WHAT’S IN AN AGE? CONSIDER THE NEUROSCIENCE DIMENSION OF JUVENILE LAW

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I. INTRODUCTION

Implementing an interdisciplinary approach of science and law, the Supreme Court abolished the death penalty sentence upon juvenile offenders in the seminal case, *Roper v. Simmons*.\(^1\) The Court drew upon findings in brain science,\(^2\) and continued to do so in holding that life-without-parole sentences for certain types of crimes cannot be imposed upon juvenile offenders in subsequent cases.\(^3\) In deciding that such punishments violate the Cruel and Unusual Punishments Clause of the Eighth Amendment,\(^4\) the Court relied upon the “evolving standards of decency that mark the progress of a maturing society.”\(^5\)

What distinguished the inquiry in the trilogy, *Roper, Graham, and Miller*, was its dependence on our growing knowledge of and appreciation for inherent differences between adults and adolescents in the last ten years.\(^6\) “[T]he relevance of youth as a mitigating factor” the Court reasoned, “derives from the fact that the signature qualities of youth are transient; as individuals mature, the impetuousness and recklessness that may dominate in younger years can subside.”\(^7\) In recognition of this fact, and because juveniles are consequently “more vulnerable or susceptible to negative influences and outside pressures” than adults,\(^8\) the Court in *Roper* noted that “[o]ur history is replete with laws and judicial recognition that minors, especially in their earlier years, generally are less mature and responsible than adults[.]”\(^9\) What has changed is the differences between

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1 See *Roper v. Simmons*, 543 U.S. 551 (2005) (barring the imposition of the death penalty for crimes committed when the offender is under eighteen, also referred to as “juvenile offenders”).

2 *Roper*, 543 U.S. at 617–19.


4 U.S. CONST. amend. VIII

5 *Miller*, 132 S. Ct. at 2463; *Graham*, 560 U.S. at 58; *Roper*, 543 U.S. at 561.

6 *Miller*, 132 S. Ct. at 2464; *Graham*, 560 U.S. at 68; *Roper*, 543 U.S. at 569.

7 *Roper*, 543 U.S. at 570 (quoting *Johnson v. Texas*, 509 U.S. 350, 368 (1993)).

8 *Id. at 569* (citing *Eddings v. Oklahoma*, 455 U.S. 104, 115–16 (1982)).

9 *Id. at 599*. 

167
juvenile and adult offenders has been substantiated in recent years by a growing body of research concerning physiological differences in the brain.

The landmark cases sparked ample reflection and speculation on the changing scope of juvenile law. I seek to add to this conversation by delving into the growing scholarship in neuroscience and weaving this knowledge to propose changes in juvenile law. Section II of the paper will set forth the legal standard and relevant case history. Next, section III will isolate and describe the key anatomical brain structures that played a role in the Supreme Court analysis. Lastly, section IV will recommend how an interdisciplinary analysis can be used to implement an effective treatment for juvenile offenders within the criminal justice system. In particular, I shall argue that these developments provide strong support for the application of a “reasonable juvenile” standard in assessing juvenile offenders culpability whenever tried as adults.

II. THE EVOLVED STANDARDS OF DECENCY IN JUVENILE JURISPRUDENCE

The seemingly straightforward Eighth Amendment ban invoked in the trilogy of cases, dictating that cruel and unusual punishments shall not be inflicted, is actually a nuanced assessment. This section will examine what encompasses these gradations in the ultimate determination of which punishments are prohibited under the ban.

According to the Eighth Amendment precept of justice, what is so disproportionate as to be cruel and unusual is ascertained through the evolving standards of decency that mark the progress of a maturing society. This is assessed through two prongs. The first one considers “objective indicia of society’s standards, as expressed in legislative enactments and state practice” to determine the national consensus on the sentencing at issue. The second is the subjective prong, under which precedent, along with the interpretation of the Eighth Amendment text, history, and purpose, guide the Court to determine whether standards of decency have evolved. In Roper, Graham, and Miller, the analysis of the subjective prong integrated scientific and sociological findings to establish that standards have, in fact, evolved.

In the landmark case Roper, the Supreme Court first recognized how radical “brain science” findings show significant differences between

11 U.S. CONST. amend. VIII.
12 See Miller, 132 S. Ct. at 2463; Graham v. Florida, 560 U.S. at 58; Roper v. Simmons, 543 U.S. at 561.
13 Miller, 132 S. Ct. at 2463; Graham v. Florida, 560 U.S. at 48, 61; Roper, 543 U.S. at 563.
14 Miller, 132 S. Ct. at 2470; Graham, 560 U.S. at 48; Roper, 543 U.S. at 563. The discussion of the objective prong is beyond the scope of this paper.
15 Miller, 132 S. Ct. at 2463; Graham, 560 U.S. at 61; Roper, 543 U.S. at 563.
16 Id.
juveniles and their adult counterparts. The offender in that case was seventeen at the time he committed the murder; he was tried as an adult and sentenced to the death penalty by the lower court. In exercising its judgment, the Court ascertained that standards had significantly evolved over the fifteen years to establish a categorical bar of the death penalty sentence for all juvenile offenders. Developments from this time frame revealed adolescents have: (1) a lack of maturity and an underdeveloped sense of responsibility, (2) an increased vulnerability or susceptibility to negative influences and outside pressures, and (3) a more transitory character. These three characteristics distinguished a lower culpability and greater capability of reform in juvenile offenders, in contrast to adult offenders. Based upon this analysis of the subjective prong, the Court held the death penalty to be a disproportionate punishment and therefore unconstitutional under the Eighth Amendment.

On the heels of Roper, the Supreme Court took another step in this direction in expanding categorical bars beyond the death penalty. In Graham v. Florida, the Court barred life in prison without possibility of parole sentences for non-homicide crimes committed by juvenile offenders. The criminal was sixteen when he committed the non-homicide crimes of armed burglary and armed robbery. His childhood was marked with crack-addled parents who persistently used drugs in his early years. He began abusing alcohol and marijuana at an early age. Upon committing the crimes of burglary and robbery, he was initially sentenced to probation within the state’s sentencing scheme. Subsequently, at seventeen, he violated the terms of this probation in committing additional crimes, and the lower court sentenced him to life in prison with no possibility for parole.

However, the Supreme Court found differently in consideration that the severity of a life sentence without parole as only a close second to the death penalty. Given the proximity of the two most serious forms of punishment, there was no “reason to reconsider the [Court’s] observations in Roper about the nature of juveniles.” The discoveries from brain science again continued to provide support for a juvenile’s distinguishing characteristics of lack of maturity, increased vulnerability, and transitory character traits, and such a sentence would fall outside the standards of

17 Roper, 543 U.S. at 568–69.
18 Id. at 556–57.
19 Id. at 568.
20 Id. at 569–70.
21 Id. at 570.
22 Id. at 571.
23 Graham, 560 U.S. at 74.
24 Id. at 53.
25 Id.
26 Id.
27 Id. at 54.
28 Id. at 54–56.
29 Id. at 69.
30 Id. at 68.
decency. Based off this interdisciplinary analysis confluence, the lessened culpability and greater capacity for reform again influenced the Graham Court’s holding that life-without-parole sentences for non-homicide crimes were disproportionate, and therefore, cruel and unusual punishment upon juvenile offenders. Under the Court’s contention, findings of the adolescent physiology defined basic mores of society. These basic mores were evolving so much that one could no longer equate the failings of a minor with those of an adult.

The influence of science on the legal consciousness was once again seen in the last of the trilogy of cases; a corollary of the Roper and Graham line of reasoning, Miller reached two critical conclusions in defining the new juvenile jurisprudence. While the Graham Court’s ban on life-without-parole sentences was limited to non-homicide crimes, the Miller Court extended this holding, declaring mandatory life-without-parole upon juvenile offenders for a homicide crime as unconstitutional.

Roper and Graham described the inherent features of the biological makeup of youth, leading to juveniles having lesser culpability and greater capacity for change. In recognition of these inherent features, the Court in Miller noted how a mandatory life sentence by its very nature precludes a sentencer from taking into account characteristics of age and youth. This could only be adequately sufficed with an independent sentencing scheme.

In particular, the offender in Miller was considered exemplary of the shortcomings in imposing a mandatory sentencing scheme. The defendant had been in foster care and had tried to commit suicide four times—the first time at the age of six. He grew up in an abusive environment, with his mother abusing drugs and alcohol. At the age of the fourteen, he had set fire to a trailer, and an adult within subsequently died from smoke inhalation. Given the crime, he was tried as an adult for murder in the course of arson; in the state statute, this was a crime that carried compulsory minimum punishment of life-without-parole. The Court found that the juvenile’s prior conduct simply could not be overlooked in sentencing the mandatory life-without-parole sentence. Miller’s holding was critical in building upon Roper and Graham, and additionally, upon the premise that criminal procedures failing to take youthfulness into account

31 Id.
32 Id. at 74.
33 Id. at 68.
34 Id. at 58 (citing Kennedy v. Louisiana, 554 U.S. 407, 419 (2008)).
35 Miller, 132 S. Ct. at 2463.
36 Id. at 2460.
37 Graham, 560 U.S. at 67; Roper, 543 U.S. at 569.
38 Miller, 132 S. Ct. at 2468.
39 Id.
40 Id. at 2462.
41 Id.
42 Id.
43 Id. at 2462–63.
44 See id. at 2465.
at all are necessarily flawed. This was exemplified with an obligatory punishment precluding all individualized consideration in sentencing when the circumstances—such as with the juvenile in Miller—suggested it.

III. THE IMPACT OF COGNITIVE NEUROSCIENCE IN LEGAL CONSCIOUSNESS

In establishing categorical bans on the death penalty, the Supreme Court incorporated findings presented by the American Medical Association (AMA) and American Psychological Association (APA) to conclude three significant differences in juveniles: (1) a lack of maturity and an underdeveloped sense of responsibility, (2) increased vulnerability to negative influences, and (3) transitory personality traits or characters that are not as well-formed.

With science showing how “parts of the brain involved in behavior control continue to mature through late adolescence[,]” the neurological findings that lead to these differences in adolescents as opposed to their adult counterparts can be used to reach better policy interventions for juveniles in adult criminal court. This section will detail the structural makeup that results in the distinctive adolescent traits enunciated in the trilogy of cases.

There is a growing body of research in cognitive neuroscience directly speaking to the Court’s reliance on these findings. Based on unprecedented access to the magnetic resonance imaging (MRI) technique, scientists are mapping the developmental journey of the brain. Scientists have compiled nuanced distinctions in the brain using a structural MRI technique that measures the size and shape of structures, as well as a functional MRI that shows patterns of brain activity.

45 Id. at 2468.
46 Id.
47 See Miller, 132 S. Ct. at 2468; Graham, 560 U.S. at 68 (citing Brief for AMA et al. as Amici Curiae pp. 16–24; Brief for APA et al. as Amici Curiae pp. 22–27); Roper, 543 U.S. at 569 (citing Laurence Steinberg & Elizabeth S. Scott, Less Guilty by Reason of Adolescence: Developmental Immaturity, Diminished Responsibility, and the Juvenile Death Penalty, 58 AM. PSYCHOL. 1009, 1014 (2003)).
48 Graham, 560 U.S. at 68.
these techniques allows them to understand previously unfathomable structural functions; for example, evidence of delayed maturation in certain brain structures (such as the prefrontal cortex to be discussed) is gathered based off converging evidence from electrophysiological and cerebral glucose-metabolism studies. 53 Such a detailed map of the growing brain effectively ushered in a new era of adolescent neuroscience with ensuing developments in disciplines such as the law.

The scientific revelations of the recent decades blatantly reject previously held beliefs that the teenage brain is analogous to an adult brain with ‘fewer miles’ on it. 54 MRI scans show how, similar to genitalia that undergoes a developmental curve of biological and physical changes starting in the teen years and extending to twenty-one years of age, the brain has a similar development curve with a timeline starting around the early teenage years and extending well into the twenties. 55 These images reveal distinctions in specific areas of the brain during this span of physiological development. 56 The structures most significant to this discussion include the prefrontal cortex, the basal ganglia, and the amygdala.

The prefrontal cortex is the front region of the frontal lobe and is often referred to as the “CEO of the brain.” 57 This area controls the executive functions of response inhibition, emotional regulation, planning and organization. 58 More specifically, it regulates foreseeing possible consequences of behaviour, weighing risks, modulating and inhibiting impulses, and strategizing. 59

The frontal, temporal, parietal, and occipital lobe comprise the four lobes of the brain. 60 The development of these lobes follows a general pattern: the regions serving primary functions mature earliest while higher-order association areas integrating primary functions mature later. 61 For example, the temporal lobe functions, involved in auditory and language processing, as well as those of the parietal lobe, involved in spatial relations and sensory processing, are fully matured by adolescence. 62 However, the frontal lobe is one of the last areas to mature; it still undergoes development during the teen years. 63 Since the frontal maturation progresses in a back-to-front direction, beginning in the primary motor cortex and spreading to the anterior, the prefrontal cortex develops last and does not reach full maturation until the twenties. 64 Because the

53 Casey & Jones, supra note 50, at 1190.
55 Casey & Jones, supra note 50, at 1190.
56 Id.
57 Id.
58 Sowell, supra note 50, at 860.
59 Id.
60 Id.
61 Id.
62 Id.
63 Id.
64 Id.
What's in an Age?

prefront cortex develops later, the physiological functions associated with it, such as inhibiting impulses, foreseeing consequences, and undertaking long-term decisions, mature later in parallel. Specifically, the progression of prefrontal cortex development is congruous with the lack of maturity and increased vulnerability to negative influences noted in adolescents in the case law.

The modulation of these specific prefrontal cortex functions during this time is further influenced by myelination, the process through which neurons in the brain transmit information over long distances with electrical impulses. Myelination occurs when a specific type of cell wraps neuronal axons in a fatty sheath, speeding up transmission between neurons; this speed can be up to a hundred times the speed of unmyelinated neurons. The process of myelination, previously unknown, has been confirmed in recent years with MRI scans that use three-dimensional digital filtering and assess each image through semi-automated tissue segmentation. On these scans, white matter indicates myelinated axons while grey matter indicates unmyelinated; an important distinction deduced in functional MRI imaging since the white and grey matter show up with different signal strength.

Based upon this knowledge, a crucial interaction between myelination and the prefrontal cortex was further ascertained. Compilation of the two interactions corroborates the salient juvenile characteristics of lack of maturity, underdeveloped sense of responsibility, and transitory personality traits. While the process of myelination begins early in life and continues into adulthood, the production of myelin escalates at a high point during adolescence. However, the greater myelin production is simultaneously unencumbered by an underdeveloped prefrontal cortex during this phase of development. This increasing input of neuronal connections unhampered by the underdeveloped prefrontal cortex results in the heightened emotional angst, energy, and risky behaviour characterized in the adolescent time period. This is further validated with the contrasting results in adulthood; when the myelination is working in conjunction with the matured cortex, there is an increase control on behavioural functions, such as problem solving, modulating emotional reactivity, and curbing reward response.

Another brain structure significant during this development is the amygdala, a tiny structure located deep in the middle brain. It is the
emotional center of the brain, home to primal feelings of fear and rage.\textsuperscript{77} The lack of modulation in the amygdala during adolescence plays a key role in an adolescent’s increased vulnerability to negative influences.\textsuperscript{78} Visual scans have established that while teens rely mostly on use of the amygdala—the region that guides instinctual or “gut” reactions—adults rely on the frontal cortex, which governs reason and planning.\textsuperscript{79}

These imaging scans reveal neurological differences between adults and juveniles—specifically, the inability to realize complex emotions, impulsivity, and lack of forethought.\textsuperscript{80} This difference in emotional response and inability to realize nuanced emotions reflects why adolescents are so much more influenced by negative stimulation and outside pressures, including peer pressure.\textsuperscript{81} Experiments similarly show that when responding to an emotional event, juveniles draw primarily upon the amygdala, while adults mostly use the prefrontal.\textsuperscript{82} Greater amygdala activity is postulated to lead to an increased emotional response to social stimuli.\textsuperscript{83} This evidence further establishes that the adolescent brain processes reward stimuli differently than adults.\textsuperscript{84}

The final important brain structure crucial to this psychological developmental period of adolescence is the basal ganglia.\textsuperscript{85} Functional MRI imagery shows how a specific portion of the basal ganglia, the accumbens, undergoes structural volume and increased myelination during this time; the enhancement in accumbens activity results in the increased impulsive and risky behaviours characteristic of this phase of life.\textsuperscript{86} This development is integral to the hallmark traits of immaturity and underdeveloped sense of responsibility.\textsuperscript{87}

Studies focusing on the processing of reward seeking in adolescents show that the accumbens is directly related to increases in reward-related activities.\textsuperscript{88} Surprisingly, relative to not only adults—but also children—adolescents show an exaggerated response in anticipation of reward.\textsuperscript{89} This leads to a strong correlation with risk-taking behaviors, behaviors that are further exaggerated with the accumbens working in conjunction with a less mature prefrontal cortex.\textsuperscript{90} The combination of heightened responsiveness to rewards and underdeveloped behavioral control bias these young adults

\begin{thebibliography}{1}
\item Id.
\item \textbf{Sarah Spinks, One Reason Teens Respond Differently to the World: Immature Brain Circuitry, PBS FRONTLINE}.
\item Id.
\item See id. at 11.
\item Id. supra note 76, at 12.
\item Id.
\item Id. supra note 78.
\item See id.
\item Id.
\item \textbf{BIOLOGY OF ADOLESCENCE}, supra note 76, at 8.
\item Id.
\item Id.
\item \textbf{Casey & Jones, supra note 50}, at 112–114.
\item Id.
\item Id.
\end{thebibliography}
to seek immediate rather than long-term gains. This also reflects why a lower sense of responsibility and lack of maturity is a hallmark characteristic in juveniles.

Compiling this information paints a detailed picture of the significant anatomical differences in juveniles and the influence on their psychological behavior. This comprehensive understanding of the interplay between the prefrontal cortex, the amygdala, and the accumbens during development from adolescence to adulthood is critical to knowing why, on a fundamental, biological level, the method of risk assessment, moral reasoning, impulse control, and emotional processing is physiologically different. Based on this established emerging evidence, the longstanding assumption that the brain development is largely finished by puberty is rejected. Arguments against this view posit that there is not enough evidence supporting such assertions that juvenile brain development is a mitigating factor in punishment. The opposition claims such views are tenuous inferences born out of a social policy position and not supported by relevant, admissible evidence. Further, it is asserted this will lead to a slippery slope of presenting individualized MRI scans as evidence in cases. However, as discussed, scientific evidence proving otherwise has culminated through years of meticulous research and experiments. The opposition overlooks that Supreme Court decisions recognized a build-up of science and social influences that are not premised on tenuous inferences. Furthermore, the Court's language did not refer to individual characteristics, but rather specifically made note of the "general" differences between juveniles and adults. For example, the Court's use of language such as "lack of maturity . . . found in youth more often than in adults . . ." and "qualities [that] often result in impetuous and ill-considered actions and decisions," allude to general uniform differences in juveniles—note how "more" and "often" are general quantitative terms. This suggests a blanket characterization crucial of the biological and physiological interrelation at this stage of development.

Incorporation of this ample breadth of knowledge now available with the advent of MRI scans shows why these three characteristics are so

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91 Id.
92 See generally id.; Spinks, supra note 78; BIOLOGY OF ADOLESCENCE, supra note 76, at 8–12.
95 Id.
96 Id.
97 See Miller,132 S. Ct. at 2463; Graham, 560 U.S. at 68; Roper, 543 U.S. at 569 (2005).
98 Roper, 543 U.S. at 569.
99 Id. (internal quotes omitted) (emphasis added).
100 Id.
definitive during adolescence. The analysis of the trilogy of cases incorporated with the burgeoning neuroscience field provides a strong foundation to influence the direction of the new juvenile jurisprudence. The Supreme Court’s landmark decisions in juvenile law allow for an essential change in the legal consciousness to build towards comprehensive juvenile policies.

IV. PROPOSING THE “REASONABLE JUVENILE” STANDARD

The characteristics of youth were used to establish categorical bars upon the two most severe punishments, the death penalty and life-without-parole, and yet “none of what it said about children . . . is crime-specific.” This can be used towards creating a more effective legal system in broader aspects of juvenile law. I will specifically focus on juvenile offenders tried in the adult criminal courts. I propose implementing a “reasonable juvenile” standard for juveniles tried as adults—a legal term of art reflecting the lower culpability and greater level of reform by integrating the characteristics biologically inherent in a juvenile’s physiological makeup.

This section first lays out the historical backdrop of the evolution of the juvenile court in the legal system. It then focuses on the current state of the system and hones in on the shortcomings of the procedures in place for juveniles tried as adults. I propose policies to assess culpability based on the “reasonable juvenile” that could implement a more effective legal process for juvenile offenders tried as adults.

V. JUVENILE LAW IS ITS OWN NICHE

Until nearly a century ago, juveniles were seen as miniature adults and tried and punished as adults. The deficiencies of such a system began to be addressed in the nineteenth century with progress in social services; social reformers sought the advent of dedicated facilities for juvenile offenders to separate them from their adult counterparts. Two such examples are the New York House of Refuge, created in 1825, and the Chicago Reform School, established in 1855. In 1899, juvenile court, as a separate niche of the legal system, was officially created in Illinois. Other states were quick to follow suit, and over the next 25 years, most states had set up juvenile court systems.

The driving force of this inception was with a focus that “the child . . . brought into the court should . . . be made to feel that he is the object of

101 Miller, 132 S. Ct. at 2465.
103 Id. at 5.
104 Id.
105 Id.
106 Id.
What’s in an Age?

The court’s care and solicitude. The ordinary trappings of the courtroom [would be] out of place in such hearings.” Accordingly, the framework of the court was tailored to a juvenile’s distinct needs, as can be seen in the legalese constructed to be less severe and stigmatizing when dealing with vulnerable adolescents compared to their adult counterparts. Juvenile offenders are “detained” and not “arrested;” have an “adjudicatory hearing” instead of a “trial;” and are found “delinquent” as opposed to “convicted.” Additionally, among the traditional rationales that serve as the penological justifications in sentencing and policy-making for adult offenders—incapacitation, retribution, deterrence, and rehabilitation—rehabilitation has been promulgated as the primary goal for punishing juvenile offenders. As stated by the Model Penal Code, rehabilitation and reintegration into the community were to be given priority in sentencing offenders under the age of eighteen. In the mid-1960’s, the Supreme Court established procedural due process in juvenile court proceedings to ensure these standards were in comport with constitutional standards.

However, the early 1990s saw five juveniles accused for a series of violent crimes; the highly publicized heinous crimes sparked coinage of the fearful concept of “superpredators.” Several prominent criminologists issued predictions of a wave of brutally remorseless youth killers to be reflected in a three-fold increase of juvenile offenders. Not only were the offenders later exonerated for these crimes, the unsubstantiated estimation predicting “270,000 more young predators on the streets than in 1990” never materialized; unfortunately, the damage caused by the sweeping panic already took seed.

This panic led almost every state between 1992 and 1999 to expand transfer laws—the mechanism by which children are removed from juvenile courts into adult prosecution for purposes of sentencing and punishing. Transfer laws premise that juveniles should be treated as adult offenders for certain crimes. There are several types of transfer law

107 Id. (citing Judge Julian Mack, The Juvenile Court, 23 HARV. L. REV. 104 (1909)).
108 See id.
111 Id.; Roper, 543 U.S. at 571 (citing Atkins v. Virginia, 536 U.S. 304, 319 (2002)).
112 In re Gault, 387 U.S. 1 (1967).
114 Superpredator Myth, supra note 113.
115 Id.
116 Id.
117 See Pizarro, supra note 113, at 85.
mechanisms, the three most prominent being: (1) statutory exclusion, (2) prosecutorial discretion, and (3) judicial waivers.\textsuperscript{118}

Statutory exclusions automatically grant criminal courts exclusive jurisdiction over certain types of cases involving offenders of juvenile age as delineated by the state.\textsuperscript{119} For example, a juvenile of age 15 who commits burglary would be automatically transferred to adult criminal court; the case would be originating in adult court.\textsuperscript{120} If the case falls within a statutory exclusion category, it is filed in criminal court.\textsuperscript{121}

Prosecutorial discretion is the type of waiver that gives prosecutors complete authority to file the case in juvenile court or adult criminal court.\textsuperscript{122} Specifically, the prosecutor has complete discretion to undertake such a transfer when certain factors such as age and type of crime are met.\textsuperscript{123}

The third type is judicial waiver, the only type of transfer mechanism that allows juvenile court judges the discretion to waive jurisdiction on a case-by-case basis.\textsuperscript{124} It is originally filed in criminal court, and contingent upon the judge’s approval based on a formal hearing of all the individual circumstances, the judge can waive transfer into adult court.\textsuperscript{125} This mechanism is unique in integrating consideration of the juvenile’s background.\textsuperscript{126}

Legislators revised laws to lower thresholds and broadened eligibility for transfer laws replacing individualized discretion with automatic, categorical transfers.\textsuperscript{127} According to the Council of Juvenile Correctional Administrators (“CJCA”), the expansion of eligibility criteria for the waiver and transfer of youths “resulted in the placement of hundreds of youths into adult penal facilities without adequate treatment services.”\textsuperscript{128}

The “superpredator myth” ultimately proved an empty myth that was grossly faulty; rather, the juvenile violent crime rate started to fall in the 1990s with homicide crime rate stabilizing well below the 1985 level rates.

\begin{footnotes}
119 GRIFFIN ET AL., supra note 118, at 2.
120 See id.
121 Id.; 42 PA. CONS. STAT. AND CONS. STAT. ANN. § 6302 (West 2016). In Pennsylvania, the following offenses are automatically excluded from juvenile court if committed by a juvenile: (1) murder, (2) certain enumerated felonies committed by a juvenile fifteen years of age or older involving the use of a deadly weapon, (3) selected repeat offenses, (4) certain enumerated felonies committed by a juvenile fifteen years of age or older who has previously been found guilty of certain felonies, and (5) summary offenses.
122 GRIFFIN ET AL., supra note 118, at 2; CONSEQUENCES AREN’T MINOR, supra note 118, at 5.
123 GRIFFIN ET AL., supra note 118, at 2.
124 Id.
125 Id.
126 See id.
127 Id.
128 CONSEQUENCES AREN’T MINOR, supra note 118, at 9 (citing Policy Statement, Council of Juvenile Correctional Administrators (2007)).
\end{footnotes}
in 2000. In fact, the very criminologists that propagated predictions of a forthcoming wave of superpredators in the 1990s submitted an amicus brief in \textit{Miller} arguing for the categorical ban of mandatory life-without-parole sentences upon juveniles precisely because of the unconstitutional nature of such a sentencing schema. Nonetheless, the propaganda had already set into gear the “lowering of the minimum age for adult prosecution of children, and it threw thousands of children into an ill-suited and excessive punishment regime.” As a result, the concept of a separate arena for juvenile offenders eroded with the superpredator era. With the propelled transfer legislation, currently every year an estimated two hundred thousand youth are being prosecuted, sentenced, or incarcerated as adults across the U.S. Nearly ten thousand children are housed in adult jails with children as young as ten exposed to adult prosecution in the U.S. This exponential increase of juvenile offenders with the adult courts from broadened transfer laws spearheads my proposal for the effectuation of the reasonable juvenile in three different policies.

These seminal cases of the last decade bolster the importance of these inherent youthful qualities back into centre-stage. In addition to the trilogy of cases on the Eighth Amendment, factoring youth as a determinative concept has also been solidified under the Fourth Amendment. In \textit{J.D.B. v. North Carolina}, the Supreme Court mandated a child’s age as a consideration in analysing the issue of whether a juvenile is in custody for purposes of \textit{Miranda}, and promulgated the notion initially set forth in \textit{Roper} and \textit{Graham} that “a child’s age is far ‘more than a chronological fact’ and they ‘are more vulnerable or susceptible to...outside pressures’ than adults.” In concluding that a child’s age is an objective consideration in whether the child is in custody, the \textit{J.D.B.} Court expanded the framework for inclusion of the “reasonable juvenile” idea. This next section will propose why the reasonable juvenile should be specifically implemented to discern and assess culpability for juveniles tried as adults.

VI. THE “REASONABLE JUVENILE” DEFINED

While there is plenty of advocacy to reduce or even abolish the transfer of juveniles to adult prison altogether, I will be focusing on the problems with the increase of juveniles transferred to adult court and recommend for the appropriate resources through the “reasonable juvenile” standard.

\textsuperscript{129} \textit{Id.} at 16.
\textsuperscript{130} \textit{Superpredator Myth}, supra note 113.
\textsuperscript{131} \textit{Id.}
\textsuperscript{132} See \textit{id.}
\textsuperscript{134} \textit{Superpredator Myth}, supra note 113.
\textsuperscript{135} U.S. CONST. amend. XIV.
\textsuperscript{137} \textit{Id.} (citing Roper, 543 U.S. at 596) (internal quotes omitted).
\textsuperscript{138} See \textit{id.} at 274.
The “reasonable person”—a concept all-too-familiar to an aspiring lawyer well within the first semester of law school—is the fictionalized person representative of the objective, average person that weaves through the backbone of civil litigation as a frame of reference in assessing culpability or negligence.\(^{139}\) Jurist Oliver Wendell Holmes Jr. conceptualizes the necessity of this within the analysis of the legal framework, “a certain average of conduct, a sacrifice of individual peculiarities going beyond a certain point, is necessary to the general welfare.”\(^{140}\)

However, this reasonable person standard assessment excludes children because of their distinct qualities and necessitating a “reasonable juvenile” analogous to the “reasonable person” standard.\(^{141}\) The reasonable juvenile will encompass the reduced level of culpability or mens rea along with greater potential for rehabilitation recognized in light of the underdeveloped sense of responsibility, increased vulnerability to negative influences, and transitory personality traits of adolescents.\(^{142}\)

This necessity is heightened with the expansion of transfer laws; the safeguards put in place in recognition of dealing with the specific needs of adolescent offenders are largely obliterated for juveniles prosecuted as adults.\(^{143}\) The process of trying, sentencing and incarcerating juveniles in adult court does not have the same environment or sentencing scheme of the juvenile court. These young offenders are subject to the same sentencing guidelines as adults and can receive mandatory minimum sentences.\(^{144}\) It is important for legislatures to implement proper resources for adequacy in the adult prosecution system; a concern heightened with the increasing number of juveniles being tried as adults in the recent two decades.\(^{145}\)

Coinage of a “reasonable juvenile” standard that reflects these mitigating traits of youth ensures that specific traits of youth are considered in the legal analysis. It will serve as a safeguard upon these adolescents in sentencing and policy considerations. The next section will discuss three examples how this standard can be used towards effective policies and render better outcomes for juvenile offenders in the adult criminal system.

\(^{139}\) Restatement (Second) of Torts § 283 (Am. Law Inst. 1965).

\(^{140}\) Id.

\(^{141}\) See J.D.B., 564 U.S. at 271−72.

\(^{142}\) Such a bright line defined age cutoff provides a useful benchmark, as noted by the Model Penal Code’s Sentencing Guidelines, that while no fixed boundary can fit every individual before the courts, this can avoid the costs of individualized psychological evaluations.

\(^{143}\) See generally section III.

\(^{144}\) Id.

\(^{145}\) Consequences Aren’t Minor, supra note 118, at 6. The superpredator era of the 1990’s increased the implementation of categorical statutes thus increasing the number of juveniles transferred to the adult court system.
VII. ELIMINATE HOUSING IN THE ADULT PRISON SYSTEM

Over the past decade, extensively conducted social science research shows youth in adult corrections face harsher settings than those in juvenile correctional settings. In consideration of the reasonable juvenile who is vulnerable or susceptible to negative influences, and susceptible to outside pressures, I propose juvenile offenders transferred into the adult prisons be placed in separate correctional facilities. That “juveniles are a vulnerable population within adult correctional facilities” is a fact increasingly recognized by national, state, and local policymakers. These young offenders can be placed in adult jails pre- and post-trial, and sentenced to serve time in an adult prison, which has a severe dearth in rehabilitative services.

In fact, the Model Penal Code Sentencing Guidelines prohibit a person under the age of eighteen to be housed in any adult correctional facility. This prohibition against housing juveniles in adult institutions is also recommended by the American Bar Association, based off research that shows youth are especially vulnerable to victimization in adult institutions and at a greater risk than adult inmates of psychological harm and suicide—a policy frequently overlooked by most American jurisdictions.

Transferred youth in most states may be held in juvenile detention facilities, either routinely or pursuant to court orders in individual cases. Forty-eight states authorize detention or jailing of juveniles awaiting trial in criminal court. Only eighteen of the states mandate that juveniles must be kept from contact with adult jail inmates. This reveals some, but nearly not enough, awareness of the necessity of maintaining separate housing facilities for juveniles.

Experiments show how given the plasticity of adolescent brains, life experiences can influence activity-dependent myelination. In an experiment conducted with laboratory animals, adolescent mice raised in an enriched environment were compared with those raised in a restricted one. The adolescent mice in the enriched environment were found to have a larger corpus callosum (the huge bundle of axons that crosses the midline to connect the left and right sides of the brain) and more heavily myelinated brains than the mice reared in restricted environments. Such studies reveal how the magnitude of neuronal changes during adolescence...
is critical during these highly vulnerable years.\textsuperscript{159} There is also ample evidence that transferred adolescents are more likely to “recidivate, recidivate at a higher rate, and be rearrested for more serious offenses, on average, than those retained in the juvenile system.”\textsuperscript{160} In light of this research, housing juveniles in separate arenas will be an effective mechanism to prevent unnecessary and easily avoidable severe negative influences and trauma deflected upon juveniles in an adult prison environment.\textsuperscript{161}

VIII. REHABILITATION THROUGH POST-DISPOSITION REVIEW

As stated previously, among the four traditional penological justifications upon which the sentencing and punishment scheme of the criminal justice is built, rehabilitation is the primary justification for juvenile punishment.\textsuperscript{162} Based upon findings of a juvenile’s “transient rashness, proclivity for risk, and inability to assess consequences,”\textsuperscript{163} this “enhance[s] the prospect that, as the years go by and neurological development occurs, [the juvenile’s] ‘deficiencies will be reformed.’”\textsuperscript{164}

This is also incorporated in the “reasonable juvenile,” who has a greater potential for reform and rehabilitation than the adult counterparts.\textsuperscript{165} Given their increased capacity of rehabilitation, I propose a greater focus on services for reforming for juveniles transferred to adult courts to encourage prevention of recidivism. More precisely, I recommend instituting a six-month post-disposition review to determine whether the juvenile will be amenable to rehabilitative services, such as functional family therapy (“FFT”) or multisystemic therapy (“MST”) model. Such services can be highly effective tools as trajectories set in adolescence can have a major impact later in life; altering these courses in positive ways prior to adulthood have a greater impact than applying the same interventions later.\textsuperscript{166}

\textsuperscript{159} See id.
\textsuperscript{161} See generally EDWARD HUMES, NO MATTER HOW LOUD I SHOUT: A YEAR IN THE LIFE OF JUVENILE COURT (Touchstone ed., 1997). Such a boundary does not presuppose that eighteen-year-old offenders placed in adult courts are adults and thus, automatically immune to the hazards of adult prison. Rather, as suggested earlier, eighteen is the bright line age cutoff, adopted for sheer necessity of such delineations and also promulgated by the Model Penal Sentencing Guidelines.
\textsuperscript{163} Miller, 132 S.Ct. at 2465.
\textsuperscript{164} Id. (quoting Graham, 560 U.S. at 58).
\textsuperscript{166} See Dahl, supra note 49, at 7.
FFT is a family- and community-based treatment where the juvenile’s problems are largely rooted in antisocial and behavioural problems. The model views these problems as a symptom of dysfunctional family relations and focuses on replacing dysfunctional patterns with new patterns by integrating behavioural and cognitive behavioural interventions. It is phase-based, initially focusing on engaging family members, followed by emphasizing the implementation of behaviour change within the relationships. Evidence over the past decade has established it to be an effective intervention technique for juveniles. MST is a family- and community-based treatment that targets the more serious youth offenders, such as those who deal with violence, substance abuse, and serious emotional disturbances. The therapy targets a broader spectrum of facets that influence the juvenile—from family and peers to school and community—and aims to decrease association with the deviant and negative influences while simultaneously targeting the improvement of family functioning. MST is one of the most validated programs, showing consistent decreases in re-offense rates; and therefore, works as a highly effective tool for rehabilitation.

Scientific studies lend credence to the implementation of such a review mechanism; adolescent brains have far more plasticity in the neuronal circuitry, they are malleable and there is an opportunity for long-lasting beneficial adaptation at a particularly vulnerable time of development. The on-going brain development can be much more positively affected by proper rehabilitation than adults. Additionally, this type of system will allow more positive interaction for juveniles outside the prison environment, such as social workers, who can inspire greater rehabilitation within the juvenile offender.

This policy is necessary, because while rehabilitation should be a goal for juveniles transferred into the adult criminal jurisdiction, it often fails to be attained. The adult sentencing scheme is not tailored to be rehabilitative, and juvenile programs and resources within the adult system are scarce. Incorporating the post-disposition review for juveniles in adult court ensures a continuous review of the juvenile’s behaviour while in adult prison as well as targets the access of rehabilitative resources.

Ultimately, such changes can enhance the treatment and lead to better outcomes for juvenile offenders tried as adults within the legal system.

167 Scott Henggeler et al., Evidence-Based Interventions for Juvenile Offenders and Juvenile Justice Policies that Support Them, 25 SOC. POL’Y REP. 1, 5-6 (2011).
168 Id.
169 Id.
170 Id.
171 Id.
172 Id.
173 Id.
174 BIOLOGY OF ADOLESCENCE, supra note 76, at 9.
175 Limited Use of Neuroscience in Juvenile Sentencing, CTR. FOR SCI. AND L. (Nov. 30, 1999); BIOLOGY OF ADOLESCENCE, supra note 76, at 9.
176 See CONSEQUENCES AREN’T MINOR, supra note 118, at 7-10.
177 Id.
IX. IMPLEMENT MANDATORY FITNESS HEARINGS

I propose mandating fitness hearings—a comprehensive hearing to contemplate the youth’s family history and previous background to deem the best route for the juvenile offender—for all cases where juveniles are transferred through statutory exclusion laws. There are three major problems with the current statutory exclusion method that brings about the dire need of fitness hearings.

First, statutory exclusion mandates the transfer of offenders of a certain age who commit certain crimes, with no regard for individualized consideration, to criminal court. This has resulted in arbitrary lines drawn for ages and crimes, often minor, in different states. For example, in Idaho, an offender as young as fifteen would automatically be transferred to adult criminal court for a robbery offense. In Arizona, all felony offenses for those as young as fifteen, provided they were already disposed as juveniles more than once for felony-level offenses, would be excluded to statutory offenses. By the end of the 1990s, the number of states with such statutory exclusions jumped from twenty to thirty-eight, and the number of prosecutorial discretion from seven to fifteen. In 1998, less than twenty-five percent of cases were transferred to criminal court via judicial waiver; in comparison, forty-two percent stemmed from exclusion cases and thirty-five percent from prosecutorial direct files. Other states also broadened the application of preexisting statutes; in Pennsylvania, an exclusion law that previously only applied to cases of murder was expanded to a longer list covering more violent offenses.

Second, such categorical exclusions are often over inclusive and broadly define crime categories. An offense from a high-volume category can run the gamut of violent offenses, such as assaults, robberies, burglaries, and drug offenses. This sort of automatic transfer language results in including a variety of actual crime scenarios, from the relatively trivial to the serious occurrences. There is neither a substantial mechanism for evaluation language nor any type of formal court hearing to monitor such transfers, resulting in the unnecessary transfer of offenders detrimentally harmed from receiving disproportionate adult sentences or being placed in a harsher environment.

Third, since such automatic exclusions bypass juvenile courts altogether, they commonly get lost in states general criminal processing.

178 GRIFFIN ET AL., supra note 118, at 2.
180 GRIFFIN ET AL., supra note 118, at 6.
181 Id. at 9.
182 Id. at 9–11.
183 Id. at 9.
184 Id.
185 See id. at 24.
186 Id.
It is hard to formally gather data on assessing the effectiveness of this transfer method. This can be better monitored through fitness hearings.

In proposing the implementation of fitness hearings, I draw upon the schema set forth in the California criminal system. Such a hearing will be conducted in adult court with the purpose of considering how such offenders should be comprehensively treated in the adult court system—the type of sentencing, the housing in the adult system, and the rehabilitative services—or if deemed appropriate in certain cases, for transfer back to the juvenile court system. The fitness hearings will consider the juvenile degree of culpability and potential for reform in reference to the “reasonable juvenile” standpoint and specifically determine how the mitigating factors of age, education, and background should be incorporated in treatment of the juvenile. For example, the hearing can be used to determine the length of the sentence, the place of detention, the type of rehabilitative services, or determine if the juvenile is amenable within the juvenile court system.

Support is also found in the Model Penal Code provision, which states that in assessing an offender’s blameworthiness, the offender’s age shall be a mitigating factor to be assigned greater weight for those of younger ages. As the Supreme Court explained when banning mandatory life-without-parole sentences in Miller, individualized sentencing is found to have better outcomes for juvenile offenders since “our individualized sentencing cases alike teach that in imposing a State’s harshest penalties, a sentencer misses too much if he treats every child as an adult.” The recent interdisciplinary case law holdings validate the notion that youthful qualities are not to be overlooked and fitness hearings can build on this momentum to move away from such blanket statutory exclusions.

X. CONCLUSION

The rulings by the Supreme Court in Roper, Graham, and Miller collectively establish “children are constitutionally different from adults for purposes of sentencing.” Outlawing the most severe criminal punishments for juveniles—the death penalty, life-without-parole for non-homicide crimes, and mandatory life-without-parole for homicide crimes—
reflects this notion.197 Within the framework of the precept that “punishment for crime should be gradated and proportioned to [the] offense,”198 the three listed punishments were considered disproportional and declared unconstitutional in violation of the Cruel and Unusual Punishments Clause of the Eighth Amendment.199

The disproportionality of these punishments was determined by the evolving standards of decency, based largely on biological and psychological distinctions in adolescents.200 Parents have intuitively known it, the law has implicitly integrated it since the conception of juvenile law, and now technological advancements have unearthed how juveniles are psychologically distinct because their brains are still growing to adulthood.201 The analysis in the trilogy of cases did not rest only on common sense of what “any parent knows,” but upon a deeper understanding in science.202

Within this new constitutional landscape, there is strong support for the “reasonable juvenile” standard in assessing the culpability of juveniles tried as adults.203 Integrating the distinctions in adolescent physiology with this standard can be used in an interdisciplinary approach towards formulating policies reflective of culpability for juvenile offenders.204

The separate classification of youth has been settled in law.205 Some examples are reflected by the imposed limitations to enter a binding contract enforceable against them, to marry without parental consent, and to vote.206 This separate classification is also reflected in the phases of development delineated between childhood and adulthood—such as eighteen being the legal voting age, or twenty-one as the legal drinking age.207 In addition to functioning as cultural milestones, these categorical distinctions are reflective of society’s implicit notion that children are on a journey towards adulthood.208 The presence of these laws function as a protective mechanism that refrain from placing responsibilities on young shoulders—or brains—until they are sufficiently formed enough to undertake such duties.209 The specialized treatment of minors in juvenile

197  Miller, 132 S. Ct. at 2463; Graham, 560 U.S. at 58; Roper, 543 U.S. at 561.
198  Roper, 543 U.S. at 560 (citing Atkins, 536 U.S. at 311).
199  Miller, 132 S. Ct. at 2463; Graham, 560 U.S. at 58; Roper, 543 U.S. at 561.
200  Graham, 560 U.S. at 68; Roper, 543 U.S. at 560.
202  Miller, 132 S. Ct. at 2464 (citing Roper, 543 U.S. at 569).
203  See J.D.B., 564 U.S. at 272–73.
204  See Graham, 560 U.S. at 68; Roper, 543 U.S. at 560.
205  J.D.B., 564 U.S. at 273 (“The law has historically reflected the same assumption that children characteristically lack the capacity to exercise mature judgment and possess only an incomplete ability to understand the world around them.”).
206  J.D.B., 564 U.S. at 273.
209  See J.D.B., 564 U.S. at 272–73.
In light of the increasing number of juveniles transferred into the adult system, this is a heightened concern that is incumbent to be addressed with the recent landmark cases. Ultimately, I propose three policies that integrate the understanding behind the “reasonable juvenile” standard: (1) a separate housing institution for juvenile offenders in adult jails given the increased vulnerabilities of the adolescent, (2) implementation of a mandatory fitness hearing for statutory exclusions, and (3) increased rehabilitation goals for juveniles with uniformly imposed post-disposition reviews for sentences less than ten years.

The Supreme Court noted that “[y]outh is more than a chronological fact. It is a time and condition of life when a person may be most susceptible to influence and to psychological damage.” A greater understanding of juveniles’ neurological makeup adds another dimension to juvenile law that will be essential to improving the juvenile system and ultimately render better outcomes for juvenile offenders.

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210 CONSEQUENCES AREN’T MINOR, supra note 118, at 7.
211 Id. at 6.
212 Roper, 543 U.S. at 569 (citing Eddings, 455 U.S. at 115) (internal quotations omitted).