See supra Part II.B.

n206. See, e.g., Bennett & Baird, supra note 10; Arnett, supra note 10; Sowell et al., supra note 97; Bengtsson et al., supra note 113; Draganski et al., supra note 115.

n207. Harlow, supra note 195, at 7.

n208. See, e.g., Arnett, supra note 10, at 474-75.

n209. See, e.g., Innovations: Teen Brain, supra note 2.

n210. See generally Bennett & Baird, supra note 10.

n211. See, e.g., Wash. State Dep't of Corrections, supra note 200.

n212. See, e.g., Press Release, Dept. of Health & Human Servs., supra note 202.

n213. See Miller, supra note 181.

n214. See id.

n215. See Wis. Council on Children & Families, supra note 19, at 17. By contrast, the purpose of the adult system is "to prevent delinquency and crime by an attack on their causes; to provide a just, humane and efficient program of rehabilitation of offenders." See Wis. Stat. § 301.001 (2005-06).

n216. See Wis. Council on Children & Families, supra note 19, at 17-18.

n217. Id. at 18.

n218. See generally id.

n219. Id. at 17-18 (noting that juvenile detainees in Wisconsin are required to attend classes and receive counseling or therapy).

n220. See id. at 18-19.

n221. See generally Arnett, supra note 10.

n222. See Wis. Council on Children & Families, supra note 19, at 18.

n223. Id.

n224. Id.

n225. Thornberry, supra note 133, at 166-72.

n226. See, e.g., Spinks, Adolescent Brains, supra note 83.

n227. See id.;see also Bennett & Baird, supra note 10.