The Problematic Transformation of Neuroscientific Knowledge into Legislative Change:

A Case Study from the Connecticut Juvenile Justice System

by

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Class of 2019
"For these are all our children. We will all profit by, or pay for, whatever they become."

~James Baldwin

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Acknowledgements

First and foremost, I would like to thank my advisor, Professor Charles Barber, without you this project would still be a wild mess of notes jotted in various places on my computer. Thanks for being the calming voice on the other end of my panicked phone calls and for teaching me innumerable lessons about writing, criminal justice and how a coin flip is an impractical way to make decisions about the future.

Thank you to Dr. Sara Russell, Beth Hogan Esq., Mike Lawlor Esq., Lael Chester at the Columbia Justice Lab, and Dr. Gloster Aaron for agreeing to speak with me, and providing me invaluable insights into the emerging world of juvenile justice and neuroscience.

To the amazing *Nice Ladies*, what would I possibly have done without you. Meg, Elizabeth, Nicole, Kinsey, Lauren, Kayla, and Maya, thank you for supporting me, putting up with me, and most of all, helping me laugh through the pain of this thesis. I attribute any amount of sanity that I still possess after these four years to your friendship. I am forever thankful to be a part of such a special group of awe inspiring, intellectual, hilarious and powerful women. And to my sixth roommate Chris... who asked 10 times to make sure I was writing him into my acknowledgments, thank you for the million little things that you do. Last but certainly not least, thank you to my teammates for teaching me strength, to the A9 boys for the years of friendship, and to everyone at Wes who made this experience so special.

Finally, my most sincere thanks to the people who made me who I am: my family. To my sister, no words could thank you enough. You have taught me so much over the course of many years, but most of all, you are my forever best friend. To my parents, without your love, constant support and (not so) subtle nudging in the direction of social justice and law, this thesis would have never been possible. Your selfless encouragement, love and support gives me the strength to take on any challenge. This thesis, like many pursuits in my life, was done in the efforts of making you both proud. You have sacrificed more than I most likely deserve so that I could receive this education over these past 22 years, so here is my thesis in return. Let’s call it even.
This thesis seeks to examine the role of neuroscience in shaping public policy in the context of the juvenile justice system in the United States. Well before current neuroscientific technology and before the actual establishment of the juvenile justice system in the United States, there was always a historical understanding that juveniles were not capable of possessing the same moral responsibility for a crime as adults. This thesis examines the shifting political tides that have impacted the juvenile justice system throughout its history, as well as explores the current neuroscientific understanding of the differences between adolescent and adult brains and its connection to criminality. In the neuroscientific community, it has been widely accepted for decades that adolescent brains are not fully developed until their mid-to-late 20’s, however, it has taken decades for any real reform movement in the juvenile justice system.

Using Connecticut as a case study, this thesis examines the efforts between 2015 and 2019 to transform juvenile justice with the “Raise the Age” initiative, which seeks to increase the age at which juvenile offenders are tried as adults, from eighteen to 21. I explore the recent changes in Connecticut and explore the disparities between accepted scientific knowledge and its transformation into public policy. The thesis chronicles the torturous and ultimately unsuccessful campaign to “Raise the Age” in the state. The dissertation concludes with an exploration of the reasons for the disconnect between accepted scientific understanding and policy, as well as offering some recommendations on how to attempt to bridge this connection.
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Introduction

This thesis seeks to explore the ways in which science, in particular, modern neuroscientific understanding, is turned into legislation in the context of the juvenile justice system in the United States. Even before our modern understanding of neuroscience, the judicial system has always acknowledged fundamental differences in criminal culpability between children and adults. In the scientific community, it has been widely accepted for decades that the adult brain does not fully develop until the mid-to-late 20’s. More broadly, neuroscience has influenced the societal conception of culpability of adolescent offenders. However, the judicial system still does not incorporate this neuroscientific understanding of the brain into many of its practices. This thesis investigates the question: why is it so difficult to transpose neuroscientific understanding into institutional policy change?

I first encountered this topic during my junior year of high school, when I interned for a month in the Criminal Court of Philadelphia. Under the false notion that I wanted to be a lawyer, I sat in on a resentencing trial of an individual who, several years prior, at age seventeen, was sentenced to life without parole for murdering three people. Following the Supreme Court decision, Miller v. Graham, that ruled juveniles were no longer able to receive this penalty, the now much older individual was given the opportunity to receive a new sentence. While I sat and listened to family members and a forensic psychologist speak, I was moved by his story. Here was a boy who had grown up only 25 minutes from my house, and who had, at the time of his actions, been the same age that I was that day, but had experienced such a different world than me. While at first, I was shocked by the
crimes, after hearing his story and experiences, I became passionate about understanding how experience drives action, criminal or otherwise.

Entering college, I majored in neuroscience, looking for a discipline that could help explain these questions. Throughout my undergraduate coursework I have had the opportunity to learn about many of the cognitive processes responsible for this type of impulsive or violent behavior, which sparked my interest in the intersectionality of neuroscience and the law. This thesis is a culmination of years of my fascination with the human brain and passion for social justice. In this project, I hope to explore this connection and understand the possibility of translating scientific knowledge from academia to the legal system, where it can truly impact the lives of people.

It is nearly impossible to attempt an in-depth analysis of the criminal justice system in the United States without discussing the racial disparities embedded within the system. However, while these issues are implicit in the project, I am choosing to focus on broader topics of institutional change which could potentially yield a more evidence-based judicial system and, in turn, begin to lessen the disproportionate effect of the criminal justice system on the lives of people of color.

In the first section, I will broadly outline the establishment of the juvenile justice system in the United States. This overview allows me to explore the shifting pendulum of political tides, as well as the attempt to bring neuroscience into contemporary litigation. In the next chapter, I will explore the current neuroscientific understanding of the adolescent brain, and the debates that have followed concerning how it should be applied in the legal realm. In chapter three, I will look at Connecticut as a case study and examine how it has arguably gone from having one
of the worst juvenile justice systems in the country to being a leader in juvenile justice reform movement. In the Connecticut case study chapters, I will describe the tortuous process through which scientific knowledge does—and does not—lead to actual policy change. I will also focus in particular on a current initiative, “Raise the Age”, which seeks to increase the age at which juvenile offenders are tried as adults. I then suggest some potential reasons for why the process of turning neuroscience into policy change has been so difficult and delayed, and end by offering possible places of improvement within this process.
Overview of the Juvenile Justice System

From the inception of the criminal justice system in the United States, there have always been differences in how juvenile and adult offenders are treated. In the 1760’s William Blackstone, a prominent English jurist, judge, and politician, published “commentaries of the Laws of England,” which was widely read, admired and utilized in governing the early American colonies.²³ Within these commentaries, Blackstone outlined two fundamental clauses that must be met for a defendant to be found guilty of a crime. The first is that an unlawful act must be committed, and second—the more relevant clause in the context of juvenile offenders—is that the person must have had a “vicious will.”⁴ To determine whether a person meets this second standard, Blackstone begins to list those who would be considered incapable of committing a crime, beginning with drawing a line between “infant” and “adult.”⁵ He drew this line at the point where an individual could understand their action. Blackstone asserted that individuals under the age of seven-years-old would be considered an infant who could not be guilty of a felony, and those over fourteen were liable to suffer as adults if found guilty of a crime (including what we call today, capital punishment).⁶ Between ages seven and fourteen was considered a “grey zone,” where courts would determine whether this child appeared to understand the

⁵ Ibid.
difference between right and wrong if they could then they were treated as an adult.\(^7\) An example given in the commentaries of the Laws of England was of an eleven-year-old boy who murdered his friend and proceeded to bury the body and hide. He was determined to understand his unlawful act, which could be seen by the fact he felt the need to hide them and was sentenced to death.\(^8\)

This line between “infant” and “adult” illustrates one of the first times in U.S. history where the criminal justice system differentiated between adolescents and adults. Well before science could explain differences in adolescent brains, people still understood that children were less capable of experiencing the same culpability as adults, and this “grey zone” of where to draw the line of adult responsibility is something that the U.S. continues to struggle with to this day.

**“SAVE OUR CHILDREN” ERA**

In the early 19\(^{th}\) century the ideology of “children” began to take hold in the United States. As the economic climate shifted from agricultural to urban industrial, there was a transformation in which the roles of women and children were greatly modified. From this sprouted the socially constructed idea of “children,” largely defined by the upper and middle classes who began to “promote a new ideology of children as vulnerable, fragile and dependent innocents who required special attention and preparation for life.” This marked the era of “save our children.”\(^9\) At the same

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\(^7\) Ibid.
\(^8\) Ibid.
time, aged-based research on positive criminology began to emerge.\textsuperscript{10} These theories challenged the ideology that crime is committed based on free will. Instead, these theories proposed that there are other born and nurtured factors that cause criminal action.\textsuperscript{11} As the narrative of social scientists highlighting the other deterministic factors involved in committing crimes became widespread, it caused the public to reexamine the idea of moral responsibility and culpability for criminal action. This shift fostered the idea of “rehabilitation” or “treating” offenders instead of punitive action. Between a new age category of the fragile “child” and emerging ideas of diminished responsibility, the ways in which juveniles were treated began to undergo transitions to reflect the new “rehabilitative ideal.”\textsuperscript{12}

In response to the ideology of “child salvation” reform schools were established to house juvenile offenders, which are modernly referred to as “juvenile delinquent institutions” or “correctional facilities.” The goals of these institutions were to protect juvenile offenders by removing them from adults and focusing on rehabilitation. After years of public advocacy, in 1899 the first juvenile court in the United States was established in Cook County, Illinois.\textsuperscript{13} This sparked a national movement, and within 25 years almost every state in the country had developed a similar juvenile court system. These courts were ruled by the legal doctrine “parens patriae,” Latin for “parent of the country.”\textsuperscript{14} This doctrine gave the power to the state to act as a guardian or parental figure to those with disabilities, including but not

\textsuperscript{10} Feld, “The Transformation of the Juvenile Court--Part II: Social Structure, Race, and the "Crack Down" on Youth Crime,” 329.
\textsuperscript{12} Feld, “The Transformation of the Juvenile Court—Part II: Social Structure, Race, and the “Crack Down” on Youth Crime,” 336.
\textsuperscript{13} “The History of Juvenile Justice Part 1,” 5.
\textsuperscript{14} Ibid.
limited to children. This gave judges the ability to use their discretion in determining the culpability of each child if they committed the crime under the age of eighteen (in most states), focusing on the mantra of addressing the “best interests of the child.” Juvenile court cases were not held to the same procedural rules of adult criminal court. Differences between juvenile and adult court included the following: juveniles were no longer capable of being found guilty but rather “found to be delinquent;” judges were able to use alternative rehabilitation strategies such as detention or probation rather than punitive measures; there were informal court proceedings including private hearings without juries; separation from adult offenders at every stage of processing; and the equal consideration of juvenile’s background and social history to the offense in handling the case.

From its inception, the goal of juvenile court encapsulated Blackstone’s concepts, creating a legal separation between “infant” vs. “adult.” The system attempted to create a clear difference in the way the United States dealt with adolescents “based on the belief that youth do not have equal capacity for careful thinking and awareness of the consequences of their behavior.” In doing so, judges were given freedoms and opportunities unlike that of adult court, to consult specialists such as behavioral scientists, social workers and clinicians to best implement a cohesive and helpful plan for each individual offender. This marked the beginning of incorporating psychosocial understanding to better comprehend

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17 Ibid, 28.
adolescent behavior, culpability, and rehabilitation, in the context of the law.\textsuperscript{19} Unfortunately, in many ways, this fantasy model of juvenile justice system fell short.

\textbf{ERA OF DUE PROCESS AND JUVENILE JUSTICE REFORM}

For 60 years after the establishment of the first juvenile courts, the federal government played virtually no role. Courtroom proceedings were considered functions of the state and local jurisdiction.\textsuperscript{20} In the 1950’s through the 1960’s, the many deficiencies of the juvenile justice system began to emerge in popular culture. Correctional facilities were not only criticized for their lack of effectiveness, but the public was outraged at the many accounts of facilities being overcrowded and riddled with sexual and physical abuse.\textsuperscript{21} This widespread horror not only reflected the ways in which the juvenile justice system had failed in its mission to “save our children,” but it also highlighted many of the underlying systemic problems in the child-saving movement itself.

Initially, advocates for the establishment of correctional institutions as well as juvenile courts believed that if parents could not, or would not, properly control their children who threatened the moral underpinnings of society, the government should be given jurisdiction over these children to aid in their rehabilitation.\textsuperscript{22} However, this also caused tension between the idea of family as a private realm of society and the interventionist authority of the state. In addition, the bifurcation highlights the ways in which United States society differs between its beliefs and policies, torn between the image of a child seen as dependent and in need of protection, while also viewing

\textsuperscript{20} Ibid, 30.
young people as dangerous and erratic. In other words, there was a division between
the “fear for children and the fear of children.”

This discussion reveals many of the underpinnings of the establishment of the
juvenile justice system as a whole. The juvenile justice system, in its inception, was
largely driven by class and ethnic antagonisms. Many have critiqued this ideology of
the child-saver movement in its totality saying:

“Despite their benevolent rhetoric and aspirations, however, the Progressive
"child-savers" deliberately designed the juvenile court to discriminate-to
"Americanize" immigrants, to control the poor, and to provide a coercive
mechanism to distinguish between "our children" and "other people's
children."²⁴

It is impossible to discuss the history of the establishment of the criminal
court system as well as the juvenile criminal court system without addressing the
clear and significant role of race. From the beginning, many believe that the juvenile
court system was used to control the significant surge in immigration of Eastern
Europeans as well as racial and class struggles between African and Caucasian
Americans.²⁵ During the 1950’s and 1960’s it became clear that there were racial
disparities in government intervention as well as sentencing, as the juvenile criminal
court system left this up to the discretion of the individual judge, who, depending on
temperament or personal philosophy, could implement vastly different

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²¹ “Juvenile Justice History,” Center on Juvenile and Criminal Justice, accessed December
²³ Michael Grossberg, “Changing Conceptions of Child Welfare in the United States, 1820-
Google Books Preview, 3.
²⁴ Feld, “The Transformation of the Juvenile Court—Part II: Social Structure, Race, and the
“Crack Down” On Youth Crime,” 339.
²⁵ Ibid.
interventions. Instead of creating a juvenile justice system that treated the sociocultural roots of criminality, an institution was created to preserve white American power and privilege, and treat the symptom (the criminal action) rather than the disease (systemic poverty and racism).

The alarming state of the juvenile correctional facilities at the end of the 19th century and the underlying racial and interventionist tensions sparked a new era of reform in the juvenile justice system. The goal of reformers was to improve conditions, refocus on rehabilitation and implement clearer jurisprudence in juvenile courts to minimize racial disparities in sentencing and unnecessary state intervention. In a series of notable U.S. Supreme Court cases, juvenile justice system reforms were made surrounding the implementation of certain due processes limitations, which juvenile court had not previously been subject to. In the three successive Supreme Court cases, justices ruled in favor of implementing increased due process laws in the juvenile justice system.

In the first of the Supreme Court Cases, *Kent v. United States*, in 1966, Morris Kent had been in the juvenile court system since the age of fourteen for house breaking and an attempt at snatching a purse. At sixteen-years-old, Kent’s prints were found in an apartment where a woman had been robbed and raped. Kent admitted to the crimes, and through psychiatric examination, it was concluded that he suffered from severe psychopathology. The physician recommended he be placed in a psychiatric hospital for observation. Instead, the juvenile court judge waived

27 Lawrence and Hemmens, “History and Development of the Juvenile Justice Process.”
28 “Juvenile Justice History,” Center on Juvenile and Criminal Justice.
jurisdiction, moving Kent’s case to adult criminal court. Kent’s lawyer appealed the decision to waive jurisdiction, arguing that Kent was an ideal candidate for rehabilitation if given a chance to receive proper hospital treatment. The judge did not respond to the appeal and retained the decision to waive jurisdiction. The U.S. Supreme Court heard Morris Kent’s case and ruled in favor of Kent, stating he was “entitled to a hearing and to a statement of the reasons for the juvenile court’s decision to waive jurisdiction.”\textsuperscript{31} Members of the Supreme Court went on to express concern about the failings of the juvenile court, opining “there may be grounds for concern that the child receives the worst of both worlds [in juvenile courts]: that he gets neither the protections accorded to adults nor the solicitous care and regenerative treatment postulated for children.”\textsuperscript{32} This case marked a significant change in juvenile court proceedings as it introduced the first regulations on the due processes in juvenile court.

Following, in 1967, the Supreme Court heard the case \textit{In Re Gault}. Within this trial, Gerard Gault, a fifteen-year-old boy from Arizona was in the process of completing six months of probation in a robbery when he was accused of making indecent phone calls to his neighbor.\textsuperscript{33} When the neighbor called the police to complain, officers took Gault into custody without leaving notification to his parents. Before trial, the courts did not inform Gault nor his parents what the charges were against him. There proceeded to be sworn witnesses but no record of the courtroom proceedings. The neighbor that lodged the original complaint was not present. The judge sentenced Gault to attend (a correctional facility in Arizona until Gault turned

\textsuperscript{32} Ibid.
\textsuperscript{33} Ibid.
21 unless discharged earlier by “due process law.” This meant Gault would face up to six years at the school, where an adult who was convicted of vulgar or obscene language, who received the maximum possible penalty, would only be subject to a fine of $50 and imprisonment for no longer than two months. Gault’s parents filed for their son to be released saying that his constitutional rights to a fair trial had been violated as well as his right to due process. The Supreme Court ruled in favor of Gault saying that juveniles have the right to certain critical elements of due process, including: notice of the charges against them, access to legal counsel, and the right against self-incrimination and the capacity to confront and cross-examine witnesses. The Gault Case represented another development in creating due process in juvenile court.

The final successive Supreme Court case ruling in favor of increased rights to in the juvenile justice system took place in 1970. In the In re Winship case, Samuel Winship, at the age of 12, was accused of stealing money out of a woman’s purse in a store. An employee reported that he witnessed Winship running from the store around the same time the money was found to be missing. Others in the store disputed this recounting saying that the employee was not in a position to see the money being taken at all. In the juvenile court proceedings, the judge agreed with Winship’s attorney saying that there was in fact reasonable doubt about whether or not Winship was guilty. However, because the case was being tried in New York, where the court only had to meet the standard for civil law of “preponderance of evidence” Winship was adjudicated delinquent and sentenced to a New York correctional institution until

34 Ibid, 5-6.
36 Ibid.
37 Ibid.
he turned twenty-one.\textsuperscript{38} The Supreme Court ruled in favor of Winship saying that the standard of evidence for adjudication of delinquency, especially for offenders who face long term commitments to institutions, should be held to the same burden of proof as adult court, “proof beyond a reasonable doubt.”\textsuperscript{39} Justice Stewart formally dissented the ruling, saying that they were blurring the lines between criminal and juvenile court. He warned that by further restricting juvenile court it takes away from the fundamental principles of treating juveniles with benevolence and restricts the courts’ flexibility in dealing with each offender.\textsuperscript{40}

These three national rulings caused significant changes in juvenile proceedings across the country. However, the evolution of due process law within the juvenile courts was brought to a halt as there was intense push back against blurring the lines between juvenile and adult courts. This was seen in the 1971 Supreme Court case, \textit{McKiever v. Pennsylvania}.\textsuperscript{41} In this case, Joseph McKiever, at the age of sixteen, along with a group of friends, was arrested and charged with robbery and larceny for stealing 25 cents from a person on the street. McKiever’s attorney applied for the case to be heard in front of a jury. However, his appeal was denied by the judge in juvenile court, who sentenced McKiever to probation. The Supreme Court heard the case and ruled against McKiever, stating that a jury would only further destroy the informal and non-adversarial atmosphere of juvenile court.\textsuperscript{42} Three Supreme Court judges dissented saying that juveniles who faced “confinement” until the age of twenty-one should be “entitled to the procedural protection as an adult.”\textsuperscript{43}

\begin{thebibliography}{99}
\bibitem{39} Lawrence & Hemmens, “History and Development of the Juvenile Justice Process,” 27.
\bibitem{40} “The History of Juvenile Justice Part 1,” 8.
\bibitem{41} Lawrence & Hemmens, “History and Development of the Juvenile Justice Process,” 27.
\bibitem{42} Ibid.
\end{thebibliography}
This case marked the end of the evolution of due process in the attempt to uphold a distinct line between juvenile and adult court.

In the 1960’s and 1970’s, there was an apparent struggle within the juvenile justice system, trying to balance the rights of juveniles while maintaining clear barriers between juvenile and adult courts. States differed in their provisions for juveniles; however, tension emerged surrounding whether or not adolescents benefitted from having the court intervene on minor offenses.\textsuperscript{44} Many believed that to house juvenile offenders who commit minor crimes like truancy or disobeying parents with more hardcore criminals could be detrimental to adolescent development.\textsuperscript{45} While others argued that these minor offenses were only “stepping stones” to harsher and more violent crimes and that the state should intervene to prevent future criminality.\textsuperscript{46} In 1974, Congress passed the Juvenile Justice and Delinquency Act, which sought to make clear sweeping legislation about the separation of adults and juveniles in the justice system across the nation. While there were multiple amendments well into the 1980’s, the bill sought to make it clear that in order to receive national formula grants, states must follow specific provisions including separation of adults and children, as well as specifying that juveniles are only able to be charged for a crime that would be illegal for adult offenders.\textsuperscript{47}

\textsuperscript{44} Lawrence & Hemmens, “History and Development of the Juvenile Justice Process,” 30.
\textsuperscript{45} Ibid.
\textsuperscript{46} Ibid.
\textsuperscript{47} Ibid, 30-31.
“Tough on Crime” Era

Beginning in the late 1970’s, public perception surrounding youth offenders shifted. As violent crime committed by juveniles increased (particularly homicide), conservative rhetoric criticizing the leniency of juvenile court dominated the political landscape, instilling the country with fear.\(^48\) This sparked the “tough on crime” era. More than just a catchy political slogan, this ideology completely transformed the once parental and rehabilitation-focused juvenile justice system to a punitive system, pledging safety of the country over the individual. In doing so, conservative reformers rejected the idea that adolescents should be held any less responsible for a criminal act as an adult.\(^49\)

This period of public hysteria led to multiple legislative “crackdowns” across the nation. The boom in the prison industrial complex showed an increase in incarceration from 330,000 people to 1.5 million people between 1980-1995, and the juvenile justice system was no exception.\(^50\) Beginning in 1976, 45 states made it easier to transfer juvenile offenders into adult criminal court.\(^51\) 31 states implemented mandatory minimum sentencing for juvenile offenders. 47 states modified or removed the confidentiality of juvenile court, making records and proceedings more open to the public. 22 states increased the direct role of each offender’s victims within the court proceedings.\(^52\) As a result of these reforms, the number of juveniles


\(^{50}\) Lynch and Sabol, “Did Getting Tough on Crime Pay?” 1.


\(^{52}\) Ibid.
sent to adult prisons increased by 48% between 1979 and 1984.\textsuperscript{53} Between 1979 to 1982, the number of incarcerated juveniles increased by 6,178. 93% were minority juveniles. In 1985, two-thirds of U.S. training schools were deemed overcrowded.\textsuperscript{54} These changes demonstrated a clear shift away from “indeterminate sentencing,” whereby courts view the individual holistically, including sociocultural and developmental factors when sentencing, towards “determinate sentencing” which holds the rhetoric that regardless of age, all individuals should be held to the same standard of culpability.\textsuperscript{55} With an increase of nearly 68% of juvenile offenders transferred to adult criminal court between 1988-1992, the entire ideology of creating a distinct line between how juvenile and adult criminals are treated essentially became moot.\textsuperscript{56}

**SECOND GENERATION REFORMERS: NEUROSCIENCE IN COURT**

As the “tough on crime” era, filled with punitive laws which placed priority on societal safety over individual rehabilitation, came to a close, second generation reformers began to push back.\textsuperscript{57} This shift can be seen most clearly through the lens of the controversial debate surrounding juvenile offenders and capital punishment. Between 1973 and 2004 there were a total of 228 accounts of juveniles sentenced to execution. Of these, 14% resulted in execution, while 86% were either reversed or commuted.\textsuperscript{58} In 1988, the Supreme Court heard the case *Thompson v. Oklahoma* and

\textsuperscript{53} Lawrence & Hemmens, “History and Development of the Juvenile Justice Process,” 97.
\textsuperscript{54} Ibid.
\textsuperscript{55} Ibid, 34.
\textsuperscript{56} Feld, “The Transformation of the Juvenile Court—Part II: Social Structure, Race, and the “Crack Down” On Youth Crime,” 357.
\textsuperscript{57} Lawrence & Hemmens, “History and Development of the Juvenile Justice Process,” 34.
\textsuperscript{58} Ibid.
ruled that under the 8th and 14th Amendments against cruel and unusual punishment, it was unconstitutional to execute a juvenile under the age of sixteen. However, in the following year, the Court held that it was not unconstitutional to execute a juvenile offender if they were sixteen or seventeen in Stanford v. Kentucky. By 1994, the height of the “tough on crime” era, a Gallup Poll found that 72% of the public were in favor of the death penalty if a “teenager who commits a murder and is found guilty by a jury.” At the turn of the century, there were twenty states that authorized capital punishment of juveniles that are eighteen or over, nine states for juveniles age sixteen or over, five states for juveniles seventeen or over and six states that did not specify a minimum age. In 2005, the case Roper v. Simmons appeared before the Supreme Court where they ruled that sentencing a juvenile (age 18 or younger at the time they commit the crime) is considered cruel and unusual punishment, thereby violating both the 8th and 14th Amendments. Within this case, neuroscience was explicitly cited in order to establish differences in adolescent and adult brain maturing, stating juvenile’s “lack maturity, increased impulsivity, and limited judgment; increased vulnerability and susceptible to external pressure and negative influences; and a personality structure that is less fixed and more open to change.” This breakthrough ruling set a precedent of incorporating neuroscience in the legal sector. Within the trial, the court called upon the Supreme Court decision in 2002, Atkins v. Virginia in which the court ruled that it was considered to be cruel and unusual punishment to

60 Ibid, 35.
61 Ibid, 102.
62 Ibid, 34.
63 Ibid, 35.
execute people with intellectual disabilities. In the *Roper v. Simmons* case, social scientists were used for the first time to demonstrate similarities between the brains of adolescents and those with intellectual disabilities, marking a distinct step forward into the generation of using neuroscientific evidence to shape juvenile policy reform. Equipped with this information, the majority of justices ruled in favor of heeding the advice of social scientists and the general political climate of justice reform. However, the close 5-4 ruling included three justices who gave statements of dissent. In one notable dissent, Justice Scalia argued that the utilization of the brain science research, that much of the case was built upon, was a “selective and incomplete reading of social scientists’ conclusions.” Nonetheless, this ruling was a monumental step forward in the reformation of the juvenile justice system that now acknowledged more complete neuroscientific research.

Following the decision in *Roper v. Simmons*, the usage of neuroscientific research to influence courtroom decisions exploded. In fact, between 2005 and 2011 a study found that the citation of neuroscience in judicial opinions tripled. On the national stage, neuroscience research was used in two prominent Supreme Court decisions regarding juvenile justice. In 2010, the Court heard the case *Graham v. Florida* and ruled that no juvenile could be sentenced to life without parole for a non-homicide offense. The next, in 2012, *Miller v. Alabama*, the Court abolished statutes

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66 Ibid.
67 Ibid.
that require courts to sentence juvenile offenders convicted of murder to life without parole. Instead, life without parole sentences for juveniles became reserved only for only the rarest of juvenile offenders.\textsuperscript{70} Four years later, in 2016, the Court ruled in the case \textit{Montgomery v. Louisiana}, saying Miller would apply retroactively to all juveniles who were given life without parole.\textsuperscript{71} These influential national reforms not only represented the progressive movement trying to undo the punitive laws enacted in the “crackdown” era but also marked the beginning of the progressive ways neuroscientific evidence can shape how juvenile offenders were handled in the United States.

\textbf{NEUROSCIENTIFIC UNDERSTANDING OF THE ADOLESCENT BRAIN}

In the early 2000’s, advances in scientific technology, including improvements in magnetic resonance imaging (MRI), have allowed neuroscientists to better understand the regional morphology and function of the human brain.\textsuperscript{72} Within this, a particular emphasis was placed on better understanding the adolescent brain, as many questions were still unanswered about this influential period of development. In looking at this period of brain maturation, scientists hoped to better understand this period of high plasticity and attempt to map ‘normal’ development in different regions of the brain. In doing so, connections could be made between developing

\textsuperscript{70} Scott, Grisso, Levick, and Steinberg, “The Supreme Court and the Transformation of Juvenile Sentencing.”
\textsuperscript{71} Ibid.
brain regions and adolescent behaviors (such as poor executive functioning skills or increased risk-seeking behavior). Such data could then be used to re-examine both the reasons juveniles have the highest rates of crime, as well as provide insights on how to better shape the criminal justice system.

**STRUCTURAL CHANGES**

With new advancements in neuroscientific understanding, the term “adolescence” began to shift.73 While adolescence was often considered to include puberty and teenage years, recently investigators reconceived the age span of adolescence, to be 10-24 years old as brain maturation can be seen well into early adulthood.74 During this stage, the adolescent brain undergoes a massive “rewiring” process. In fact, the adolescent stage of brain development has the highest rate of developmental changes than any stage other than infancy.75 This process of neuronal plasticity involves major renovations of the neurocircuitry where the acquisition of new skills is forged, refined or weakened. Principle components of this neuronal plasticity during adolescence include neuronal rewiring, dendritic pruning, and environmental exposure, particularly within the brain stem, cerebellum, occipital lobe, parietal lobe, frontal lobe, and temporal lobe.76 The process of myelination plays a crucial role in synaptic plasticity as it forms an insulating coating on neurons and allows for strengthened and more efficient communication between neural cells. This

74 Ibid.
75 Ibid.
76 Ibid.
‘rewiring’ process allows for adolescents to learn and adapt in order to further their development of independence; however, the instability of neuronal connection during this stage of development also leaves the brain severely vulnerable to making “improper decisions.”

During this period, if an individual experiences neurotoxic insult, such as trauma, chronic stress, or drug abuse, there could be detrimental effects on brain maturation.

By utilizing MRI technology, neuroscientists in the last 20 years have attempted to pinpoint the four major structural changes undergone in the maturation of the adolescent brain. The first indicates the presence of synaptic pruning, or the elimination of neurons and synapses to increase neuronal transmission efficacy, as shown by the substantive decrease in grey matter in the prefrontal regions of the brain. Synaptic pruning, which occurs primarily in the pre-adolescence and early adolescence period and is partially responsible for the improvements in cognitive abilities and logical reasoning. The second structural change is in the activity of the dopamine (DA) neurotransmitter, particularly around puberty. It was found that within the pathways that connect the limbic system and the prefrontal cortex, there is a substantial change in the density and distribution of DA receptors. This pathway links the emotional processing of reward and punishment completed in the limbic system with the logical reasoning and executive functioning processing center of the prefrontal cortex. Early adolescence marks the highest rate of dopaminergic activity.

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77 Arain, Haque, Johal, Mathur, Nel, Rais, Sandhu, and Sharma, “Maturation of the Adolescent Brain.”
78 Ibid.
79 Steinberg, “Should the Science of Adolescent Brain Development Inform Public Policy?”
80 Ibid.
in any developmental stage and indicates a connection between DA and sensation seeking, as DA is linked to the ways in which humans’ experience pleasure. The third structural change occurs in the form of an increase in white matter in the prefrontal cortex throughout adolescence. This process is largely driven by the myelination of neurons where synaptic efficiency is increased as a result of the formation of a fatty myelin coating along the neuron. In contrast to the reduction of grey matter within the prefrontal cortex, which occurs in pre/early-adolescence, a study using longitudinal MRI found that the increase of white matter in the prefrontal cortex occurs up to age 24. As this process transpires over many years, it promotes underdeveloped high order cognitive functioning such as planning ahead, weighing risks and rewards and making complicated decisions, among others that would normally occur in a fully developed adult prefrontal cortex. Finally, the fourth structural change in the adolescent brain is an increase in the strength of connections in the pathway that connects the limbic system and the prefrontal cortex. This increased connectivity allows for more efficient communication between both the emotional processing areas in the limbic system and the self-control regions within the prefrontal cortex. Thus, this connection is critical for emotional regulation. Similar to the increase in white matter in the prefrontal cortex, the development of anatomical connectivity between the limbic system and the prefrontal cortex continues well into late adolescence. Accordingly, when an adult and teenager’s brains are compared, studies have shown much more extensive myelinated

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82 Steinberg, “Should the Science of Adolescent Brain Development Inform Public Policy?”
83 Ibid.
84 Ibid.
85 Arain, Haque, Johal, Mathur, Nel, Rais, Sandhu, and Sharma, “Maturation of the Adolescent Brain.”
86 Steinberg, “Should the Science of Adolescent Brain Development Inform Public Policy?”
connections in the fully developed adult brain. These substantial anatomical differences between adolescent developing brains and more fully formed adult brains illustrate a large number of structural changes that occur during this period of development.

FUNCTIONAL CHANGES

Functional magnetic resonance studies (fMRI) have also been utilized in order to better understand how the brain works. In one study, the brain of adults and adolescents were compared to ascertain the differences in their ability to self-regulate, control intense emotions or impulses and delay gratification. It was found that adults are able to utilize a wider network of brain regions in order to implement functions of self-control as compared to adolescents. In this way, more fully developed adult brains are able to spread out the task, allowing more brain regions to share the load and not overtax certain regions. Another important functional change is the way in which adolescent brains respond to rewards. In one study, adolescents and adults were shown a rewarding stimulus such as a happy face or pile of coins, and then were asked to complete a game. Researchers were able to track activity in their brain as they completed this task and found that in adolescent brains, the reward centers were more activated than both children and adults. This demonstrates adolescent’s heightened predisposition to engage in risky behaviors, as they overvalue the anticipation of the reward. Additionally, this phenomenon has been

87 Steinberg, “Should the Science of Adolescent Brain Development Inform Public Policy?”
88 Ibid.
89 Arain, Haque, Johal, Mathur, Nel, Rais, Sandhu, and Sharma, “Maturation of the Adolescent Brain.”
90 Steinberg, “Should the Science of Adolescent Brain Development Inform Public Policy?”
found to be even more pronounced when adolescents are in a group of friends.\textsuperscript{91}

Finally, a third functional change in brain activity during adolescence was found to be an increase in simultaneous involvement of multiple areas within the brain in response to emotionally arousing stimuli. In early adulthood, as discussed, there is less connectivity between different brain regions, and as such, it makes it difficult for adolescents to properly modulate their impulses, like comparing the risk and reward, in response to being emotionally aroused.\textsuperscript{92} In other words, the structural changes could underscore the observed functional changes and vice versa.

\textbf{“HOT” VS. “COLD” PROCESSING}

These neuroscientific advancements offer many insights into the timeline of ‘normal’ adolescent brain development. However, when trying to convert this understanding into formal cutoffs between adults and juveniles within society, the conversation became increasingly complicated. For example, in the aforementioned \textit{Roper v. Simmons} case, which ruled that juveniles were no longer able to receive capital punishment, Judge Scalia issued a dissenting decision that if juvenile brains are matured enough to make decisions about abortion, then they should also be held accountable for their decision to commit a crime.\textsuperscript{93} This raised important questions about how the brain responds to different types of decision-making. In fact, neuroscientists have theorized that this difference can be broken down into two

\footnotesize{\textsuperscript{91} Steinberg, “Should the Science of Adolescent Brain Development Inform Public Policy?”
\textsuperscript{92} Ibid.
\textsuperscript{93} Scott, Grisso, Levick, and Steinberg, “The Supreme Court and the Transformation of Juvenile Sentencing.”}
pathways: “hot” and “cold” cognition.\textsuperscript{94} Hot cognition encapsulates behaviors that are completed during high emotional arousal or conflict, which is often associated with situations where adolescents enact their riskiest behavior. In contrast, cold cognition occurs during instances of less emotional arousal. A study that examined adolescent maturity and the brain found that adolescents perform very poorly under pressure as compared to adults, and are much more likely to make risky decisions under pressure.\textsuperscript{95} Clearly, there are obvious differences between an adolescent making a medical decision, like abortion, which require a minimum waiting period and consultation with an adult (whether a parent, healthcare provider or judge), and risky decisions such as committing a crime.\textsuperscript{96} Therefore, adolescent brains are much more volatile in situations of high-stress or “hot” cognition, and as such, they are particularly susceptible to committing crimes compared to adults with more fully developed.\textsuperscript{97}

**NATURE VS. NURTURE**

Even with the growing knowledge base regarding adolescent brain maturation, there remain gaps in understanding and disagreements and misconceptions in the scientific and general public. There is still little understanding of the effects of nature versus nurture in the development of the human brain.\textsuperscript{98} An MRI study looking at neurocircuitry and myelination during adolescence, suggests that many of the

\textsuperscript{94} Arain, Haque, Johal, Mathur, Nel, Rais, Sandhu, and Sharma, “Maturation of the Adolescent Brain.”


\textsuperscript{96} Steinberg, “Should the Science of Adolescent Brain Development Inform Public Policy?”

\textsuperscript{97} Ibid.
developments within the central nervous system (CNS) are transcriptionally regulated by sex hormones, which are particularly increased during puberty. These findings are also conceptually reflected in the understanding that peak human fertility occurs between the ages of sixteen to seventeen and sex hormones drastically increase during this time. At the onset of puberty, there is a high-frequency gonadotropin-releasing hormone (GnRH) release, disinhibiting and activating the GnRH neurons, which then lead to gametogenesis and an increase in sex hormone secretion. Sex hormones such as estrogen, progesterone, and testosterone have been found to be critically involved in the process of neuron myelination. This increase in sex hormones creates changes in reward sensitivity within the limbic system, as mammals become sexually active and their behavior is more directed towards the expectation of pleasure. In other words, “nature,” or the biological, genetically programmed and predetermined brain maturation plays a role within the development of the human brain. However, it is impossible to determine how much of this development is induced by environmental factors. For example, some theorists believe that is it plausible that the observed structural changes in the prefrontal cortex are actually in response to experience that demand self-control. In other words, environmental (“nurture”) demands where adolescents must exercise certain prefrontal controlled skills, actually cause the development of the prefrontal cortex, not solely biological pre-programmed development (“nature”). At this point, it is unclear which brain

98 Steinberg, “Should the Science of Adolescent Brain Development Inform Public Policy?”
99 Arain, Haque, Johal, Mathur, Nel, Rais, Sandhu, and Sharma, “Maturation of the Adolescent Brain.”
100 Ibid.
101 Ibid.
102 Ibid.
103 Ibid.
104 Ibid.
developments can be attributed to biology or environmental factors; it is only understood that both play critical roles throughout the adolescent stage of development.

**EFFECT OF NEUROTOXIC INSULT ON THE BRAIN**

The effect of neurotoxic insult, such as trauma, has been widely studied as it has shown to have “detrimental effects on adolescent brain functioning.”\(^{105}\) It was found that a staggering 75% of adolescents involved in the juvenile justice system were victims of traumatic events. In addition, a recent study examining youth detention “found that over 90% of youth had experienced at least one trauma, 84% experienced more than one trauma, and over 55% reported being exposed to trauma six or more times.”\(^{106}\) Strikingly, neuroscientists have been able to uncover actual structural changes in the brains of individuals who have experienced trauma. In fact, areas in the brain that play critical roles in emotional regulation, such as the amygdala, hippocampus, and the prefrontal cortex, have been found to be dramatically affected by early life adversity.\(^{107}\) For example, a study reported that there was an association between the experience of childhood poverty and smaller hippocampal volumes. Childhood stress and emotional maltreatment have been found to be related to the development of smaller volumes of prefrontal cortex, and therefore, poorer ability to exercise executive functioning skills. In contrast, within


the amygdala, children that experienced adverse life effects showed an increase in reactive response to emotional faces, as well as the inability to suppress amygdala activity during the experience of negative emotions. Finally, adverse early life experiences have been linked to an increase in activation of the hypothalamus-pituitary-adrenal (HPA) axis. This activation leads to the release of corticosteroid hormones from the adrenal glands in the brain. The enhanced activation of this pathway has been shown to cause increased stress-responsiveness. With the decrease in the functioning of the prefrontal cortex and hippocampus, combined with the enhanced activation of the amygdala and HPA-axis resulting in increased fear learning and expression, individuals experience severely impaired in emotional regulation. As discussed above, the adolescent brain undergoing plasticity already displays limited ability to exercise their prefrontal and amygdala emotional regulation pathways, however, in an individual who has experienced trauma, their abilities could be that much more incapable.

**EFFECT OF INCARCERATION ON THE BRAIN**

In addition to the growing knowledge base of the adolescent brain in the context of why juveniles are predisposed to committing crimes, there is also continued research looking at the cognitive effects of incarceration. One study looked at cognitive functioning (including emotion regulation, cognitive control, and

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109 Ibid, 17.
emotion recognition) in 197 incarcerated males aged sixteen to eighteen.\textsuperscript{110} An initial pre-test was administered and one group was assigned treatment of cognitive behavioral therapy/mindfulness training (CBT/MT) and the other was a control group. After four months, participants showed significant performance decline in all variables of cognitive functioning, although there was marginally less decline in emotional regulation in the group assigned to CBT/MT. The study showed that incarceration worsens cognitive functioning, a known risk factor for the likelihood to commit a crime. In other words, the act of incarcerating individuals leaves them at an increased position to commit future crimes.\textsuperscript{111}

**IS NEUROSCIENCE READY FOR COURT?**

As understanding of the adolescent brain extends, a simple conclusion to the question of brain maturity is that there is no concrete time by which a brain is considered fully developed during adolescence. For example, as illustrated above, basic cognitive functioning skills such as intellect develop in mid-adolescence, whereas emotional and social maturity does not fully mature until well into late-adolescence or early adulthood. Again, however, these categories are vague and subject to wide variances based on sex, trauma and other biological alterations. For these reasons, it is particularly difficult to shape this neuroscientific understanding into concrete cutoffs, ready to be transferred into public policy.\textsuperscript{112}


\textsuperscript{111} Umbach, Raine, and Leonard, “Cognitive Decline as a Result of Incarceration and the Effects of a CBT/MT Intervention: A Cluster-Randomized Control Trial.”

\textsuperscript{112} Steinberg, “Should the Science of Adolescent Brain Development Inform Public Policy?”
Neuroscientific understanding has developed exponentially in the past 25 years. However, there are still many unanswered questions surrounding the adolescent brain. Neuroscience has been used most notably over the last 20 years in notable Supreme Court cases including *Roper v. Simmons*, *Graham v. Florida*, and *Miller v. Alabama*.\(^{113}\) Dr. Nita Farahany, a bioethicist from Duke University, tracked the rise in the usage of neuroscience evidence in the United States. Judicial opinions that utilized neuroscience evidence between 2005 and 2011 more than tripled.\(^{114}\) In 2017, neuroscientists reported they were able to accurately use fMRI scans to predict the likelihood that inmates would commit another crime once they were released from prison. They did so by looking at brain activity during an impulsivity test and found that those who displayed results indicating high impulsivity were almost two times more likely to re-offend within four years. Later, however, other researchers reanalyzed the results and concluded they did not show the correlation as previously advertised.\(^{115}\) In these situations, it both indicates the incredible strides that neuroscience has taken in informing public policy, as well as the fact that this research is still very premature.

Some experts strongly believe that neuroscience should not be informing legislative changes as there is so much that is still unknown, and different interpretations of results could lead to regression in reform. Neuroimaging, to this point, has suggested a “normal” bound of brain maturation. However, it has not shown a definitive ability to understand each particular individual completely. It is then difficult to fit what little individual information is known about the person into

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\(^{114}\) Miller, “Neuroscience is Getting its Day in Course, Whether it’s Ready or Not.”
the context of legal culpability in the courtroom. Additionally, scientists are still unable to definitively draw a correspondence between a particular brain region and the behavior associated with it, as many behaviors draw from a wide network of brain systems. Not only is there no definitive correlation, but it is nearly impossible to simulate real-world brain activation while using a scanner in a lab-based setting.\textsuperscript{116} In other words, researchers indicate that “maturity is a complicated process that cannot be determined with a brain scan alone, nor can the scan of one adolescent, or even a cohort of adolescents, be extrapolated and applied to the whole population of adolescents.”\textsuperscript{117}

Many neuroscience researchers want to emphasize to the public that at this point, there is no way to use brain scans or any other technology to “determine guilt or innocence, decide criminal sentences or definitively assess risk and needs...but there are plenty of well-supported scientific findings that could make a real difference in our correctional system right now.”\textsuperscript{118} One expert, Dr. Joshua Buckholtz, the director of the Systems Neuroscience of Psychopathology Laboratory at Harvard University, actually states that he fears the way in which his research is used in the courtroom. He continues saying, "the most important of them is the group-to-individual-difference problem. When we do our studies, we collapse the individual differences across all the data. And, in doing so, we can't, on the basis of a general

\textsuperscript{115} Miller, “Neuroscience is Getting its Day in Course, Whether it’s Ready or Not.”
\textsuperscript{118} Donald Tong, “Brain Science Should Be Making Prisons Better Not Trying to Prove Innocence,” Theconversation.com, November 1, 2017, accessed January 10, 2019,
trend, go back to an individual brain and make any claims about that person. It's a
nuance that often escapes the legal system.”¹¹⁹ This fear is echoed by many of today’s
top neuroscience researchers who are afraid that the usage of neuroscience in
courtrooms has surpassed true neuroscientific understanding.

With the sudden rise of the usage of neuroscientific understanding in the
courtroom, there are many potential negative repercussions that could amount from
such aggressive usage of a premature knowledge set. As scientists further uncover
adolescent’s predisposition to commit rash decisions, some advocates may use that
information to say that adolescents should be locked up for longer periods of time
when they are first caught, as they are clearly too dangerous to be in the public or
even under community supervision.¹²⁰ In addition, in the case of teenage parents,
recent neuroscience advancements could be used to shape policy that removes the
rights of teen parents as they are not developmentally ready to take care of their child.
In instances such as these, the same neuroscience advancements that are used by
policy advocates pushing for reform within the juvenile justice system have been used
by other advocates pushing opposing agendas.¹²¹

¹¹⁹ Kayt Sukel, “Beyond Sentencing: How Neuroscience Has Already Changed the Legal
http://dana.org/News/Beyond_Sentencing__How_Neuroncience_Has_Already_Changed_the_Legal_System/
¹²⁰ “Using Adolescent Brain Research to Inform Policy, a Guide for Juvenile Justice
¹²¹ Ibid.
HOW SHOULD NEUROSCIENCE BE USED IN THE CRIMINAL JUSTICE SYSTEM

The question then arises, how can this ever-growing pool of information be used modestly and strategically in the realm of public policy, specifically in the context of the criminal justice system? In response to such questions, some believe that “brain science should be making prisons better, not trying to prove innocence.”\(^{122}\) This idea accurately encapsulates the fact that neuroscience, to date, cannot and should not be applied to individuals and trying to judge guilt. However, this argument should not discount the many ways in which neuroscience has the power to shape many other aspects of the criminal justice system. One of the ways that neuroscience can be modestly incorporated into policy is to use the “solid” research, or research that has been robustly supported, to spark change in the areas where current practices widely vary from the academic ideology.\(^{123}\)

SCIENCE VS. PRACTICE

Despite all of the neuroscientific discoveries that have been made in the past 25 years, there is still a significant gap in the actual practice and implications of such understanding. One of the clear examples discussed in detail later in this essay is the arbitrary age limit set to juvenile jurisdiction. As the neuroscientific community has agreed upon for years, some of the most critical cognitive skills are not developed until as late as 25 years old. However, in most states, the legal age of an adult is eighteen years old. While changing this age has been heavily debated, and will most

\(^{122}\) Tong, “Brain Science Should Be Making Prisons Better Not Trying to Prove Innocence.”
\(^{123}\) Ibid.
likely take many more years for the criminal justice system to adopt this understanding into new reforms, one of the clearest disparities between science and practice are the juvenile offender transfer laws. In the United States, there are three mechanisms used to transfer youth into the adult system. The first is the judicial waiver, by which judges can use their discretion to waive their jurisdiction over an individual case. The second mechanism is legislative exclusion, or “automatic transfer,” whereby, depending on the particular state’s laws, juveniles who commit certain crimes are automatically prosecuted in adult court. Finally, the third mechanism for youth transfer is prosecutorial discretion, or “concurrent jurisdiction,” which gives the authority to prosecutors to decide whether the juvenile offender should be tried in adult or juvenile criminal court. Some states have further transfer laws including “once an adult, always an adult” rule, meaning if a juvenile offender was once prosecuted for a crime in adult criminal court, in any future court proceedings, the individual would be automatically considered an adult, regardless of the severity of the crime. Even without the recent innovations in the field of neuroscience, from its inception, the juvenile justice system’s purpose was to recognize the difference in cognitive functioning and therefore culpability between juvenile and adult offenders. The transfer laws completely negate that understanding, by making any juvenile at risk of easily being transferred to adult court. In fact, statistics from fifteen states compiled in 2015 found that juveniles who were

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transferred and prosecuted in adult criminal court had a recidivism rate of 82% versus only 16% of the adult offenders were rearrested after release. In addition, studies have shown that juveniles who were appropriately tried in juvenile court, heavily utilized and benefitted from the specially designed programs and resources.

Adding to the list of areas where practices in the juvenile justice system stray from neuroscientific understanding, research has shown the harmful cognitive effects associated with imprisonment. However, length prison systems are still thought to be appropriate “rehabilitation.” If the theoretical mission behind the criminal justice system is to rehabilitate offenders and provide them with tools to reintegrate into society, the scientific data clearly shows that incarceration does the exact opposite. In fact, a study has found that juveniles actually experience cognitive decline as a result of incarceration, and as such, are actually more vulnerable to committing additional crimes. The study also indicates that this cognitive decline can be slightly mitigated by the use of CBT/MT intervention. This finding again demonstrates the practical ways in which neuroscience can be used to inform how to better help juvenile offenders.

The validity of eyewitness testimony in court has also been largely called into question with emerging neuroscientific data. Recent studies have found that eyewitness testimony is actually “relatively unreliable.” For example, in a high-stress environment, individuals are less able to accurately recall details of a potential assailant. This has been found to be even truer when witnesses try to identify features

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127 Scialabba, “Should Juveniles Be Charged as Adults in the Criminal Justice System?”
128 Ibid.
130 Ibid.
131 Ibid.
of offenders that are a different race than the individual testifying. Additionally, when someone repeatedly recalls a memory, the memory undergoes a process of reconsolidation, which has been shown to alter details, “effectively becoming a new memory.”\(^{132}\) Even though different behavioral and neuroscientific tests have shown the somewhat unreliable nature of eyewitness testimony, it is still heavily used within the courtroom.

CONNECTICUT AS A CASE STUDY

To explore the remarkable ways that neuroscience can advance public policy and potentially lead to a better overall juvenile justice system, I will use Connecticut as a case study. Over the course of 30 years, Connecticut has gone from having one of the worst juvenile justice systems in the United States to being a leader in juvenile justice reform. To continue these progressive neuroscientific informed efforts, Connecticut will be one of the first states in the country to attempt to extend juvenile court jurisdiction to adolescents 21 and under. While Connecticut will serve as a model to unpack the direction neuroscience can take us, it is important to note that the state has not always been such a pioneer.\(^{133}\)


HISTORICAL OVERVIEW OF JUVENILE JUSTICE IN CONNECTICUT

In the early 1990’s, Connecticut was home to one of the most troubled juvenile justice systems in the country. At this time, there was virtually no alternative programs for juveniles, such as in home-therapy or community supervision, in lieu of committing a juvenile to a state-funded residential facility. In addition, Connecticut was one of only three states in the U.S. that tried sixteen- and seventeen-year-olds in adult court, even for only simple misdemeanors. These young adolescents tried in adult court were imprisoned with much older adults, as well as burdened with the lifelong mark of a criminal record. In 1993, the Connecticut Civil Liberties Union filed a class action lawsuit challenging the state’s treatment of youth in pre-trial detention centers. The case centered around the testimony of thirteen-year-old Emily J., exposing many shocking truths about the state of juvenile detention centers in Connecticut. Emily J. was arrested for truancy. However, as she awaited her trial, she spent months in detention, often spending 21 hours per day confined to her cell with two other girls. In the proceedings of the case, it became clear that the three detention centers in New Haven, Bridgeport, and Hartford, who held juveniles ages fifteen and younger, were consistently overcrowded, unsanitary, neglectful, punitive and overall unconstitutional. Between the three detention centers, there was a capacity of 64 youths per night. However, on average they were housing 114 youths


135 Ibid, 9.
136 Ibid, 5.
per night (sometimes more than 130), resulting in many juveniles sleeping on the
floors and doubling/tripling up in cells designed for one.\textsuperscript{138} Many instances of cruelty
came to light throughout the case, including multiple accounts of juveniles being
locked in solitary confinement for days on end for small misbehaviors, children being
made to go to the bathroom on the floor of their cells if guards did not check on them,
as well as multiple accounts of sexual and physical abuse.\textsuperscript{139} The detention centers
were found to be entirely ill-equipped to handle educational and mental health
services to the juveniles. Not only was it extremely challenging to arrange for a
juvenile to get proper screening for mental health issues and intellectual disabilities,
but in some instances, juveniles did not even receive their previously prescribed
medication.\textsuperscript{140} There were also reports that detained children were receiving only two
hours per day of educational services, which violates federal requirements. Out of the
3,000 youths placed in Connecticut detention centers, the majority had only been
accused of small misdemeanors or other minor status offenses which would not even
be illegal for adults.\textsuperscript{141} With no separation between more violent juveniles and less
violent juveniles, nor any separation based on age, this lawsuit shed light on an
incredibly broken system. The State initially fought the Emily J. lawsuit, but finally,
in 1997, the State of Connecticut settled in Federal district court. The settlement
mandated five years of federal court supervision, the reduction of overcrowding,
improvement of education and mental health services, recreation and increased
funding for alternative programs to reduce detention for youths involved in less

\textsuperscript{138} Mendel, “Juvenile Justice Reform in Connecticut: How Collaboration and Commitment
Have Improved Public Safety and Outcomes for Youth,” 5.
\textsuperscript{139} Ibid.
\textsuperscript{140} Ibid.
\textsuperscript{141} Ibid.
serious crimes. This was a significant step forward in juvenile justice reform in Connecticut, and vastly improved many of the conditions of pre-trial detention centers. However, the issues that plagued the Connecticut system spanned well beyond just the pre-trial detention centers.

In 1995, as hysteria grew nationally surrounding dangerous juvenile offenders, often described as “super predators,” Connecticut, like many other states at the time, introduced a reform bill prioritizing public safety over the juvenile’s rehabilitation. Much of the text of the bill addressed conservative political concerns and focused on public safety, broadening the list of offenses that require the automatic transfer of juveniles to adult court as well as giving prosecutors discretion to transfer more cases. Finally, the bill also relaxed confidentiality laws in juvenile courts so families of victims could learn about the sanctions imposed on the offender. While the bill mostly followed conservative rhetoric of the time, there were also various reforms that favored a new wave of juvenile justice. Virtually all of the bill’s funding supported the expansion of alternative programs and interventions for youth. For the first time in Connecticut’s history, the legislature allocated substantial funding for non-residential and community programs to serve as alternatives to institutionalizing Connecticut’s juvenile offenders.

While it appeared that there was movement in the direction of creating a more cohesive and compassionate juvenile justice system in Connecticut, the feeling was short lived. In 1998, one year after the Emily J. settlement, fifteen-year-old Tabatha

143 Ibid, 11.
144 Ibid, 9.
Ann Brendle hanged herself while living in Long Lane School, a correctional facility in Middletown.\textsuperscript{146} Unfortunately, no class-action lawsuit was ever filed, and Long Lane faced minimal investigation until almost a year later. Tabatha, who had been sexually abused and neglected throughout her life, had attempted suicide on multiple occasions in Long Lane School, as well as at earlier child welfare placements. A report by The Child Fatality Review Board generally found the “counseling provided was simply insufficient to meet her [Tabatha] needs” and determined that Long Lane School’s conditions were generally “grossly inadequate.”\textsuperscript{147} After the tragedy, Long Lane came under intense scrutiny. It was found that the Long Lane School regularly used lockdowns and long-term solitary confinement. In 1997-98, there were 544 incidents of using physical restraints such as handcuffs and foot shackles to the bed (sometimes for hours), and there was essentially no suicide prevention protocol even though there were two suicide attempts per month on average.\textsuperscript{148} Like the detention facilities, Long Lane was extremely overcrowded, averaging 230 youths per night even though it was designed to have a capacity of 172. Additionally, 70% of juveniles at Long Lane had special education needs leaving them years behind in school; 50% were victims of abuse or neglect; 75% had a history of running away from home and most came from low-income families.\textsuperscript{149} Long Lane was not originally designed to deal with this low-risk, high-need population of juveniles and the staff had limited capacity to provide adequate mental health or social services.\textsuperscript{150} In 1998, the \textit{Hartford...

\textsuperscript{146} Ibid, 10.  
\textsuperscript{147} Ibid.  
\textsuperscript{148} Ibid, 6.  
\textsuperscript{149} Ibid.  
\textsuperscript{150} Ibid, 12
Courant was quoted describing the facility as “deplorable” and “neglect bordering on cruelty.”

Following this tragedy, in early 1999, the Connecticut Judicial Branch underwent a consolidation, bringing hope for juvenile justice reform in two significant ways. First, the Judicial Branch brought all of the juvenile detention, probation and alternative sanctions offices together creating a “hub” for new ideas in juvenile justice. The second was that William Carbone, formerly director of Connecticut’s Office of Alternative Sanctions, was put in charge of this new division. Carbone pledged to modernize the juvenile justice system, for the first time embracing research, data-gathering, and analysis to implement useful evidence-based practices. In response to the Long Lane School tragedy, Connecticut’s legislature approved funds for a new youth corrections facility for boys to replace Long Lane School in 2001. Unfortunately, John Rowland, Connecticut’s governor, rejected the recommendations to build therapeutic faculties or a network of smaller facilities, which were successful in Missouri. Instead, Rowland spearheaded a plan to create a training school to replace Long Lane that was modeled after Ohio’s maximum-security adult prison, even though it would not accommodate for the greater space needed for adolescent education. Shortly after the fast-tracked process, in August 2001, the Connecticut Juvenile Training school opened. Later, in 2004, it was uncovered that the contracting process for this new high-security facility had been rigged, which prompted the resignation of Governor Rowland, his chief of staff and

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152 Ibid.
153 Ibid.
154 Ibid.
the contractor.\textsuperscript{155} Rowland would later be sentenced to serve one year and a day in Federal Prison for conspiracy after accepting $107,000 worth of gifts and vacations from various people doing business in Connecticut.\textsuperscript{156}

Repeatedly, spanning from the 1990’s to early 2000’s, the Connecticut juvenile system found itself in state and national headlines for “unflattering and sometimes alarming” reasons.\textsuperscript{157} Despite this media attention, the juvenile justice system was still in severe disarray well into the 21st Century. While many of the conditions and programming inside state pre-trial detention facilities improved after the Emily J. settlement in 1997, Connecticut’s detention centers were still plagued with severe overcrowding in 2002.\textsuperscript{158} Improvements were made, including renovated facilities, hiring of counseling staff, staff training improvements, implementation of in-house medical systems, expansion of education/recreational programming, and new alternatives to detention programs began to open.\textsuperscript{159} Unfortunately, the issues of overcrowding continued to cause problems, with as many as 20 juveniles sleeping on the floor per night. Additionally, at the turn of the century, the judge in the Emily J. lawsuit ruled “children are not getting timely and adequate mental health services…[and] the evidence shows their conditions can and have worsened while they are being held in detention.”\textsuperscript{160} Children as young as ten could be detained for months at a time, even if they were only awaiting behavioral or mental health

\textsuperscript{157} Mendel, “Juvenile Justice Reform in Connecticut: How Collaboration and Commitment Have Improved Public Safety and Outcomes for Youth,” 11.
\textsuperscript{158} Ibid, 13.
\textsuperscript{159} Ibid, 11.
evaluations and placements. In fact, only 15% of youth confined in detention centers were accused of felonies; the majority were detained for misdemeanors (47%) or violations of probations (33%). In many cases, youths were detained because the “services they need are not available in the community.”

In addition to the pre-trial detention center, the new Connecticut Juvenile Training School (CJTS) was deemed a “dismal failure” from its inception in 2001. There were multiple reports about a lack of programming, as well as illegal treatment of the juvenile males in the CJTS. Similarly, the young girls still housed in Long Lane School were also subject to “alarming overreliance on seclusion” as well as inadequate suicide prevention protocols. In 2002, it was also found that similar to the pre-trial detention centers, the new Connecticut Juvenile Training School (CJTS) was primarily used for low-risk juvenile offenders. In March of 2002, for example, out of roughly 153 youth residents (average population), only 37 were guilty of violent offenses, and within that 21 were simple fights. A study conducted by the New England Juvenile Defenders Center was released in 2003, severely criticizing the rates at which juveniles are incarcerated. In this report, Connecticut was alarmingly found to have the highest juvenile incarceration rate in New England.

In addition to the small improvements within the pre-trial detention centers and the new training schools, the juvenile justice bill in 1995, along with the Emily J. settlement, allocated substantial funds for creating alternative approaches to juvenile

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161 Ibid, 11.
162 Ibid. 
163 Ibid, 12.
164 Ibid, 11.
reform such as non-residential and community programs.\textsuperscript{165} Connecticut quickly commissioned a variety of agencies to fill the much-needed void in the juvenile justice system. Until this point, very little research was conducted examining best practices for treating juvenile offenders, and many of the selected agencies had little experience. In 2000, Connecticut finally commissioned the Connecticut Policy and Economic Council to conduct an extensive analysis of the effectiveness of these new programs.\textsuperscript{166} A comprehensive report published in 2002 showed that out of the 22 agencies studied, only two alternative programs resulting in a significant reduction in recidivism rates. In fact, juvenile participants who took part in the new programming in 1999 actually showed higher recidivism rates than those who received none in 1994. Despite the new programming, studies showed that there were still significant gaps in mental health services. In many ways, despite the ten million dollars per year budget, the new alternative programming was uninformed about effective intervention techniques.\textsuperscript{167}

Even with the efforts to improve the juvenile justice system during the 1990’s, the justice system showed continued signs of corruption well into the 21\textsuperscript{st} century. While there were no significant positive changes within the system, the decrepit state of the juvenile justice system finally had the attention of major legislators in Connecticut. Between 2002 and 2012 Connecticut advocates and legislators worked tirelessly to improve the system, and throughout the decade, they succeeded in two

\textsuperscript{165} Mendel, “Juvenile Justice Reform in Connecticut: How Collaboration and Commitment Have Improved Public Safety and Outcomes for Youth,” 11.
\textsuperscript{166} Ibid, 12.
\textsuperscript{167} Ibid.
major ways: increasing the age of juvenile jurisdiction from fifteen to seventeen and ending the criminalization of status offenders.\textsuperscript{168}

In one decade, Connecticut went from being one of three states that’s juvenile jurisdiction was limited to fifteen and under, to raising the age to seventeen. Before this advancement, it was found that from 2002 to 2003, more than 12,000 sixteen- and seventeen-year-olds were tried as adults. Of those, 1,700 were put on adult probation, and on any given day there are upwards of 300 Connecticut juveniles in adult jail/prisons.\textsuperscript{169} In 2003, it was found that Connecticut had the largest population of juveniles under eighteen-year-olds held in adult jail/prison than any other state. In fact, Connecticut housed more juveniles in adult prisons than 29 other states combined.\textsuperscript{170} Not only did they have the highest rate of juvenile incarceration in adult prisons, but in a study conducted by the state found that 75% of juveniles sent to adult prisons received no rehabilitation services.\textsuperscript{171} Based on such alarming realities about the controversial age cut-offs, a group of leading advocates formed the Connecticut Juvenile Justice Alliance, which would take a crucial role in the reform movement.\textsuperscript{172}

A report emerged in 2004 indicating the financial burden raising the age of juvenile jurisdiction would put on Connecticut’s budget. The report estimated that raising the age would cost the state roughly $165 million between operating expenses and new construction costs. Even with this setback, the Alliance began their campaign to change the age of jurisdiction, and in 2005, they revealed the official

\textsuperscript{168} Mendel, “Juvenile Justice Reform in Connecticut: How Collaboration and Commitment Have Improved Public Safety and Outcomes for Youth,” 15.
\textsuperscript{169} Ibid, 12.
\textsuperscript{170} Ibid.
“Raise the Age” Connecticut campaign.\textsuperscript{173} This sparked a massive push, bringing together “key judges” and “mobilized families,” and the Alliance “fed stories to the media, and launched an all-out education and advocacy blitz to push the reform effort.”\textsuperscript{174} A sign of movement spurred after legislators heard the testimony of the mother of a seventeen-year-old boy who killed himself while being held in an adult prison. This prompted legislators to create a new panel, including many members from the Alliance, whose primary focus was to create a directive to raise the age.\textsuperscript{175}

**“RAISE THE AGE” PART I**

In 2007, a historic leap forward was made in Connecticut juvenile justice reform, as the state officially enacted the “Raise the Age” law. Based on the budget crisis in Connecticut, the proposal was stalled until a compromise was attained in 2009 whereby the change would occur in shifts. Starting in 2010 sixteen-year-olds would enter the jurisdiction of the juvenile court. Then beginning in 2012, seventeen-year-olds would follow. Following this historic event, “more than 8,000 youths have been spared prosecution in adult court as of June 30, 2012[LS2].”\textsuperscript{176} Shortly after this change, it was found that 39% fewer sixteen-year-olds were being rearrested compared to juveniles their age who had been tried as adults.\textsuperscript{177}

\textsuperscript{172} Mendel, “Juvenile Justice Reform in Connecticut: How Collaboration and Commitment Have Improved Public Safety and Outcomes for Youth,” 15.
\textsuperscript{173} Ibid.
\textsuperscript{174} Ibid.
\textsuperscript{175} Ibid.
\textsuperscript{176} Mendel, “Juvenile Justice Reform in Connecticut: How Collaboration and Commitment Have Improved Public Safety and Outcomes for Youth,” 15.
In response to the growing scientific research linking increased chance of future incarceration and juvenile incarceration, a massive effort was put forth to decrease the rate of mass incarceration especially for “status offenders.” The term “status offenders” refers to noncriminal acts that are considered to be unlawful only under juvenile jurisdiction of a minor, such as truancy, running away from home, etc. This was done in two major parts. In 2005, legislation was passed prohibiting the detention of juvenile offender for only the violation of probation or court order. Following, in 2007, specifying that virtually all status offenders should be handled non-judicially as well as allocated targeted services for status offenders and their families. Since these monumental changes, in 2008-09, it was found that 70% fewer juvenile status offenders were re-arrested for a delinquent offense than compared to 2006-07. Additionally, behavior has been found to improve both at home and in school.

Through these major reforms, Connecticut has made significant strides in reducing the rates of mass incarceration. In doing so, has become one of the most progressive states in the country in juvenile justice reform. In 2016, Connecticut had a 48 year low for crime rate, which has been consistently dropping faster than almost any other state in the U.S. Between the years of 2002 and 2011, the total amount of juvenile arrests has fallen by 48%, and Connecticut has become one of the top states in the country for its implementation of evidence-based treatments. Furthermore, more recently, these numbers have continued to decline, between 2009-2016 the total

number of arrests involving juveniles age 18 and under has dropped by 56%.\textsuperscript{181} By diminishing the number of juveniles being held in confinement, Connecticut has been able to transfer funding and allocate it to other alternative programming. These improvements were monumental steps in the reform movement. However, Connecticut’s fight to create a better juvenile justice system did not end there.

\textbf{“RAISE THE AGE” PART II}

\textit{“The bottom line is young people make mistakes. Treating them as adults in the criminal justice system is a disservice to them and to our society, impedes their potential, and opens them up to a life of crime instead of a life of learning. Through this legislation, we’re offering our young people who have made mistakes a greater chance at a decent and productive life.”}\textsuperscript{182}

\textit{- Governor Malloy, Speech at the University of New Haven, 2018}

Connecticut Governor Dannel Malloy was elected into office in 2010, after serving as a District Attorney for many years. Under the leadership of Governor Dannel Malloy elected in 2010, Connecticut underwent many reformist changes in the context of the criminal justice system. From repealing the death penalty, legalizing medical marijuana and passing some of the strictest gun laws in the country, Malloy attempted to create real change in the criminal justice system throughout his tenure.\textsuperscript{183} To learn more about effective juvenile justice practices,


Malloy decided to visit Germany, which incarcerates fewer people per capita than the United States, and yields significantly higher public safety. Most notably, within the Germany criminal justice system, adolescents ages 18-20 are still under juvenile jurisdiction.\textsuperscript{184} In fact, Germany has included youths ages 18-20’s under juvenile jurisdiction since 1953. Additionally, in Switzerland, juveniles up to 25 years old still fall under juvenile jurisdiction.\textsuperscript{185} Using this as inspiration, beginning in 2015, Governor Malloy announced his “Second Chance Society” initiative, aimed at “reducing the number of people going into prison and making it easier for those already in to get out and have a chance at a law-abiding life.”\textsuperscript{186}

\textbf{2015 LEGISLATIVE SESSION}

Following the “Second Chance Society” reformist philosophy, in November 2015, Governor Malloy spearheaded the second generation of “Raise the Age.” Grounded in the empirical evidence of the success in raising the age of juvenile court jurisdiction from age sixteen to eighteen, Malloy believed that the reforms should be taken one step further and proposed raising the age to 21, including provisions that for special confidentiality for individuals up to 25 years old.\textsuperscript{187} This proposal was primarily grounded in the emerging academic consensus in neurobiology and

developmental psychology that the human brain does not finish developing until the mid-20’s, leaving adolescents “more susceptible to peer pressure, less future-oriented and more volatile in emotionally charged settings.”\textsuperscript{188} This narrative illustrates that those within the age range of 18-25 years old are developmentally more similar to juveniles than adults, and as such, the criminal justice system should reflect that fact.\textsuperscript{189} In a speech on bail reform and juvenile justice, Malloy was quoted summarize the faults within the age constraints of the criminal justice system stating, “Let’s consider this: age within our laws and criminal justice system is largely arbitrary…You can commit a nonviolent offense at seventeen without a criminal record, but if you’re eighteen and you commit the same crime, it lasts a lifetime.”\textsuperscript{190} As Malloy embarked on this mission to raise the age and fix the arbitrary age practices within the criminal justice system, his efforts were supported by the empirical data of the success of the first raise the age and modern neuroscientific research. There was now bipartisan support for this type of juvenile justice reform. From progressive policy directors in the American Civil Liberties Union to more conservative figures like the Koch brothers, the political climate in the United States reflected Governor Malloy’s ideas of juvenile justice reform in the efforts to repeal many of the “tough on crime” policies of the former political era.\textsuperscript{191} Unfortunately, even with this change in political climate towards reform, Malloy’s first attempt at raising the age did not come to fruition. While this specific piece of legislation not pass, Malloy was able to get bipartisan support for a plan to reclassify simple drug

\textsuperscript{188} Schindler and Schiraldi, “Good Reasons to Raise Age for Juvenile Justice.”
\textsuperscript{189} Ibid.
\textsuperscript{190} Thomas and Pazniokas, “Malloy: Raise the Age for Juvenile Justice to 20.”
\textsuperscript{191} Ibid.
possession from a felony to a misdemeanor, eliminate mandatory minimum sentences for nonviolent drug possession, expedite parole hearings for people convicted of nonviolent crimes, simplify the pardon process and increase police accountability.192

In 2015, bipartisan support rallying around the idea of the reformist philosophy of the “Second Chance Society” began to emerge, however, the big undertaking of the “Raise the Age” initiative did not succeed. Despite this initial setback for this particular undertaking, the 2015 legislative session would only be the beginning of an ongoing fight to raise the age in Connecticut.193

2016 LEGISLATIVE SESSION

The following year, in January of 2016, Governor Malloy submitted a letter to the two Co-Chairs of the Juvenile Justice Policy and Oversight Committee (JJPOC), Connecticut State Representative Toni Walker and Secretary of the Office of Policy and Management Benjamin Barnes, outlining the “Implementation of the Second Raise the Age Initiative.”194 In this two page summary, Governor Malloy outlined his proposed legislation to “again raise the age of juvenile jurisdiction for young adults to include eighteen-year-olds beginning July 1, 2017, nineteen-year-olds beginning July 1, 2018, and twenty-year-olds beginning July 1, 2019.”195 Malloy’s letter acknowledged the instrumental role that the JJPOC played in orchestrating

193 Thomas and Pazniokas, “Malloy: Raise the Age for Juvenile Justice to 20.”
Connecticut’s primary “Raise the Age” initiative, and hoped that the group would again prepare a study to make recommendations on how to expand the juvenile justice system again. The letter went on to create a list of issues of relevance to the committee’s work, including an examination of accommodations that would be necessary for housing and transportation of this new group of young adults, appropriate new types of education requirements imposed in young adult populations, and new legislation surrounding confidentiality and expungement of records. Additionally, Malloy sought recommendations around the age of entry into the juvenile system in Connecticut, which was currently at age seven. Malloy hoped to re-examine this age, and look at whether the increase from 18 to 21 of juvenile jurisdiction should also spark change in the lower age requirement of the juvenile justice system. The Governor concluded his letter saying that with the help of the JJPOC the government could create a better justice system that “enables our young adults to avoid the permanent effects of a criminal record will reduce crime and will help our young people have a greater chance for success. It will enable them to have a chance to end employment, housing and go to school without carrying the weight of a permanent record.” He ended with a simple plea, stating, “It is the right thing to do.”

Following Governor Malloy’s initial letter to the JJPOC, votes on the plans to raise the age of juvenile jurisdiction from age 18 to 21, as well as eliminating cash bail for most misdemeanor charges, continued to be delayed through the end of the

196 Ibid.
197 Ibid, 2.
regular legislative session in 2016.\textsuperscript{198} Throughout the session, Malloy held news conferences and radio interviews almost daily, in the hopes of generating more support for his criminal justice reform plans. Although Malloy claimed that he had the votes to pass the legislation in the House and Senate, lawmakers said the issue was deadlocked at eighteen to eighteen votes in the Senate. In this case, Lieutenant Governor Nancy Wyman would be asked to break the tie in favor of the Malloy Administration, although voting never took place within the Senate as leaders were not sure if all of the 26 members would be present to place their vote. This particular legislation sparked a standoff between Republicans and Democrats.\textsuperscript{199}

The gridlocked position of Malloy’s legislation was driven by those who believed that the proposed bill could be dangerous, as well as many Democrats and other politicians were concerned that giving support to such law could be viewed as taking a “soft on crime” standpoint in the eyes of voters.\textsuperscript{200} In many instances, policy issues surrounding crime have been instrumental in deciding elections, most notably, in the famous case of Willie Horton, a black man who, in 1986, was released from a Massachusetts prison on a weekend furlough and during this time committed a brutal rape of a white woman and stabbed her boyfriend.\textsuperscript{201} Weekend furlough was a policy instituted as part of a plan to assist in the reintegration of prisoners back into society and is similar to that of Malloy’s efforts to facilitate prison re-entry in Connecticut.\textsuperscript{202} This example played on society’s emotional response to crime and both subconscious

\textsuperscript{199} Ibid.
\textsuperscript{200} Keating, “Democrats Fearful of Backlash if They Vote for Malloy’s Crime Bill.”
and conscious racism, and Horton’s image was used to incite fear and push for anti-reformist policy. During the 1988 presidential election, George H.W. Bush used the Horton’s case and created an attack ad that many viewed as racist, which painted his opponent, Governor Michael S. Dukakis of Massachusetts as soft on crime. Many observers believed this ad decided the presidential election in favor of Bush and whatever the intentions of the ad, encouraged race-based politics. This, in turn, forced many Democrats, like President Bill Clinton, to prove themselves as being tough on crime, “At the expense of a generation of African-American men and women who were locked up under tougher sentencing laws.”

In the case of Malloy’s plans of justice reform, many politicians were again fearful of making a decision to support such legislation and risk ruining their political careers during an election year. As such, this illustrates the complex ways in which policy reform, backed by academic research or not, has more to do with political climate than actual evidence of the best practices.

In Connecticut, Malloy’s “Raise the Age Part II” legislation was a central debate topic surrounding the idea of being soft on crime. Within the General Assembly in 2016, Democrats held majorities in the Senate (21-15) and the House (87-64), yet debates surrounding the bill remained heated and gridlocked as no dates were set for a special session vote. Senator Len Suzio of Meriden, a conservative Republican, said that Malloy’s proposal will definitely be a focus as he begins his third campaign against Democratic Senator Dante Bartolomeo after losing to Senator

204 Ibid.
205 Keating, “Democrats Fearful of Backlash if They Vote for Malloy’s Crime Bill.”
Bartolomeo in close elections in both 2012 and 2014. Bartolomeo also voted against the Second Chance bill in 2015 and also indicated that she planned on voting against it in 2016 as well. Suzio saw Malloy’s proposal as “a soft-on-crime issue, which is consistent with the Malloy administration, the victims don’t get a second chance—only the criminals.” Still others, like Representative John Hampton, believed that Malloy’s proposal did not consider victims of crimes, saying, “We need to be tougher on crime. I’ve been talking to a lot of victims of crimes who are concerned about this. Nobody is talking about the victims of these crimes. Certainly, I have not heard an outcry in my district for this initiative.” A Republican Representative from Shelton, Jason Perillo, was an avid adversary to Malloy’s initiative, released a campaign ad calling Malloy’s proposal “ridiculous” and vowing to work to defeat it. Perillo stated that Malloy has been “hell-bent on passing the bill that allows 20- and 21-year-olds to avoid the penalties for the felonies they commit...since citizens of that age can vote, serve overseas in a war, and sit on juries, they should also face the music for the crimes they commit.” A Malloy spokesman, Devon Puglia, responded to Perillo’s political ad saying it represents “politics at its worst...either he [Perillo] is purposefully misstating what the bill does, or just hasn’t taken the time to understand it.” In fact, as Puglia sought to correct Perillo’s comments, and said “studies show that the longer low-risk defendants are held in jail, the more likely they are to be re-arrested. We believe that’s a cycle we need to change. We estimate that it also costs the state roughly $58,000 per day to do, and since just last Monday, we estimate that jailing non-violent, pretrial, misdemeanor inmates cost us more than $500,000. If we

206 Keating, “Democrats Fearful of Backlash if They Vote for Malloy’s Crime Bill.”
207 Ibid.
208 Ibid.
209 Ibid.
don’t pass this bill, then we’ll also need to find another $15 million in budget savings.”

A conservative Democratic Representative Davis Alexander from Enfield indicated that there were “concerns for members on both sides of the aisle as far as getting elected.” However, despite Alexander’s fear of being labeled as soft on crime, he stated that “[Malloy’s] right on this one, and I’m not afraid to say it.” Alexander believed that I was “absolutely” easy to twist the issue to gain political momentum because of the emotional nature of the debate surrounding crime and public safety, saying that he thought “it’s sad that political opponents will make hay of this for political gain.”

Outside of members of the House and the Senate, individuals throughout the criminal justice system, from academics to attorneys, held distinct and often opposing opinions on Malloy’s proposal. During Malloy’s speech in 2016, former federal prosecutor and Superior Court judge Lloyd Macdonald interrupted the talk and explicitly cited the case of Willie Horton. Macdonald did this to demonstrate the immense “political price...for criminal justice failures,” as was the situation in the case of Willie Horton and Democratic nominee Michael Dukakis. Macdonald continued saying, “I think you need to be more nuanced rather than suggest that the answer to crime is to substantially decriminalize it or the very demographic responsible for it.” While many in the audience regarded these comments as condescending, Malloy responded by saying that Connecticut should look at juveniles that commit crimes not by looking “the other way,” but rather by “responding[ing]...
differently.”215 While Governor Malloy was able to maintain calm in defending his proposal, Macdonald’s comments illustrated the “political reality of criminal-justice reform: success if diffuse, measured in statistics about falling crime and recidivism rates; Failure is specific, embodied in stories like Willie Horton’s.”216 Jay D. Blitzman, the First Justice of Middlesex County Juvenile Court and founder of the Youth Advocacy Project and another member of the audience on this day, raised his hand to bring up a contradictory story to Macdonald’s example of Willie Horton. Blitzman told the story of Kalief Browder, a seventeen-year-old who was arrested for a charge of robbery with bail set for $3,000. Browder insisted on his innocence and adamantly refused to plead guilty in return for his release, which ultimately kept him in jail for three years, two of which were spent in solitary confinement.217 Eventually, the case was dismissed as prosecutors lost contact with their only witness and Browder was cleared to go home. After multiple years of isolation, physical and emotional abuse by correctional officers, and attempted suicide attempts, two years after Browder was released he committed suicide.218 Blitzman brought up one of the most relevant points about Malloy’s proposal that political times have changed since the days of Willie Horton, and now “the governor [Malloy] is supported by a body of research that did not exist when Lee Atwater, the strategist behind George H.W. Bush’s 1988 campaign.”219 While Malloy agreed with this change in political temperature, the question still remained, if there were enough politicians within

216 Ibid.
217 Ibid.
Connecticut to take the “political risk that one [juvenile] will use their second chance to commit a serious crime,” against the reward of deterring a generation of juveniles from a life-long interaction with the criminal justice system.  

As the 2016 legislative session came to a close, Malloy’s bill faced a major defeat. Malloy’s original “Second Chance Society Part II” proposal contained both bail reform as well as the “Raise the Age Part II” initiative. A week prior to the bill’s defeat in the House, Malloy agreed to forego the raise the age portion of the bill, with the hopes of increasing support for the bail reform policy. This adaptation was still not enough. Within negotiations, Republican members of the House produced a list of all of the violent criminals that under Malloy’s proposal would be eligible for free bail. This sparked outrage in some members who knew that had a closer look been given to Malloy’s proposal, it would have been clear that individuals, like those on the list produced in the House, were multiple offenders who would not be covered under Malloy’s proposal. Other representatives, like William Tong, co-chairman of the legislative Judiciary Committee, believed the issues presented were complicated and that there would be more support if more members of the House were able to better understand the legislation. Other members of the House of Representatives, like Laura Hoydick, thought that Malloy’s proposal missed the mark of real reform. Hoydick believed that the remains of this “Second Chance Society Part II” proposal had “no rehabilitative model” within it, she believed the bill was “a financial solution” that did not accurately address the lack of funding for mental health

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222 Dixon, “Bail-Reform Dead in State House.”
223 Ibid.
resources and social service agencies. Ultimately, Malloy faced the press after the defeat of his butchered bill, saying that the house had missed a real opportunity to decrease racial disparities within Connecticut’s state jails and prisons. Malloy continued saying that he understood, as “it [was] an election year, it’s hard to get things done in an election year, and I think it was hard for folks, particularly when some of the things said in the building, though not true, were scary propositions for folks” referring to the lists of inmates among the general emotional nature of crime. However, Malloy concluded his interview was holding true to his beliefs, saying that “holding someone pending trial because they are poor is inherently unfair.” Senate President Pro Tempore, Martin M. Looney, hoped for Malloy to work with both Republican and Democratic leaders in order to salvage the legislation for the upcoming legislative session, saying that “reforming our bail system is too important an issue to be subject to partisan gamesmanship” and that ultimately, “a bipartisan approach is necessary to ensure that this reform receives the support it deserves.” While 2016 only brought another year of failure for Governor Malloy’s legislation, there appeared to be growing bipartisan support, promising a hopeful next legislative session for criminal justice reform in Connecticut.

**2017 LEGISLATIVE SESSION**

Malloy approached the 2017 legislative system with a new approach. After his previous “Second Chance Society Part II” bill never came to a vote in June of 2016,
taking advice from legislators, judges, prosecutors, and others, the updated legislation was divided into two separate bills. The first, “An Act Concerning Pretrial Justice Reform,” focused on diminishing the burden of bail on misdemeanor and non-violent offenses, whereas the second, “An Act Concerning Juvenile and Young Adult Justice,” included the “Raise the Age” legislative reforms. In the latter initiative, after facing three years of refusal, Malloy took a new approach and created a hybrid system by creating a new legal category of “young adults” or adolescents ages 18 through 20. This new category would be allowed some of the protections of juvenile courts, while still retaining some of the restraints of the adult courts. For example, courtroom proceedings would not be closed, similar to that of adult criminal court. However, defendants’ records would be kept confidential, allowing them the ability to properly move on without a criminal record following them for the rest of their lives like the juvenile court. Another example of this hybrid system can be seen in the new category of “young adults,” which could still face automatic transfer for serious crimes. However, it also leaves the provision that judges are able to use their discretion in imposing a lesser sentence and that all records would be sealed after four years. Malloy’s criminal justice advisor, Michael P. Lawlor, commented on this new approach saying, “Raise the Age is not where we started last year, it’s where we ended up.”

Once again, although Malloy’s initiatives finally received national recognition from other states like Massachusetts, Vermont, and Illinois, the “Act Concerning Juvenile and Young Adult Justice,” aimed at raising the age from 18 to 21, stalled in

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229 Pazniokas, “Malloy’s New Pitch for Bail and Juvenile Justice Reforms.”
March of 2017. A Malloy spokesperson said that while “it’s unfortunate that the clock ran out before the Judiciary Committee concluded all its business,” the Malloy administration still held out hope and “the good thing about our legislative process is that conversations about important issues such as these can and will continue this year-- especially when they have budget implications.”

2018 LEGISLATIVE SESSION

At the beginning of the 2018 legislative session, Malloy once again began the process of “Raise the Age” using two different legislative bills. The first, House Bill 5040, or “An Act Concerning Adjudication of Certain Young Adults in Juvenile Court,” expanded the age of juvenile court jurisdiction for those that fall under the new category of “young adults” (ages eighteen to twenty) that would reach full effect by July of 2021. In the second, House Bill 5042, or “An Act Concerning Prosecution of Low-Risk Offenders in Adult Court,” expands the “youthful offender” plea that was previously only in use for those seventeen-years-old and under to 21-years-old. In other words, under this proposal, 21-year-olds that were transferred to adult court would be able to plead guilty to the “youthful offender” charge, instead of the original charge. As such, it allowed judges and prosecutors the discretion to judge each “youthful offender” on a case-by-case basis. However, this “youthful offender”

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230 Pazniokas, “Malloy’s New Pitch for Bail and Juvenile Justice Reforms.”
233 Ibid.
234 Ibid.
status would not extend to those that commit Class A felonies, sexual assault or rape. It was Malloy’s intent, that by adapting his “Raise the Age” legislation and including bipartisan research about efficacies for both public safety and community well-being, he would finally have enough support for the legislation that it would cause real reform in the juvenile courts in Connecticut.

As was true in the two years prior, Governor Malloy’s proposals to raise the age of juvenile jurisdiction was met with a wave of dissent from both sides of the reform movement. Some individuals were active adversaries of the proposal including Senior Assistant State’s Attorney Francis J. Carino who stated he did not “know what some of them (reformist politicians) are thinking up there.” Carino said that the juvenile justice reforms in Connecticut over the past few years, referring largely to the increase in juvenile jurisdiction from sixteen to eighteen years old, had made it “harder and harder to put the kids in detention when they get arrested and put a stop to their activity until we can figure out what happened.” In fact, Carino thought that “a small percentage of young teens who commit serious crimes are emboldened because they know they won’t face significant consequences in the juvenile system.” Carino’s reservations also coincided with another Willie Horton type example, as automobile thefts by juveniles hit a slight peak in certain areas of Connecticut, causing many politicians to utilize these numbers to paint the “Raise the Age” legislation as too soft on crime. In reference to this rise in car thefts, Acting

235 Scinto, “Malloy Pushes to ‘Raise the Age’ to 21 For Many Crimes,”
https://www.theday.com/article/20180413/NWS04/180419714
237 Ibid.
238 Ibid.
Police Chief Fernando Spagnolo said that “citizens feel frightened” and went on to criticize the first time Connecticut raised the age from sixteen to eighteen years old, saying that while he does not like these terms, the current system allows for a “catch and release” pattern with juvenile offenders. In other words, juveniles are caught and diverted to alternative interventions, such as transferring juveniles to adult court had become increasingly more difficult for nonviolent offenses. Deputy Chief State’s Attorney for Operations, Kevin D. Lawlor, responded to such concerns saying that a judge must deem that it is in the best interest of both the child and the community for the adolescent to be transferred to adult court. Advocates such as Abby Anderson, Executive Director of the Connecticut Juvenile Justice Alliance, used the understanding of adolescent brains to say that incarceration is not an effective deterrent as kids are not able to properly weigh their decisions and understand the cause and effect of their actions. Therefore, Anderson stated, in reference to the automobile thefts, if “your goal is to not have the kid steal the car. We put the kid in for 14 days, what has changed?”

Despite the changes Malloy implemented in the new “Raise the Age” legislation, once again, in July of 2018, the bills did not make it out of committee and were not voted on during the legislative session. While there was no major success in the context of these two particular bills there were two major victories in terms of juvenile justice reform in Connecticut, as well as Vermont. In Connecticut, the

241 Ibid.  
242 Ibid.  
Connecticut Juvenile Training School in Middletown, CT, one of the state’s largest juvenile correctional facilities, was closed in 2018 after reports of the unbearable conditions that arose in 2015. This was also made possible, in part, because of the decrease in juvenile offenders being detained in correctional facilities after the “Raise the Age” Part I initiative. Additionally, Vermont took a step forward in the “Raise the Age” initiative as it became the first state to successfully pass legislation to raise the age of juvenile jurisdiction passed the age of eighteen. While Connecticut may have fallen short of Vermont’s accomplishments for the 2018 legislative session, this influential legislative win could set precedent for many other states to follow suit.

2019 LEGISLATIVE SESSION

In present-day Connecticut, the “Raise the Age” legislation is still in the works. With the success of Vermont keeping hope alive in Connecticut, a proposed Senate Bill No. 57, “An Act Concerning the Jurisdiction of the Juvenile Court,” was referred to the Joint Committee on Judiciary with the sole statement of purpose “to improve the criminal justice system.” Introduced by Senator Martin M. Looney, the one-page summary requests that the jurisdiction of the juvenile court should be expanded to include all teenagers. However, a related bill was also submitted to the Joint Committee on Judiciary with directly opposing motives: Proposed House Bill

244 Florin, “Juvenile Changes Occurring Outside of Capitol Building.”
245 Ibid.
246 “2019 Legislation on Youth Prosecuted as Adults in the States,” Campaign for Youth Justice.
No. 6499, “An Act Repealing the “Raise the Age” Law.” In this proposal, submitted by Representative Craig C. Fishbein, the stated purpose is in stark contrast with the former, still, stating the intent to “repeal the “Raise the Age” law in order to address increasing levels of juvenile crime. In other words, this proposal hopes to remove Connecticut’s first “Raise the Age” effort, which increased the age of juvenile court jurisdiction from sixteen- to eighteen-years-old. Data presented by the Connecticut Statistical Analysis Center showed that in actuality, the number of arrests involving youths under the age of eighteen went down 56% between the years of 2009 and 2016. While these do not account for spikes in 2017 and 2018, is unclear at this point whether this bill addresses the actual increased levels in juvenile crime or the perceived increase in juvenile delinquency.

In 2018, after serving Connecticut as Governor for seven years, Governor Dannel Malloy announced that he would not be running for re-election. Despite the impressive list of legislation Malloy was able to pass, including, but not limited to many monumental steps in criminal justice reform, Malloy was the most unpopular Democratic Governor in the entire country. Jon Thompson, a Republican Governor Association spokesman, went as far as to say that Connecticut “gave up long ago on

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248 Connecticut Judiciary Committee, An Act Concerning Jurisdiction of Juvenile the Court
250 Ibid.
251 Ibid.
253 Ibid.
any hopes of effective governance from Malloy, and now Malloy is giving up on Connecticut.”

**OTHER STATES TRY TO “RAISE THE AGE”**

Although Governor Malloy’s efforts to raise the age in Connecticut were ultimately unsuccessful, Vermont, which was also attempting this same feat concurrently, became the first state to successfully increase the age of juvenile jurisdiction up to 21-years-old. The Vermont bill signed in 2016 will slowly increase the age of juvenile jurisdiction to include nineteen-year-olds by 2020 and twenty-year-olds by 2022 (excluding juveniles accused of violent offenses such as murder or armed robbery.) This bill marks a monumental step forward in juvenile justice reform, and hopefully, Vermont will serve as a leader in encouraging other states, like Connecticut, to increase the age of juvenile jurisdiction as well. Additionally, a few states, such as New York, and California have also piloted programs that raise the age of juvenile jurisdiction for certain offenses. Most notably, Katy Weinstein Miller, chief of alternative programs and initiatives in the San Francisco DA’s office stated that “neuroscience has really informed everything we do in court.” Although Connecticut was not successful in its “Raise the Age” proposal, these initiatives in Vermont, New York and California indicate a bright future with more neuroscience-informed policy in the juvenile justice system.

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255 Keating, “Race for Governor in Connecticut is on for 2018.”
258 Ibid.
CONCLUSION

“Every society has the criminals that it deserves.”
— Havelock Ellis, *The Criminal*

Today, despite the growing juvenile prison reform movement, there are still 53,000 juveniles in the United States on any given day held in facilities away from home. Approximately one in ten, or 4,656 youths, are held in adult prisons. Two-thirds (67%) of juveniles are held in the most restrictive facilities. Furthermore, African American juveniles comprise 18% of youth under eighteen in the United States. However, male facilities are 43% African American youth, and female facilities are 34% African American youth. Despite the robust accumulation of neuroscientific evidence, these statistics illustrate many remaining shortcomings in the criminal justice system. While neuroscience has been able to demonstrate many of the disparities between the scientific data and how juvenile offenders are actually treated in the criminal justice system, little has been done to correct the inconsistency between science and practice.

Connecticut, which at one point had one of the least progressive juvenile justice systems in the United States, is now one of the leaders in the reform movement. Part of this transition was Connecticut’s attempt to use the growing neuroscientific data to raise the age of juvenile court jurisdiction to 21. This arduous

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261 Requarth, “Neuroscience is Changing the Debate Over What Role Age Should Play in the Courts.”
260 Ibid.
263 Ibid.
264 Sawyer, “Youth Confinement: The Whole Pie.”
process, spanning many years, demonstrates one example of a state attempting to shape and reform policy to accurately reflect emerging neuroscientific understanding of the undeveloped nature of the adolescent brain. In fact, within the scientific community, it has been shown that adolescent prefrontal cortices are still not fully developed until well into the late 20’s. In this way, Connecticut is attempting to move towards the neuroscientific ideal. However, raising the age to 21 still does not entirely encapsulate the true scientific understanding that brain development continues well past the age of 21. Still, the fact remains, Connecticut’s reform process was time-consuming, faced many political objectors, and was ultimately unsuccessful. The question that emerges is: Why is there such a lag between neuroscientific findings and actual policy changes to reflect them?

POTENTIAL EXPLANATIONS FOR DELAY BETWEEN SCIENCE AND POLICY

One of the reasons for this delay between scientific discovery and institutional change could be that the prison industry is a multibillion-dollar conglomerate, employing millions of people across the country. The prison system is so massive, and often static in its practices that it allows for very little flexibility to incorporate emerging scientific understanding. Additionally, the prison industry has been estimated to have a $74 billion turnover, and organizations like the Corrections Corporation of America and GEO Group represent more than half of private prisons in the United States, yielding $2.53 billion in revenue in 2012.265 This financial power

allows for prison affiliated corporations to lobby and control politicians in favor of anti-reform efforts. Such a massive conglomerate, with incredible economic power, is challenging to change and it is generally not within the interests of those in this industry to reduce the number of “customers” within the system.

Another reason could be that the criminal justice system, almost from its inception, is arguably geared towards systemic oppression of minority races. From the establishment of the juvenile justice system, one of the underlying goals of the institution was to insert social control over the growing Eastern European immigrant population in the United States.\textsuperscript{266} Even today, as reformers attempt to repeal the “tough on crime” era laws, however, it is essential to note that the get-tough laws were systematically designed to suppress the growing migration of former black slaves from the South.\textsuperscript{267} This type of entrenched racism, leading to the mass incarceration of disproportionately minority individuals, is a difficult system to attempt to reform. This is especially true as many minority groups have been systematically dominated for generations, leaving them unable to gain access to opportunities and platforms to speak against their own oppression.

An additional obstacle in creating change in the criminal justice system is the highly emotional nature of crime. Powerful emotions are easily manipulated, as seen by the “tough on crime” political movement, which preyed on society’s fears to create a punitive justice system. Most notably, in the case of Willie Horton, politicians were able to capitalize on the powerful emotion of fear and subconscious (or conscious) racism to win political capital. Additionally, society is constantly bombarded with crime stories from all kinds of social media outlets. This exacerbates the feeling of
fear as individuals are constantly surrounded by flashy, fear-provoking headlines. This exposure could also cause people to overestimate the actual prevalence of this type of headline crime. It is particularly challenging to change policies surrounding crime because horrific stories like Willie Horton easily capture public attention; however, it is nearly impossible to point to the many theoretical people that could be deterred from criminal activity because of new reform policy. In this way, it is challenging to create change when the emotionally provocative nature of crime can easily monopolize the conversation.

As voters enter the voting booths, the overemphasized prevalence of violence and fear can influence individuals to vote in favor of public safety. Politicians can manipulate such powerful emotions, using it to win political capital as they highlight their pro-public-safety initiatives. Moreover, as seen in Connecticut’s attempt to raise the age of juvenile jurisdiction to 21, politicians who may support the reform movement do not, as they could be caught on the wrong side of a Horton case, and appear “soft on crime.” Looking deeper into this phenomenon, it reflects the fact that voters do not share the same understanding as neuroscientists, and as such, they do not elect nor support politicians who are in favor of these type of juvenile justice reforms. I would propose that this cog within the wheel of turning science into policy is the cause of much of this observed lag time. Neuroscience is not as thrilling and emotionally provocative as criminality, and as such, it is nearly impossible for the scientific understanding to drown out the attention-grabbing headlines detailing criminal activity. In addition, society tends to have a fascination with criminality, while the majority of the public are either disinterested or unable to comprehend the

266 Feld, “The Transformation of the Juvenile Court--Part II: Social Structure, Race, and the
complexities of neuroscience research. It is possible that because of this disconnect between the public sector and academia, society is left uninformed, and therefore do not support political initiatives to reform the juvenile justice system.

The observed disconnect between the public and academics is not unique; there also exists a detachment from the politicians entrusted to change policies and the academics researching the efficacies of polices. In fact, in my interview with Michael Lawlor, the former Undersecretary for Criminal Justice Policy and Planning, who worked alongside Malloy on the “Raise the Age” initiative for many years, he stated that many of the politicians involved in judicial decisions have very little understanding of the neuroscience behind the proposed “Raise the Age” bill. As Robert Sapolsky, endocrinologist and famous author of Behave puts it, “neuroscientists…knew nothing about the workings of the legal world, and that most of the legal folks had avoided science since being traumatized by ninth-grade biology.” Lawlor stated that he and Malloy did not “sit and read long scientific journal articles,” but rather, they used this data to support an initiative that they already believed in, regardless of whether neuroscience proved it or not. In fact, it appears as though any type of legislative reform is not because of the neuroscience, but rather, is purely a result of the shift in the political climate. In other words, recently, neuroscience has been used as a weapon, going along with the political shift towards reform. While neuroscience was a helpful asset in the larger campaign for juvenile justice reform, the war was not won because of the weapon itself, but rather

"Crack Down" on Youth Crime,” 330.

Ibid, 340.


the political mentality that started the war in the first place. In many ways, Lawlor thinks this disconnect between politicians and academics comes from the fact that much of neuroscience is complex and dry. The most obvious way to bridge this divide between academia and politics, in Lawlor’s opinion, is to “marry a researcher with someone in public relations.” In many ways, Lawlor thought of this mission as one of his major roles as he attempted to be a “cheerleader” for much of the gritty neuroscientific details.

When I first started the process of interviewing individuals involved in the “Raise the Age” initiative in Connecticut, I expected to find many politicians to be deeply immersed in the current neuroscientific literature, as well as the legal practices. Furthermore, I anticipated that there would be scientists who focused on the application of their research in political efforts, such as “Raise the Age.” Like two sides of the same coin, I expected there to be more collaboration between politicians and academics, and more developed educational efforts towards the public and the courts. However, after conducting interviews with multiple state and regional experts involved in the process of turning neuroscience into legislation, I was shocked to find that many were only vaguely aware of the current neuroscientific findings. Over the course of many months, I was able to consult a joint Connecticut Defense Attorney and First Selectwoman, who seemed to agree with many of the juvenile justice reforms backed by neuroscience. However, she still admitted to knowing very little about the neuroscience itself. In addition, I interviewed an influential juvenile justice advocate in Connecticut, who heads a justice law clinic. She echoed remarks that while she sponsored the reforms, she was not fully educated about the application of the supporting science. There was a report presented by the Columbia Justice Lab that

most aptly connected the scientific data to the “Raise the Age” policy initiatives in Connecticut. After interviewing the author of this report, it was made clear that she was one of the few in the field to create comprehensive reviews of the way science and legislation are inextricably linked. This led me to examine court records from the “Raise the Age” bills from 2015 to 2019, and I was surprised by the relative lack of specificity when discussing the actual brain science that validated the initiative. In contrast, there were more in-depth neuroscientific citations within the Supreme Court cases regarding the juvenile justice system. This disparity in the usage of neuroscientific data as a lobbying tool indicates that on a smaller state level, like Connecticut, policy reforms appear to be loosely based on empirical data and heavily focused on the political climate in the state. Differently, in this nation’s highest court, there appears to be greater integration of specific science related to juvenile justice. This shows that although the information is available at the top of the justice hierarchy, there is little trickle down of research to state systems and individual representatives, reflecting a lack of education in the populations that are electing officials. Through the conduction of these interviews, my primary conclusion was that many of the key players involved in the “Raise the Age” initiative is largely uninformed on the true neuroscientific backings of the initiative. Rather, I found that neuroscience was used as a pragmatic tool to expedite the intended initiative, with little concern for incorporating the neuroscience itself.

**RECOMMENDATIONS AND LOOKING FORWARD**

It appears that much of the observed time delay in transmitting academia into policy change falls within the disconnect between academia and the political/social
sector. To better bridge this gap, it requires both the public and academia to take the initiative to inform themselves and community members about current neuroscientific understanding. Emotional headlines of criminal offenders easily overshadow the empirical facts that demonstrate best practices in the justice system. For this reason, it requires a conscious effort to make academic research more accessible to the public. In this way, as the public sector educates itself on evidence-based practices, it will create a societal push for more informed political leaders and a demand for a better juvenile justice system. In other words, a significant goal in utilizing neuroscience is to help create a society that accepts the ideology of the “emerging adult” as an institutional category. Once neuroscientific understanding becomes a matter of public knowledge, politicians will no longer have to be fearful of appearing soft on crime, nor will they have the power to manipulate uninformed voters.

As shown in the Connecticut case study, the use of neuroscience in the criminal justice system is heavily debated. However, the primary recommendation I propose is to utilize the tremendous amount of neuroscience research that is widely accepted to fight for a better juvenile justice system. For example, there were times where brain images were used in the courtroom to demonstrate an individual’s cognitive processing abilities. However, there is not enough evidence at this point to modestly apply neuroscience in this way. Instead, there is an abundant amount of empirical evidence in smaller scale projects, such as examining best prevention and rehabilitation practices in the juvenile justice system. There are a few initiatives that I believe have both the neuroscientific support, as well as have the potential to impact the quality of the juvenile justice system dramatically. The first is the investment in diversion programs like probation or school intervention, designed to decrease
unnecessary exposure to the criminal justice system. Additionally, what I consider to be one of the top priorities as neuroscience has indicated a high correlation between mental health disorders and criminality, is to clarify and strengthen relationships between mental health institutions and the juvenile justice system. Finally, creating a societal push to re-examine juvenile transfer laws, to make a juvenile justice system that reflects the neuroscientific understanding that regardless of the crime, an adolescent’s brain is still unable to be held entirely morally responsible as an adult. These reforms are widely supported by the neuroscience that is available at this time, and as such, should be a top priority in moving the juvenile justice system forward.

In summary, while neuroscience has advanced understanding of best practices for adolescent offenders, it is still abundantly clear how broken the current juvenile justice system is. 75% of juvenile offenders are incarcerated, despite posing little to no threat to public safety, for offenses such as skipping school. Moreover, 67% have been in the child welfare system, 65% have been diagnosed with at least one mental health disorder, and 75% of youths released from juvenile correctional facilities are re-arrested within three years. These shocking statistics not only highlight the inefficacies of the current juvenile justice model, but they also demonstrate how multiple factors such as socioeconomic class, learning disabilities, and mental health disorders coincide with increased risks of being incarcerated. Neuroscience, while still in its infancy, has helped to highlight many of the ways the criminal justice system needs improvement. More than this, however, neuroscience has helped to adjust societal conceptions of innocence, culpability and moral responsibility, and called into question the entire concept of free will. Neuroscience

has created a spectrum of culpability, as society better understands the variable agency individuals truly contain over their actions, particularly in the developing adolescent brain. From these discoveries, it is up to us, as a society, to shape a judicial system that better reflects this new understanding of free will. We must reconsider certain punitive practices, as it seems particularly misguided to punish individuals who are largely victims of systemic, societal shortcomings, such as poverty or inadequate mental healthcare. Changes like those in Connecticut to raise the age of juvenile jurisdiction to 21 to account for this type of new scientific data are only the first steps in the broader societal conversation about how to deal with crime.

In addition, neuroscience has shown us that adolescence is marked by a period of particularly heightened vulnerability. However, and perhaps more importantly, this process of ‘rewiring’ also leaves room for an incredible amount of resilience.272 This understanding indicates that adolescents are primed for treatment and rehabilitation, and with the right tools, have the potential to undergo real change. It is necessary then to create a societal push to educate and inform politicians, family members and the community about important neuroscientific discoveries in order to create a system that gives everyone equal opportunity and justice for all.

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271 Ibid.
272 Johnson, Blum, and Giedd, “Adolescent Maturity and the Brain: The Promise and Pitfalls of Neuroscience Research in Adolescent Health.”


Kincade, B. “The Economics of the American Prison System.” 


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