No. SJC-11693

Supreme Judicial Court

for the Commonwealth of Massachusetts

Commonwealth

v.

Sheldon Mattis

On Appeal from the Suffolk Superior Court

Corrected Brief for Defendant Sheldon Mattis

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Issue Presented

Two years ago, this Court remanded Sheldon Mattis's case to the Superior Court "for development of the record with regard to research on brain development after the age of seventeen" so this Court could "come to an informed decision as to the constitutionality of sentencing young adults to life without the possibility of parole." After the parties created a robust record, including the testimony of four experts and dozens of peer-reviewed scientific articles, the Superior Court issued comprehensive factual findings. The court found that "late adolescents," defined as eighteen-, nineteen-, and twenty-year-olds, exhibit the following three attributes, as compared to adults: (1) they engage in a greater degree of risk-taking, sensation-seeking, and impulsivity, particularly in circumstances of emotional arousal; (2) they are more susceptible to peer influence; and (3) they have a greater capacity for change and rehabilitation. The court also found that most people who commit crimes during late adolescence will desist from criminal conduct once they reach their mid-twenties and that long-term recidivism predictions at this age have reduced accuracy.

The issue presented is:

Given these well-supported findings that late adolescents are, like juveniles under eighteen, less culpable and more capable of reform than adults, should this Court hold that life-without-parole sentences imposed on late adolescents violate art. 26 of the Massachusetts Declaration of Rights and the Eighth Amendment to the United States Constitution?

Statement of the Case[1]

On December 21, 2011, a Suffolk County grand jury returned five indictments charging Sheldon Mattis with (1) first-degree murder, (2) armed assault with the intent to murder, (3) aggravated assault and battery with a dangerous weapon, (4) unlicensed carrying of a firearm, and (5) unlicensed carrying of a loaded firearm (R.I:3). These charges stemmed from the September 25, 2011, fatal shooting of Jaivon Blake in Dorchester. *Commonwealth v. Watt*, 484 Mass. 742, 743 (2020). Mr. Mattis was eighteen years old at the time of that shooting. *Id.* at 745.

On November 22, 2013, following a jury trial in the Suffolk Superior Court, Mr. Mattis was convicted of all charges (R.I:10-11). The

[1] Citations are as follows: the Addendum by page number as "Add.#"; the Record Appendix by volume and page number as "R.v:#"; the transcript of Dr. Larry Steinberg's testimony by page number as "LS #"; the transcript of Dr. Adriana Galván's testimony by page number as "AG #"; the transcript of Dr. Robert Kinscherff's testimony by page number as "RK #"; and the transcript of Dr. Stephen Morse's testimony by page number as "SM #."

Commonwealth had presented evidence that Mr. Mattis gave his seventeen-year-old co-defendant the gun and encouraged him to commit the shooting "as part of an escalating gang feud." *Watt*, 484 Mass. at 745. On December 2, 2013, the Court (Roach, J.) imposed a mandatory sentence of life without the possibility of parole ("LWOP") on the murder charge, pursuant to G.L. c. 265, § 2 (R.I:11). On the other counts, the Court imposed concurrent terms of imprisonment (*id.*).

In November 2014, Mr. Mattis filed a motion under Massachusetts Rule of Criminal Procedure 30, arguing, among other things, that his mandatory LWOP sentence violated the State and Federal Constitutions' prohibitions on cruel and/or unusual punishment (R.I:16). He sought funds for an expert to support this position and requested an evidentiary hearing (R.I:17). The Court did not grant the expert funds and denied the Rule 30 motion without conducting an evidentiary hearing on the issue of whether his LWOP sentence was constitutional (R.I:16).

Mr. Mattis filed a timely appeal from the denial of that motion, and this Court consolidated the appeal with his direct appeal. On appeal, Mr. Mattis argued, in relevant part, that his LWOP sentence

was unlawful, asserting that, under the Massachusetts and United States Constitutions, "such a sentence is unconstitutional for any individual under the age of twenty-two." *Watt*, 484 Mass. at 755.

On June 4, 2020, this Court affirmed Mr. Mattis's convictions but declined to resolve Mr. Mattis's challenge to his sentence. *Id.* at 754-56. Instead, the Court remanded the case to the Superior Court "for development of the record with regard to research on brain development after the age of seventeen." *Id.* at 756. This record, the Court explained, would "allow [it] to come to an informed decision as to the constitutionality of sentencing young adults to life without the possibility of parole." *Id.*

On remand, the Superior Court conducted three days of evidentiary hearings—on January 14, February 19, and March 1, 2021—developing the record requested by this Court (R.I:20). Three expert witnesses, two for the defense and one for the Commonwealth, testified on issues of adolescent neurological and psychological development after the age of seventeen. The parties also submitted several volumes of exhibits, and Mr. Mattis, with the assent of the

Commonwealth, submitted the transcript of a fourth expert's testimony in *Commonwealth v. Robinson*, SUCR200-10975.

On May 4, 2021, the Superior Court entered an order transmitting the record of the remand proceedings to the Clerk of this Court (R.I:22). That record was docketed by this Court on June 10, 2021.

On December 24, 2021, this Court once again remanded the case to the Superior Court, this time consolidated with *Commonwealth v. Robinson*, so the Superior Court could (1) make factual findings based on the evidentiary record developed in the two cases and (2) "address whether the imposition of a mandatory sentence of life without the possibility of parole for Mattis and those convicted of murder in the first degree who were eighteen to twenty-one at the time of the crime, violates article 26 of the Massachusetts Declaration of Rights" (R.I:23-25). The Court assigned both cases to Superior Court Justice Robert L. Ullmann for this purpose (*id.*).

On April 8, 2022, Judge Ullmann received limited additional testimony, accepted one additional exhibit, and heard oral argument from the parties (Tr. 4/8/22 at 4, 18). During this hearing, he informed the parties that he interpreted this Court's remand order to limit his

consideration to the constitutionality of *mandatory* LWOP for the relevant age cohort (*id.* at 22). He did not believe that this Court had authorized him to address the issue of whether *discretionary* LWOP was also unconstitutional (*id.*).

On July 22, 2022, Judge Ullmann issued his findings of fact and ruling on the legal issue identified by this Court in its remand order. Based on his comprehensive factual findings, he held that "mandatory sentences of life in prison without the possibility of parole . . . for defendants who were 18 through 20 years old at the time of their crimes . . . violate article 26 of the Massachusetts Declaration of Rights" (Add. 76). He explained that Mr. Mattis and Mr. Robinson were "therefore entitled to a new sentencing hearing" (*id.*).

The new portions of the record were transmitted to this Court and were docketed on August 23, 2022.

Statement of Facts

I. Introduction: A Convergence of Evidence

Pursuant to this Court's remand order to develop a "record with regard to research on brain development after the age of seventeen" and "its impact on behavior," *Watt*, 484 Mass. at 756, the parties and the

Superior Court created what is likely the most robust judicial record anywhere in the country on this subject, consisting of: (1) testimony from four experts—Lawrence Steinberg, a developmental psychologist; Adriana Galván, a neuroscientist; Robert Kinscherff, a forensic psychologist with expertise in recidivism risk prediction; and Stephen Morse, a law professor and forensic psychologist[2]; (2) myriad scientific studies in behavioral psychology and neuroscience; and (3) research analyzing relevant real-world data. The Superior Court Justice (Ullmann, J.) tasked by this Court with analyzing this record and making factual findings made the following "Core Findings" about "late adolescents" as a group, defined as eighteen-, nineteen-, and twenty-year-olds,[3] as compared to adults:

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[2] Dr. Galván and Dr. Kinscherff were called to testify by the Defendant, while Dr. Morse testified as the Commonwealth's expert. Dr. Steinberg testified on behalf of the defense in the now-consolidated case of *Commonwealth v. Robinson*. The transcript of that testimony was admitted by agreement as an exhibit in Mr. Mattis's case.

[3] Dr. Steinberg testified that "most scientists would define adolescence as the period that runs from approximately age 10 to age 20, up to but not including 21," that adolescence is divided into "substages," and that "late" adolescence comprises young people aged eighteen to twenty-one (LS 18-19). Dr. Galván defined "late adolescence" as "18 to 20 or 21" (AG 35). For purposes of this brief, the Defendant uses the term "late

1) Late adolescents exhibit a greater degree of risk-taking, sensation-seeking, and impulsivity, particularly in circumstances of "hot cognition" (i.e., emotional arousal);

2) Late adolescents are more susceptible to peer influence; and

3) Late adolescents have a greater capacity for change and reformation.

(Add. at 89-90).

Judge Ullmann correctly recognized that a convergence of evidence from multiple disciplines and sources proves the existence of these distinctive attributes of late adolescence: "Consistent and reliable results have been obtained in many behavioral studies, [structural] MRI studies, and/or [functional] MRI studies that support [these] findings," and crime and epidemiological data showing "real-world behaviors of 18 through 20-year olds . . . support the brain science findings" (Add. 90-91). Drs. Steinberg, Galván, and Morse all testified about the significance of the consistent findings from across these multiple scientific domains.[4]

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adolescents" to mean people who are at least eighteen years old but not yet twenty-one.

[4] Dr. Steinberg testified that "the observations that psychologists have been making about adolescents compared to adults for many, many, many years, based on psychological and behavioral research, were

The Remand Justice also found that most late adolescents who commit crimes, including serious crimes like homicide, will desist from further criminal activity once they mature into adulthood (Add. 91). And there is no reliable means of predicting at that age which late adolescents will be the rare exceptions who persist in crime throughout adulthood (*id.*; RK 47-48).

These findings are not only well supported by the record; they are irrefutable. Below is a summary of the evidence presented in each of the relevant domains—developmental psychology, neuroscience, real-world data, and risk-prediction.

II. Developmental Psychology

Developmental psychology is a sub-field of psychology that studies the ways people "grow and change and mature over time" (LS 17-18). In particular, developmental psychology "is concerned with behavior" (AG 32). Dr. Lawrence Steinberg, a Professor of Psychology at Temple

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validated by the findings of the brain studies, so they told the same story about maturation during this period of life" (LS 50). Dr. Galván noted that "the same patterns and the same age trends exist in real-world data, epidemiological data that map onto the laboratory data" (AG 191). And Dr. Morse recognized that "[t]he neuroscience findings are consistent with what we know behaviorally" (SM 96).

University, is a developmental psychologist with a focus on adolescent development (LS 13-14). Dr. Steinberg has published extensively in the field's leading journals and has written a dozen books about "adolescent decision making and risk taking" (LS 15). He also "led a team of scientists" that "provided the scientific background" for amicus briefs filed by the American Psychological Association ("APA") in *Roper v. Simmons*, 543 U.S. 551 (2005), *Graham v. Florida*, 560 U.S. 48 (2010), and *Miller v. Alabama*, 567 U.S. 460 (2012) (LS 16-17). The United States Supreme Court cited his work in all three of those decisions (LS 17).[5] And in *Diatchenko v. District Attorney*, 466 Mass. 655 (2013), this Court cited three of his articles as exemplifying "current scientific research on adolescent brain development" that led the Court to strike down life without parole sentences for juveniles. *Id.* at 669 & n.14.

[5] *See Roper*, 543 U.S. at 569 & 570 & 573 (citing Steinberg & Scott, "Less Guilty by Reason of Adolescence: Developmental Immaturity, Diminished Responsibility, and the Juvenile Death Penalty," 58 *Am. Psychologist* 1009 (2003)); *Graham*, 560 U.S. at 68 (citing APA Amicus Brief for proposition that "developments in psychology and brain science continue to show fundamental differences between juvenile and adult minds"); *Miller*, 567 U.S. at 471 (referencing *Roper's* reliance on Steinberg & Scott article).

According to Dr. Steinberg, there are five important characteristics that distinguish adolescents from adults: (1) "adolescents are more impulsive and . . . make more impetuous decisions"; (2) "adolescents are more concerned with the immediate and not as likely to pay attention to or to think about the future consequences of their acts"; (3) "adolescents are relatively more sensitive to rewards and are more influenced by the potential rewards of a decision rather than the costs"; (4) "adolescents are more susceptible to social influence and especially the influence of peers"; and (5) "adolescents are still in the process of changing" (LS 19-20).

Research in developmental psychology has demonstrated that these traits distinguishing adolescents from adults hold true for late adolescents (LS 19). Dr. Steinberg testified, "[W]e've seen and shown in our research that compared to late adolescen[ts], adults are more resistant to peer influence, they're less likely to engage in risky behavior, and they're better at controlling their impulses" (LS 30). Dr. Steinberg noted that while the research in his field supporting these conclusions has focused more on the late adolescent cohort since 2005, "even at the time of *Roper* [i.e., 2005], there still was a fair amount of

psychological research, behavioral research on people past the age of 18" (LS 37, 38-39, 105). Today, with an additional fifteen years of research focusing on late adolescence, there is "robust enough research to draw conclusions as to 18- to 21-year-olds with respect to risk-taking, impulsivity, and peer-influence" (LS 173).

In fact, Dr. Galván testified that we now know as much about late adolescents "from psychological studies" "designed to study behavior and the psychology of behavior" as we do about younger adolescents (AG 131). She further noted that there are no studies in developmental psychology that "call[] into question or contradict[] these conclusions that 18, 19, and 20-year-olds are more impulsive and prone to risky behaviors than adults" (AG 98-99). Dr. Morse agreed, testifying that risky behaviors tend to peak in late adolescence and early adulthood and then decline through the twenties (SM 106-107).

One especially compelling study of late-adolescent impulsivity that Dr. Steinberg discussed was "an international study that included about 5,500 people from 11 different countries," ranging from Europe, Asia, Africa, and North and South America (LS 42, 59).[6] Dr. Morse

[6] See R.I:140-165.

characterized this study as "very fine work" (SM 89). Dr. Galván called this study "important" because it showed the same "patterns of development . . . across the world," thus lending "greater confidence in our conclusions about the extended period of adolescence" (AG 95). Using both behavioral tests and questionnaires, the study found that impulse control does not start improving "until 21-22 [years old] or perhaps a little beyond that" (LS 42). More specifically, the study showed that in circumstances of "hot cognition," meaning "thinking that we do under conditions that are emotionally or socially arousing" (LS 25), "the skills and abilities that help us make good decisions" in those circumstances "are still developing" during late adolescence (LS 142).

Importantly, the findings from this international study, with an enormous sample size, replicated findings reached in earlier published studies that examined the same questions about decision-making and risk-taking but were conducted exclusively in the United States, albeit in five separate cities (LS 61). In addition, Dr. Steinberg and Dr. Galván described another recent study showing, through a behavioral-task experiment combined with fMRI scans, that late adolescents exhibit worse cognitive control and greater impulsivity under hot cognition

than cold cognition, whereas older adults exhibit no such difference (LS 48-49; AG 77).[7]

These studies show that across many culturally and economically diverse nations, "reward sensitivity . . . reaches a peak in late adolescence and then declines," self-control "plateaus at around age 22," and late adolescents are "more affected by emotional factors" (LS 61-62). Dr. Galván agreed with Dr. Steinberg's conclusion, testifying that studies in developmental psychology show "susceptibility to context and to emotion" in late adolescents that "affects their ability to reason" in these circumstances (AG 82-84). And Dr. Morse agreed that "behavioral scientists" had demonstrated that "adolescents, especially in emotionally charged contexts or in the presence of peers, are more apt than adults to be impulsive, to disregard future consequences, and to take risks" (SM 95-96). This research further demonstrates that these phenomena are not based on socioeconomic, environmental, or cultural differences (LS 62-64).

Moreover, the international study demonstrated that the impact of peers on risk-taking is seen among late adolescents "but not among

[7] See R.I:255-268.

people who are older" (LS 142). Dr. Steinberg testified that he has conducted significant research examining "how the presence of peers affects decision-making and risk-taking," and that this research has found "a strong peer effect, which [tends] to elevate or increase risky behaviors in late adolescence" in contrast to people who have fully matured (LS 43). In fact, "even if peers aren't explicitly encouraging anything, the mere presence of peers increases the likelihood that adolescents will engage in this behavior" (LS 73). And Dr. Morse agreed that the research supports the conclusion that late adolescents "are uniquely susceptible to peer influence . . . especially when it comes to risky behavior" (SM 82).

III. Neuroscience

While developmental psychology is concerned with behavior, "developmental neuroscience is concerned with the underlying brain systems that support the changes in behavior across the lifespan" (AG 32). The Superior Court heard testimony from Adriana Galván, Ph.D., a professor of psychology at the University of California Los Angeles and the director of UCLA's developmental neuroscience lab (AG 21). She earned her doctorate in neuroscience at Cornell University under the

supervision of Professor B.J. Casey, a pioneer in the field of adolescent neuroscience and the first researcher to use advanced imaging technology to examine the developing brains of children and adolescents (AG 28). Dr. Galván's research is focused on adolescent brain development, including during late adolescence (AG 23). She has published more than 115 peer-reviewed articles in leading neuroscience journals and is the author of the book *The Neuroscience of Adolescence* published by Cambridge University Press in 2017 (AG 26). She has also "received numerous honors and awards, including the Presidential Early Career Award for Scientists and Engineers, bestowed by the White House, and the Troland Award from the National Academy of Sciences" (Add. 87).

In the past half century, there have been extraordinary advances in the scientific understanding of human brain anatomy, development, and function (AG 41). This scientific revolution has been fueled by new imaging technology that allows scientists to study human brains in ways that would otherwise be impossible (AG 35-36). Neuroimaging is now "the most important tool [neuroscientists] use to study the brain" (AG 35). This imaging technology allows scientists to visualize living

human brains and to learn how they develop over the course of people's lives (*id.*).

Neuroscientists primarily use magnetic resonance imaging (MRI) to study human brains. The MRI machines used by neuroscientists are the same devices that hospitals use to make medical diagnoses (AG 40). There are two different kinds of MRI technology that scientists use to study how adolescents' brains develop: (1) structural MRI ("sMRI"), which allows researchers to "take static pictures of the brain," allowing them to examine the brain's anatomical structures at particular moments in time; and (2) functional MRI ("fMRI"), which "allows [researchers] to examine activation in the brain" and how people's brains respond to stimuli and environmental context (AG 36, 47). These tools have given neuroscientists a "fine grain view of the brain that other technologies would not allow" (AG 42).

Researchers have used sMRI for the past fifty years and have used fMRI for the past thirty years (AG 37, 44). There is no controversy within the scientific community about whether these technologies are reliable and effective tools for studying brain anatomy, function, and development (AG 37).

Structural MRI has allowed researchers to develop a sophisticated understanding of how young people's brains develop anatomically over the course of their adolescence and through their twenties. Scientists, including at the National Institute of Health, have conducted large-scale studies using sMRI to examine how the brain changes across adolescence (AG 43). These studies are focused on understanding typical anatomical changes in the brain across this period of life (*id.*). Researchers use sMRI to collect "structural brain imaging data" from young participants as they move into and through their adolescent years (*id.*). They will, for example, take scans of participants' brains every three years as they move through their teens and into their twenties, allowing "investigators to see the changes that occur in the anatomy of the [adolescent] brain" across time (*id.*). These studies have examined the brains of thousands of adolescents and have given scientists a "very comprehensive" understanding of how young people's brains develop over the course of their adolescent years (AG 44).

From these studies, researchers have learned two important things about late-adolescent brain development. First, adolescents' neurodevelopment does not end when they reach their eighteenth

birthdays but, rather, "continues to develop through the mid-twenties" (AG 60). Second, "the brain develops from the back to the front," with the cerebellum at the back of the brain developing first, and the prefrontal cortex at the front of the brain developing last (AG 61).

The fact that the prefrontal cortex develops last—and is "still undergoing this development" at ages eighteen, nineteen, and twenty—is essential to understanding late adolescent behavior (AG 63, 65). This brain region is the "seat of what is called higher cognition" (AG 63) and is the part of the brain that "most clearly regulates impulses" (Add. 90). The prefrontal cortex is the part of the brain that is responsible for the kinds of abilities "that make[] us adults" (AG 63). Because the prefrontal cortexes of late adolescents are "still undergoing development," they have less "impulse control than adults" and have challenges "think[ing] about how [their] actions today will have implications for the future" (AG 64).

The evidence supporting these conclusions is overwhelming and is not the subject of any dispute within the scientific community. As Dr. Morse, the Commonwealth's expert, explained, it has "been indisputable since the 1990s" that the human prefrontal cortex

continues to mature "into young adulthood," even until "the middle to late 20's," and that this developmental pattern impacts the ability of late adolescents to "regulate[] self-control" (SM 103, 107).

More recently, researchers have used fMRI technology to understand how late adolescents' brains respond to different stimuli and environments. They have found that, when placed in conditions of hot cognition, late adolescents exhibit "worse cognitive control," and that this diminished use of "cognitive skills" is "associated with diminished activation in the prefrontal cortex" (AG 83). By contrast, the cognitive abilities of older people, ages twenty-two to twenty-four, have not been found to be negatively impacted when they are exposed to conditions of hot cognition (*id.*). This research is important because it shows (1) that late adolescents, like younger adolescents, are "similarly susceptible to the negative emotional condition," in contrast to their older counterparts; and (2) that this reduced "ability to reason" under emotionally charged conditions is tied to their stage of neurodevelopment, particularly their underdeveloped prefrontal cortexes (AG 83-84).

Indeed, researchers have found that emotionally charged contexts have a *greater* negative impact on brain function in late adolescents than in younger adolescents (AG 88). Using fMRI technology, researchers have compared adolescent brain function under emotionally neutral conditions (cold cognition) and emotionally charged conditions (hot cognition) and have found that the deviation in brain function and cognitive capacity between these two contexts is greater in late adolescents than in younger adolescents (*id.*). As Dr. Galván explained, "what's interesting about the 18 to 21-year-olds is that aspects of their cognition [are] more mature in very cool settings, but in emotionally arousing settings[,] that's when their brain kind of reverts back to being in a younger state" (AG 89).

This is not the only way that context and stimuli have a greater negative impact on the brain function of late adolescents compared to younger adolescents. Researchers have also found that activation in the reward center of the brain is associated with greater sensation seeking in late adolescents but not in younger adolescents (AG 92). This kind of sensation seeking, in turn, is associated with greater impulsivity and risk taking (*id.*).

This body of fMRI research converges with the findings of neuroscientists studying anatomical brain development and with the findings of developmental psychologists studying behavior in late adolescence. The fMRI studies have "help[ed] unpack [the anatomical] research" and have allowed neuroscientists to understand how "delayed development" in the prefrontal cortex "play[s] out in terms of behavior and function" (AG 89-90). Research in developmental psychology also converges with the findings of the fMRI research. As Dr. Galván explained, "it's another piece of evidence with the same conclusion that development in adolescence continues" into the twenties, "not just in the brain but psychologically as well and in particular . . . aspects of psychological processing including risk-taking, self-regulation and impulsivity" (AG 98).

IV. Real-World Data & Desistance

Judge Ullmann found that "[t]he real-world behaviors of 18 to 20-year-olds, as reflected in F.B.I. crime statistics and Centers for Disease Control Statistics on addiction and accidents, among other measures of harmful conduct, provide confirmatory support for the brain science" (Add. 88). This finding is well supported by the record.

All four experts agreed that criminal conduct, along with other risky behavior, peaks in late adolescence and drops off precipitously in the early- to mid-twenties, with most adolescent offenders desisting entirely from criminal behavior as they mature (LS 35-36, 67, 107; AG 112; SM 107; RK 29). Dr. Robert Kinscherff, a forensic psychologist with expertise in adolescent development, offending, and risk assessment, testified that this pattern, known as the "age-crime curve," has been observed since the nineteenth century, is "a universal phenomenon . . . not cabined to a particular race or ethnic group or nationality," and holds true for homicide offenders (RK 29, 32, 34).

According to Dr. Steinberg, "many studies" have shown that "only about 10 percent of juvenile offenders, even juvenile offenders who have committed very serious crimes, go on to become . . . chronic adult criminals," and most "desist from criminal behavior as they move into their early twenties and certainly by the time they're in their mid-twenties" (LS 35, 107-110). Dr. Galván similarly testified that between eighty-five and ninety percent of adolescent offenders desist from criminal behavior by their mid-twenties (AG 112). Dr. Morse agreed that criminal conduct in adolescence is "not an indication of an indelible

personality trait" and that "most adolescents, even those who commit serious crimes, will age out of offending and will not become career criminals" (SM 107). Dr. Kinscherff attested that this pattern of desistance from crime is "widely accepted in forensic psychology" and that there is no debate about its existence (RK 38-39).

This pattern is not unique to criminal conduct. It is also in line with patterns observed for other risky behaviors. Dr. Kinscherff explained that suicide, self-injury, substance abuse, and unprotected sex all peak in the range of sixteen- to twenty-years-old, "then drop off with advancing age into the mid-twenties" (RK 43-44). Similarly, Dr. Galván pointed to epidemiological studies of risk-taking behaviors, including smoking, drinking, and promiscuity, showing a "peak between the ages of 18 and 19" (AG 99). Dr. Morse summed it up when he wrote, and then affirmed in his testimony, that "risky behaviors tend to peak in late adolescence and early adulthood and then decline through the 20s" (SM 106-107).

Dr. Steinberg directly tied these risky or criminal behavior patterns to the disappearance of the characteristic traits of adolescence: "[A]s people become more mature they become better able to control

their impulses, less susceptible to peer pressure, more sure of who they are, and all of that maturation leads to this desistance from criminal behavior" (LS 67-68). Dr. Steinberg also attributed desistance from crime to people's changing roles as they mature: the assumption of full-time employment, marriage, and parenthood all "make it less attractive to live a criminal lifestyle" (LS 68).

Dr. Galván explained that "neuroplasticity" is the biological basis for this enhanced capacity to change from late adolescence into adulthood. Neuroplacticity "is the way the brain changes and adopts in response to either changing circumstances or response to the environment" (AG 108). This developmental process of plasticity "primarily occurs in . . . the hippocampus," an area of the brain associated with learning (AG 110). The "first wave" of enhanced developmental neuroplasticity occurs when people are first born, but a "second wave" takes place during adolescence and persists until "the end of brain development in the mid-twenties" (AG 71-73, 109).

V. The Unreliability of Risk-Prediction

Judge Ullmann found that "[c]onsistent with [his core] scientific findings, and cognizant of forensic research showing that most

individuals who commit crimes in their late teens do not continue to commit crimes after their mid-20s, forensic psychologists have reduced their preparation of and reliance on long-term risk assessments of criminal defendants who commit violent crimes in their late teens and early 20s because of the reduced utility of such studies" (Add. 91). This finding is accurate, if not an understatement.

As Dr. Kinscherff explained, in light of this pattern of desistance and the capacity of adolescents to change as they mature into adulthood, it is difficult if not impossible to accurately predict which adolescent offenders will be among those rare few who do not desist from criminality (RK 45-46). Without knowing anything about an individual offender, a prediction of long-term desistance "will be right more often than . . . wrong" given the age-crime curve (RK 45). But one cannot predict "in any kind of reliable way" that an individual adolescent offender "is going to be that life-course persistent offender" (RK 46). There is simply no means "to look at someone at 18 and say this is a person who's still going to be offending . . . when they're 30, 40 or 50 . . . on anything like a reliable basis" (RK 47).

In contrast, once a late adolescent homicide offender has served many years in prison and reached parole eligibility in full adulthood, it is possible to predict that person's risk of recidivism because there is "a history of the life course of the individual" and because "patterns of personality, patterns of problem-solving, patterns of behavior tend to be significantly more stable in . . . adulthood than they are in adolescence and late adolescence" (RK 49-50). Dr. Kinscherff testified that there is "a consensus in the field of forensic psychology that it is harder to predict long-term risk of reoffense for late adolescents than for adults" (RK 53).

Argument

I. Imposing life without parole on late adolescents violates art. 26 of the Massachusetts Declaration of Rights and the Eighth Amendment to the U.S. Constitution because late adolescents are less culpable and more capable of change than adults in the same ways as juveniles under the age of eighteen.

A. The Relevant Precedent

Informed by scientific research, the U.S. Supreme Court and this Court have determined that the Federal and State Constitutions forbid imposition of the harshest penalties—those that doom people to die at the hands of or in the custody of the state—upon juvenile offenders

because of their diminished culpability and capacity for change. First, in *Roper v. Simmons*, 543 U.S. 551 (2005), the Supreme Court established an absolute bar on imposing the death penalty on adolescents who committed their crimes before age eighteen. *Id.* at 574. The Court rested this holding on its recognition of "[t]hree general differences between juveniles under 18 and adults [that] demonstrate that juvenile offenders cannot with reliability be classified among the worst offenders." *Id.* at 569. "First, as any parent knows and as the scientific and sociological studies . . . tend to confirm, a lack of maturity and an underdeveloped sense of responsibility are found in youth more often than in adults and . . . often result in impetuous and ill-considered actions and decisions." *Id.* (citations and internal quotation marks omitted). Second, "juveniles are more vulnerable or susceptible to negative influences and outside pressures, including peer pressure." *Id.* Third, "the character of a juvenile is not as well formed as that of an adult." *Id.* at 570. Ultimately, the Court adopted this categorical bar on the death penalty for juveniles, rather than simply allowing youth to be considered a mitigating factor at sentencing, because "[i]t is difficult even for expert psychologists to differentiate between the juvenile

offender whose crime reflects unfortunate yet transient immaturity, and the rare juvenile offender whose crime reflects irreparable corruptions." *Id.* at 573 (citing Steinberg & Scott).

Five years later, in *Graham v. Florida*, 560 U.S. 48 (2010), the Supreme Court held that the Eighth Amendment "prohibits the imposition of a life without parole sentence on a juvenile offender who did not commit homicide." *Id.* at 82. In so doing, the Court relied not just on developmental psychology, as it had in *Roper*, but also on neuroscience: "Developments in psychology and brain science continue to show fundamental differences between juvenile and adult minds. For example, parts of the brain involved in behavior control continue to mature through late adolescence." *Id.* at 68 (citing amicus briefs of the American Medical Association and the American Psychological Association).

Then, in *Miller v. Alabama*, 567 U.S. 460 (2012), the Court held that mandatory LWOP sentences for any offense committed before age eighteen violates the Eighth Amendment. *Id.* at 465. The Court recognized that "*Roper* and *Graham* establish that children are constitutionally different from adults for purposes of sentencing" and

reiterated the science on which those two decisions rested. *Id.* at 471-472. However, unlike the categorical bar on the death penalty adopted in *Roper* or on LWOP for non-homicide offenses in *Graham*, the *Miller* Court only prohibited *mandatory* LWOP sentences for homicide offenders under eighteen. *Id.* at 474. Mandatory LWOP sentences are unconstitutional, the Court held, because they "prevent the sentencer from taking account" of the offender's age and related traits. *Id.*

One year later, in *Diatchenko v. District Attorney for the Suffolk District*, 466 Mass. 655 (2013), this Court went further than the *Miller* Court, returning to the *Graham* and *Roper* categorical approach by holding that, under art. 26 of the Massachusetts Declaration of Rights, a sentence of LWOP can never be imposed on an individual for any offense committed prior to age eighteen. *Id.* at 671. In reaching that conclusion, this Court reiterated the "three significant characteristics differentiating juveniles from adult offenders," gleaned from "science, social science, and common sense":

(1) "a lack of maturity and an underdeveloped sense of responsibility, leading to recklessness, impulsivity, and heedless risk-taking";

(2) greater vulnerability "to negative influences and outside pressures, including from their family and peers"; and

(3) a less "well formed" "character," with "traits [that] are less fixed and . . . actions less likely to be evidence of irretrievable depravity."

Id. at 660 (citations and internal quotation marks omitted).

In light of these "distinctive attributes of juvenile offenders," this Court found that the "penological justifications for imposing life in prison without the possibility of parole—incapacitation, retribution, and deterrence"—are "suspect." *Id.* at 670-671. "With [this] current scientific evidence in mind," this Court held that even "the discretionary imposition of a sentence of [LWOP] on juveniles who are under the age of eighteen when they commit [their offense] violates the prohibition against 'cruel or unusual punishment[]' in art. 26." *Id.* at 671.

In sum, this line of cases establishes that because young people, by virtue of their social, psychological, and neurobiological immaturity, are more impulsive, reckless, and risk-prone than adults, are more susceptible to outside influences, and are more likely to change as they mature into adulthood, the imposition of mandatory LWOP offends the Eighth Amendment, and the imposition of even discretionary LWOP offends art. 26.

B. The Record Regarding Late Adolescents

The record in this case is robust, clear, and irrefutably supports Judge Ullmann's findings: a convergence of evidence from developmental psychology, neuroscience, and real-world data shows that compared to adults, late adolescents, like those under eighteen, are more prone to recklessness, impulsivity, and risk-taking; are more susceptible to peer-influence; and are more capable of changing as they mature. Because these were the very reasons the Supreme Court struck down mandatory LWOP and this Court struck down any imposition of LWOP for those under eighteen, this Court should do the same for late adolescents.

1. Recklessness, Impulsivity, and Risky Behavior

To an even greater degree than younger adolescents, late adolescents are more inclined than adults to engage in "recklessness, impulsivity, and heedless risk-taking." *Diatchenko,* 466 Mass. at 660. As Judge Ullmann found:

> As a group, 18 through 20-year-olds in the United States and other countries have less 'self-regulation,' i.e., they are less able to control their impulses in emotionally arousing situations, than individuals age 21-22 and older; their reactions in these situations are

> more similar to those of 16 and 17-year-olds than they are to those age 21-22 and older.
>
> As a group, 18 through 20-year-olds in the United States and other countries are more prone to 'sensation seeking,' which includes risk-taking in pursuit of rewards, than are individuals under age 18 and over age 21.[8]

Indeed, a convergence of evidence from developmental psychology, neuroscience, and real-world data makes these findings crystal clear.

In developmental psychology, fifteen years of research has shown that "reward sensitivity . . . reaches a peak in late adolescence and then declines," self-control "plateaus at around age 22," and late adolescents are "more affected by emotional factors" (LS 61-62). The ability of late adolescents to reason and exercise self-control is particularly impaired under circumstances of "hot cognition," or emotional arousal (LS 48-49, 142; AG 77-83). On these points, Drs. Steinberg, Galván, and Morse all agree (LS 48-49, 142; AG 77-83; SM 95-96).[9] Dr. Galván noted that the research in developmental psychology is now as compelling for late adolescents as it is for younger adolescents (AG 131).

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[8] *See* Add. 89.

[9] The fourth expert, Dr. Kinscherff, did not offer testimony on this topic.

Findings in neuroscience show the neurobiological basis for these deficiencies in late adolescents. Structural MRI technology, which has existed for half a century, has revealed that development of the brain—more precisely, cortical thinning or pruning—continues until the mid to late twenties, with the prefrontal cortex being "the last brain region to undergo this thinning process" (AG 37, 43-44, 62-63). The prefrontal cortex is the "seat . . . of higher cognition," including "basic thinking, reasoning, [and] decision-making," the "abilities that . . . make[] us adults" (AG 63-64). And multiple fMRI studies have shown that the ventral striatum, which correlates with risk-taking behaviors, is more active among adolescents than adults (AG 66-68, 69-70). Even Professor Morse, who discussed general concerns with certain types of neuroimaging studies, "wouldn't quibble with that data" from "a number of studies" in both neuroscience and behavioral psychology showing that the brain systems that promote reward- and sensation-seeking are more active for eighteen-, nineteen-, and twenty-year olds (SM 80).

Finally, real-world data also demonstrates that late adolescents engage in riskier behaviors than adults, *and even more so than younger*

adolescents, as the Remand Justice found. Suicide, self-injury, substance abuse, and unprotected sex all peak in late adolescence and decline in the twenties (RK 43-44; AG 99). Professor Morse agreed that the data demonstrated this very pattern of heightened risky behaviors in late adolescence followed by a decline through the twenties (SM 106-107). In light of this peak of risk-taking in late adolescence, it is no surprise that car rental companies do not rent to adolescent drivers and that car insurance rates are higher for this age cohort, as Dr. Kinscherff noted (RK 134-135). Therefore, where propensity for engaging in risky-behavior was one of the traits of adolescence that led this Court to strike down LWOP for offenders under the age of eighteen, the even stronger propensity for risk in late adolescence militates in favor of finding LWOP unconstitutional for eighteen-, nineteen-, and twenty-year-olds.

In sum, data from developmental psychology, neuroscience, and the real world all converge on the same conclusion: late adolescents are more prone to recklessness, impulsivity, and risk-taking—the first character trait of adolescence that renders young people as a class less culpable for their criminal offenses.

2. Peer Influence

Like juveniles, late adolescents are more swayed than adults by "outside pressures, including from their . . . peers." *Diatchenko*, 466 Mass. at 660. On this point, Judge Ullmann made the following finding: "As a group, 18 through 20-year-olds are more susceptible to peer influence than are individuals age 21-22 and older, and the presence of peers makes 18 to 20-year-olds more likely to engage in risky behavior."[10] All four experts who testified in this case and in Robinson agreed that research and other data support this core finding.

Dr. Steinberg explained that "a lot of our work in our laboratory has looked at how the presence of peers affects decision-making and risk-taking among people of different ages," and these studies show "a strong peer effect" among late adolescents, meaning they engage in increased risky behavior when peers are present whereas peers do not have this influence once people are "24 or older" (LS 43). The large-scale, international study discussed earlier was among the studies showing this peer effect on risk-taking among the eighteen- to twenty-

[10] *See* Add. 90.

one-year-old cohort, "but not among people who are older" (LS 142). Dr. Steinberg testified that these studies show this peer effect persists into "the early twenties" (LS 159). Dr. Galván concurred that both research studies and "converging evidence from other fields, such as epidemiology," show that late adolescents are "more likely to change their behavior," particularly risk-taking conduct, "in the presence of their peers . . . than older individuals" (AG 106-107). Dr. Kinscherff noted two studies demonstrating that fourteen- to nineteen-year-olds "have an enhanced sensitivity to the pressure of peers in making decisions compared to persons above the age of 25" (RK 116). And Professor Morse agreed that research supports the conclusion that late adolescents "are uniquely susceptible to peer influence . . . especially when it comes to risky behavior" (SM 82).

Thus, the second unique attribute of youth that rendered LWOP unconstitutional for those under eighteen—susceptibility to peer influence—is also a characteristic of late adolescence, further supporting an extension of that constitutional prohibition to eighteen-, nineteen-, and twenty-year-olds.

3. Capacity for Change

Like juveniles, late adolescents, compared to adults, lack a "well formed" character, have "traits [that] are less fixed," and their actions are "less likely to be evidence of irretrievable depravity." *Diatchenko*, 466 Mass. at 660. On this point, Judge Ullmann made two findings:

> As a group, 18 through 20-year-olds have greater capacity to change than older individuals because of the plasticity of the brain during these years.[11]
>
> [M]ost individuals who commit crimes in their late teens do not continue to commit crimes after their mid-20's . . ..[12]

These findings rest on an indisputable record.

All four experts testified consistently that the age-crime curve shows that criminal conduct peaks in late adolescence, but that approximately ninety percent of offenders then desist from criminality as they mature into their twenties (LS 35-36, 67-68, 107; AG 112; SM 96-97; RK 29). This long-recognized pattern provides powerful evidence of the capacity of late adolescents to change as they mature into adulthood. As Dr. Morse put it, violent crime "is a young person's game"

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[11] Add. 90.

[12] Add. 91.

and criminal conduct in adolescence is "not an indication of an indelible personality trait" (SM 98, 107). And it is not just violent crime. Other risky behaviors also peak during late adolescence and then drop off precipitously in the mid-twenties, further showing that late adolescents do not have well-formed personalities and should not be deemed irretrievably depraved (RK 29-30, 43-44; SM 106-107).

Dr. Steinberg explained that myriad developmental, social, and neurobiological factors contribute to the enhanced ability of late adolescents to change their characters and their resulting conduct as they mature (LS 67-69). As Judge Ullmann recognized in his findings and Dr. Galván explained in her testimony, this "capacity for change" that is characteristic of late adolescence stems in part from the fact that neuroplasticity—"the [brain's] ability to change in response to the environment"—is greater during late adolescence than in adulthood (AG 71-73, 111-112).

In short, the record establishes that late adolescents still do not have well-formed characters but instead possess great capacity to change as they mature into adulthood, the third principal reason art. 26 should forbid the imposition of LWOP on late adolescents.

C. Constitutional Implications

This record can lead to only one conclusion: the imposition of LWOP is unconstitutional as applied to late adolescents. To find otherwise would require this Court to ignore the record, precedent, or both. This Court should respect both Judge Ullmann's findings of fact premised on an unmistakable record and its own precedent that forbids dooming young people to die in prison for something they did while still in this period of developmental immaturity. The Court should hold that any imposition of LWOP on a late adolescent violates art. 26 and that mandatory imposition of LWOP on such young people violates the Eighth Amendment.

II. Drawing the Constitutional line for the imposition of LWOP at age twenty-one is not only consistent with the science but also with the line society draws between childhood and adulthood in many relevant domains.

All the U.S. Supreme Court and SJC decisions prohibiting the imposition of the death penalty or LWOP on young people—from *Roper* to *Diatchenko*—have limited their relief to defendants who were younger than eighteen at the time of their offenses. But only one of those decisions provided any justification for this age limitation. In *Roper*, the Supreme Court acknowledged that the "qualities that

distinguish juveniles from adults do not disappear when an individual turns 18" but determined that "a line must be drawn." *Roper*, 543 U.S. at 574. Despite the imprecise nature of a constitutional cutoff at age eighteen, the Court held that this line was appropriate because "[t]he age of 18 is the point where society draws the line for many purposes between childhood and adulthood." *Id.* All the subsequent cases invalidating LWOP sentences for young defendants have adhered to this age cutoff without any discussion about whether it is supported by the available science.

While the Supreme Court set age eighteen as the constitutional cutoff for the death penalty in *Roper*, it recognized that these kinds of constitutional lines are not cast in stone. As the Court noted, it had held seventeen years earlier in *Thompson v. Oklahoma*, 487 U.S. 815, 837-838 (1988), that the Eighth Amendment's cutoff for capital punishment was sixteen, rather than eighteen. In *Roper*, it extended this rule based on its finding that "[t]he logic of *Thompson* extends to those who are under 18." *Roper*, 543 U.S. at 574. In reaching this conclusion, the Court rejected its prior contrary holding, announced the year after it decided *Thompson*, that "the imposition of capital punishment on any

person who murders at 16 or 17 years of age . . . does not offend the Eighth Amendment's prohibition against cruel and unusual punishment." *Stanford v. Kentucky*, 492 U.S. 361, 380 (1989). The Court recognized that while a line must be drawn for this kind of categorical constitutional rule, that line must be rational and subject to change as scientific research develops. *See also Moore v. Texas*, 137 S. Ct. 1039, 1053 (2017) (holding that when determining whether an inmate's execution would violate the Eighth Amendment due to intellectually disability, States must give proper deference to the "medical community's current standards" that reflect "improved [scientific] understanding over time").

The relevant constitutional decisions have thus looked to two sources when deciding the appropriate age cutoff: (1) the current scientific understanding of adolescent psychological and neurological development; and (2) society's traditional and common age cutoff for adult privileges and responsibilities. As discussed above, the science now unequivocally supports age twenty-one, rather than eighteen, as the proper age cutoff for the imposition of LWOP. As discussed below, a

more nuanced examination of society's relevant legal age limits also supports twenty-one as the appropriate cutoff.

While the *Roper* Court was correct that age eighteen is "where society draws the line *for many purposes* between childhood and adulthood," *Roper*, 543 U.S. at 574 (emphasis added), eighteen is not society's sole age of majority. As the Washington Supreme Court recently recognized, "[t]wenty-one had been the 'near universal' age of majority in the United States from its founding until 1942 when 'wartime needs prompted Congress to lower the age of conscription from twenty-one to eighteen, a change that would eventually lead to the lowering of the age of majority generally.'" *Matter of Monschke*, 197 Wash. 2d 305, 314 (2021), citing Vivian E. Hamilton, "Adulthood in Law and Culture," 91 *Tulane L. Rev.* 55, 57 (2016). *See also Horsley v. Trame*, 808 F.3d 1126, 1130 (7th Cir. 2015) ("During the founding era, persons under 21 were considered minors.").

In Massachusetts, and across the country, twenty-one remains the age cutoff for many privileges and responsibilities of adulthood. And in some instances, the age has been raised from eighteen to twenty-one as our scientific and real-world understanding of late adolescence has

grown, especially for the kinds of activities that require good judgment under conditions of hot cognition.

Examples of a cutoff at age twenty-one for adult privileges and responsibilities under Massachusetts law include the following:

- **Alcohol**: As Judge Ullmann noted, the Massachusetts drinking age has fluctuated over the years, "decreasing from 21 to 18 before reverting back to 21" in 1984 (Add. 103). The 1984 modification was prompted by Congress's passage of the National Minimum Drinking Age Act, which made Federal highway funding partially contingent on States' raising the drinking age to twenty-one. *See South Dakota v. Dole*, 483 U.S. 203, 205 (1987). This Act was passed on the recommendations of a Presidential commission formed to study the causes of alcohol-related highway accidents and fatalities. *Id.* at 209. The fact that late adolescents take greater risks and make poorer decisions than their older counterparts after drinking alcohol is unsurprising in light of recent scientific research on late adolescent development.
- **License to Carry a Firearm**: Under Massachusetts law, eighteen-year-olds are permitted, without the permission of a parent or

guardian, to obtain firearms identification (FID) cards that permit them to possess non-large-capacity shotguns and rifles. G.L. c. 140, § 129B(1)(v). But since 1998, Massachusetts has had a minimum age of twenty-one to obtain a license to carry (LTC) a handgun on the streets and public places of the Commonwealth. G.L. c. 140, § 131(d)(iv). This distinction makes sense. While shotguns and rifles are generally used in controlled settings for hunting and target shooting, concealed handguns are used for self-defense. Responsibly deciding whether to use deadly force against another person, especially in public places surrounded by innocent bystanders, requires the ability to make quick decisions under extraordinarily stressful circumstances. The science, confirmed by crime data, tells us that late adolescents do not yet have the cognitive capacity to make these kinds of decisions wisely. *See Powell v. Tompkins*, 926 F. Supp. 2d 367, 392 (D.Mass. 2013) (holding that "data on national gun violence across age groups . . . demonstrate that the age-based restriction" on issuance of LTCs

"is substantially related to the achievement" of the Massachusetts Legislature's public-safety objective).[13]

- **Police Officer**: Under Massachusetts law, "[n]o person shall be eligible for original appointment to the position of police officer in a city or town until that person has reached the age of 21." G.L. c. 31, § 58. This age requirement makes sense. As this Court has recognized, "[t]he day-to-day work of a police officer on patrol is demanding in every respect, physically and mentally." *City of New Bedford v. Mass. Comm'n Against Discrimination*, 440 Mass. 450, 467 (2003). "[P]olice officers are often forced to make split-second judgments—in circumstances that are tense, uncertain, and rapidly evolving—about the amount of force that is necessary in a

[13] In 2021, Massachusetts, along with seventeen other states, joined an amici curiae brief filed in the U.S. Court of Appeals for the Fourth Circuit supporting the constitutionality of 18 U.S.C. § 922(b)(1), a Federal statute that prohibits the sale of firearms, other than rifles and shotguns, to people under the age of twenty-one. In the brief, the States asserted that "[c]ontemporary scientific evidence explains why this conclusion [that people under the age of twenty-one should not be permitted to purchase these kinds of firearms] was a reasonable one for Congress to draw: Because the human brain does not fully develop until one's mid-to-late twenties, young people tend to have lower self-control and make more impulsive decisions." Brief of Amici Curiae Illinois et al. in Support of Rehearing or Rehearing en Banc, at 10, *Hirschfeld v. ATF*, 4th Cir. No. 19-2250.

particular situation." *Commonwealth v. Adams*, 416 Mass. 558, 568 (1993). This is precisely what we know late adolescents do not do well: use good judgment under conditions of hot cognition.

- **Tobacco**: In 2018, Massachusetts raised the minimum age for the purchase of tobacco from eighteen to twenty-one. G.L. c. 270, § 6(b), as amended by 2018 Mass. Acts ch. 157, § 9. As this case's record on peer influence and future-oriented decision making in late adolescence would suggest, there are strong public-health rationales underlying this change in the age requirement. *See Mitchell v. Atkins*, 483 F. Supp. 3d 985, 996 (W.D. Wash. 2020) (noting that the Institute of Medicine predicts that hundreds of thousands of lives will be saved by "[r]aising the age to purchase tobacco to 21" (citations omitted)). In 2019, Congress raised the minimum age for the purchase of tobacco products to twenty-one nationally. *See* 21 U.S.C. § 387f(d)(5).
- **Marijuana**: "In November of 2016, Massachusetts voters approved a ballot initiative that legalized the recreational possession and use of marijuana by persons at least twenty-one years of age."

Commonwealth v. Long, 482 Mass. 804, 811 (2019). As with alcohol and tobacco, this age cutoff makes sense in light of current scientific research on late-adolescent development.

- **Gambling**: When Massachusetts legalized casino-style gambling, it set a strict age requirement: "No person under the age of 21 shall be permitted to wager or be in a gaming area." G.L. c. 23K, § 25(h). Casinos are emotionally charged, exciting places, and gambling itself is a potentially addictive activity. As the record in this case makes clear, adolescents under the age of twenty-one do not have the maturity needed to make good decisions under those kinds of conditions.

These examples show that, while Massachusetts law does draw the line between childhood and adulthood at age eighteen for many purposes, it also sets that line at twenty-one for many other adult privileges and obligations—especially those that require sound judgment under conditions of hot cognition. Consistent with the reasoning of *Roper*, the question for this Court is whether the current science on adolescent development supports setting the constitutional cutoff for the imposition of life-without-parole sentences at age eighteen

or age twenty-one. The record in this case supports only one answer to that question: The line must be drawn at age twenty-one.

III. Evolving standards of decency in Massachusetts and elsewhere recognize that late adolescents' unique characteristics must be accounted for when imposing and carrying out criminal sentences.

In the context of a challenge to a sentence imposed on a juvenile homicide offender, this Court explained that art. 26 "draw[s] its meaning from the evolving standards of decency that mark the progress of a maturing society, such that developments in the area of juvenile justice in judicial opinions and legislative actions at the State, Federal, and international levels help to inform our understanding of what art. 26 protects." *Commonwealth v. Okoro*, 471 Mass. 51, 61 (2015) (citation and internal quotation marks omitted). There is a growing recognition—in Massachusetts, around the country, and internationally—that a late adolescent's stage of development is a mitigating sentencing factor that should be taken into account when imposing and carrying out criminal punishment.

A. Massachusetts

Since 2017, the Massachusetts Sentencing Guidelines have instructed judges to consider the developmental characteristics of

"emerging adults," ages eighteen through twenty-one, "when sentencing such individuals[,] even if the individuals are subject to the jurisdiction of adult court." Massachusetts Sentencing Commission, *Advisory Sentencing Guidelines*, at 4 (Nov. 2017). In 2018, the Legislature authorized the Department of Correction and the county houses of correction to "establish young adult correctional units" to provide "targeted interventions, age appropriate programming and a greater degree of individual attention" to incarcerated people aged eighteen to twenty-four. G.L. c. 127, § 48B. Years earlier, the Legislature similarly recognized the unique developmental needs of late adolescents when it allowed the Department of Youth Services to maintain custody of young people adjudicated as youthful offenders up to age twenty-one. *See* G.L. c. 119, § 58.

In 2020, the Task Force on Emerging Adults in the Criminal Justice System, formed by the Massachusetts Legislature, issued a lengthy report describing the various ways "[e]merging adults (ages 18-24) in the criminal justice system are a unique population that requires developmentally-tailored programming and services." Task Force on Emerging Adults in the Criminal Justice System, *Emerging Adults in*

the Massachusetts Criminal Justice System , at 6 (2020). Since 2021, Hampden County, with the support and participation of its District Attorney, has operated a specialty court for emerging adults that "aims to align opportunities for accountability and transformation with the unique needs and developmental stage of this age group." Douglas Cook, "A Second Chance: Emerging Adult Court of Hope Offers Fresh Start," *Springfield Republican* (June 19, 2021). And in this case, three additional District Attorneys—representing the Suffolk, Berkshire, and Northwestern Districts—have filed pleadings asserting that the imposition of mandatory life-without-parole sentences violates art. 26 by failing to account for the mitigating effect of youth. *See* Commonwealth's Supplemental Response to the Defendant's Motion for a New Trial (April 7, 2022) (Superior Court docket entry no. 194); Letter Filed for the District Attorneys for the Northwestern and Berkshire Districts as Amici Curiae in *Commonwealth v. Watt* , SJC-11693 (Nov. 15, 2019) (SJC docket entry no. 108).

While there is not universal agreement about all of the legal and policy implications, there is widespread consensus in Massachusetts that late adolescents are a distinct population from older adult

defendants and that these differences should be accounted for in the criminal legal system.

B. Other U.S. Jurisdictions

Two State supreme courts recently held that mandatory LWOP is unconstitutional under their State constitutions. *See Matter of Monschke*, 197 Wash. 2d 305 (2021); *People v. Parks*, --- N.W.2d ---, 2022 WL 3008548 (Mich. 2022). Before that, U.S. Supreme Court and State supreme court decisions recognized the relevance at sentencing of young people's stage of development, even after they turn eighteen. *See, e.g.*, *Gall v. United States*, 552 U.S. 38, 57-58 (2007) (holding that Federal judge properly gave below-guidelines sentence based in part on fact that defendant was twenty-one at time of offense and "[r]ecent studies on the development of the human brain conclude that human brain development may not become complete until the age of twenty-five . . . [and] that there is no bold line demarcating at what age a person reaches full maturity"); *State v. O'Dell*, 358 P.3d 359, 368 (Wash. 2017) (en banc) (holding that eighteen-year-old "defendant's youthfulness [could] support an exceptional sentence below the standard [sentencing] range applicable to an adult felony defendant,"

and that contrary earlier decision had "been thoroughly undermined by subsequent scientific developments").

In 2018, the American Bar Association passed a resolution calling for the elimination of the death penalty for people who were ages eighteen through twenty-one at the time of their offenses. American Bar Association Resolution 111 (2018). The ABA based this resolution on (1) the "growing scientific consensus that key areas of the brain relevant to decision-making and judgment continue to develop into the early twenties" and (2) the "corresponding public understanding that our criminal justice system should also evolve in how it treats late adolescents." *Id.*

Like Hampden County, jurisdictions in at least three States (Illinois, California, and New York) have created emerging-adult specialty courts, and at least three States, in addition to Massachusetts, (Mississippi, Wisconsin, and California) have established emerging-adult units in their prison systems. Juvenile Law Center, *Rethinking Justice for Emerging Adults: Spotlight on the Great Lakes Region*, at 16, 17 (2020). Finally, at least thirteen states (Alabama California, Colorado, Florida, Georgia, Illinois, Indiana, Michigan, New Jersey,

New York, South Carolina, Vermont, and Virginia) have created a separate legal category of "youthful offender"—criminal defendants in their late teens or early twenties who, depending on the State, are eligible for more lenient sentencing options, potential expungement of criminal records, and/or developmentally appropriate treatment services. *Id.* at 88-92.

C. Other Countries

In Europe, there is "both a history and widespread practice of providing more developmentally appropriate responses to emerging adults involved in the justice system, with 28 out of 35 European countries having special legal provisions for youth over age 18." Sibella Matthewsa et al., "Youth Justice in Europe: Experience of Germany, the Netherlands, and Croatia in Providing Developmentally Appropriate Responses to Emerging Adults in the Criminal Justice System," *Justice Evaluation Journal* (2018). In some countries, these provisions allow for the mitigation of otherwise applicable adult sentences, while in others, they permit defendants over the age of eighteen to be sanctioned in the same manner as juveniles under the age of eighteen. *Id.*

* * *

Evolving standards of decency in Massachusetts, the United States, and Europe converge with the scientific consensus that late adolescents have important, relevant characteristics that should be accounted for when making decisions that will impact their lives for decades to come. Mandatorily condemning young people to die in prison for crimes they committed as late adolescents cannot be squared with these evolving standards of decency.

IV. Maintaining eighteen as the age at which LWOP may be imposed creates a constitutionally intolerable risk of sentencing young people to die in prison who were too immature at the time of offense to merit this harshest possible punishment.

In 2002, the U.S. Supreme Court ruled that executing intellectually disabled people offends the Eighth Amendment. *See Atkins v. Virginia*, 536 U.S. 304, 321 (2002). Twelve years later, in *Hall v. Florida*, 572 U.S. 701 (2014), the Court considered the constitutionality of a Florida statue that barred anyone with an IQ score above 70 from presenting a claim of intellectual disability to challenge a death sentence. The Court found that Florida's strict reliance on an IQ score conflicts with "established medical practice"

both for diagnosing intellectual disability and interpreting IQ tests. *Id.* at 712. By ignoring "the professional community's teachings" and adopting an approach for determining intellectual disability that "goes against the unanimous professional consensus," Florida "risk[ed] executing a person who suffers from intellectual disability." *Id.* at 721, 722, 723 (citation and internal quotation marks omitted). The Supreme Court held that this scientifically unsound scheme, giving rise to such a grave risk of error, was invalid under the Eighth Amendment. *Id.* at 723.

The professional consensus in the scientific community of developmental psychologists, neuroscientists, and forensic psychologists is that eighteen is not the age when adolescents attain the measures of maturity that justify subjecting them to LWOP. Instead, the scientific consensus, supported by a robust body of scientific research, is that, on average, eighteen-, nineteen-, and twenty-year-olds are still socially, psychologically, and neurobiologically immature in ways that render them less culpable for their offenses.

If this Court maintains eighteen as the age at which an offender can receive a sentence of LWOP, people who should not receive the

harshest available penalty will receive it. To avoid that constitutionally intolerable result and reconcile Massachusetts sentencing with scientific consensus, this Court should raise the age cutoff for LWOP to twenty-one.

V. A categorical bar for late adolescents is necessary, because it is not possible for sentencing judges to reliably predict which late adolescents are among the rare few who are beyond redemption, the very reason this Court adopted such a categorical bar on LWOP for those under eighteen in *Diatchenko*.

Because it is not possible to reliably determine which late adolescent offenders are beyond redemption, this Court should hold that any imposition of LWOP on late adolescents violates art. 26, as it did for younger adolescents in *Diathchenko*. In adopting an absolute bar on LWOP for juveniles in *Diatchenko,* this Court articulated an unassailable reason:

> Given current scientific research on adolescent brain development, and the myriad significant ways that this development impacts a juvenile's personality and behavior, a conclusive showing of traits such as an 'irretrievably depraved character,' *Roper*, 543 U.S. at 570, can never be made, with integrity, by the Commonwealth at an individualized hearing to determine whether a sentence of life without parole should be imposed on a juvenile homicide offender. Simply put, because the brain of a juvenile is not fully developed, either structurally or functionally, by the age of eighteen, a judge cannot find with confidence that a

> particular offender, at that point in time, is irretrievably depraved. Therefore, it follows that the judge cannot ascertain, with any reasonable degree of certainty, whether imposition of this most severe punishment is warranted.

466 Mass. at 669-670.

The record here establishes unequivocally that the same is true for late adolescents. In his findings, Judge Ullmann stated, "Consistent with the above scientific findings [about the unique attributes of late adolescents], and cognizant of forensic research showing that most individuals who commit crimes in their late teens do not continue to commit crimes after their mid-20s, forensic psychologists have reduced their preparation of and reliance on long-term risk assessments of criminal defendants who commit violent crimes in their late teens and early 20s because of the reduced utility of such studies."[14] If anything, this finding understates the difficulty of making accurate long-term risk predictions for late-adolescents when they are still young.

All four experts agreed with Judge Ullmann that most people who commit even serious crimes like murder will desist from criminal behavior once they reach full maturity in their early- to mid-twenties

[14] *See* Add. 91.

(LS 35-36, 67, 107; AG 112; SM 107; RK 29). Given this likelihood, the question is whether a sentencing judge can predict with any measure of reliability whether a particular person will be among that small group of lifetime persistent offenders. Dr. Kinscherff, a forensic psychologist with expertise in risk assessment, explained that, for late adolescents, just like their younger counterparts, the answer is plainly no: "I would not try to look at somebody at 18 and say this is a person who's still going to be offending in prison when they're 30, 40 or 50. We simply don't have the scientific ability to do that on anything like a reliable basis" (RK 47). Dr. Kinscherff further testified that among forensic psychologists "most immersed in the research literature and who are . . . leaders and teachers in this field," there is a consensus that "one should not do long-term risk prediction for late adolescent homicide offenders" (RK 48).

Conversely, after a late-adolescent offender has matured and spent years in prison, one could more reliably predict the person's risk of reoffense at a parole hearing (RK 49). The person would have a lengthy post-maturation history to review in order to determine if he or she "is one of those folks who failed to get onto what we would

ordinarily expect to see, which is the self-desistance trajectory" (RK 49-50).

It is impossible to determine "with integrity" or "with any reasonable degree of certainty" if an offender, at age eighteen, nineteen, or twenty, is the rare person who must be kept out of society for the remainder of his or her life. This Court should not saddle sentencing judges with this impossible task. To do so would inevitably result in the imprisonment of people for life who will not ultimately deserve or require permanent incapacitation. Instead, this Court should follow the scientifically and constitutionally sound path it took in *Diatchenko* and grant late adolescent offenders the opportunity to show, years down the line at a parole hearing, whether they are capable of living responsibly outside the prison walls. At that point, the Parole Board will have the record needed to make this determination with integrity and a reasonable degree of certainty.

VI. Even if this Court does not impose a categorical bar on all LWOP for late adolescents, it should hold that these sentences are presumptively unconstitutional and can only be imposed if the Commonwealth overcomes that presumption of unconstitutionality.

In the past year and a half, two State supreme courts have held that imposing mandatory LWOP sentences on late adolescents is unlawful under their State constitutions. In March 2021, the Washington Supreme Court held that the State's "aggravated murder statute's requirement of LWOP for all defendants 18 and older, regardless of individual characteristics," was unconstitutional as applied to defendants who were eighteen, nineteen, or twenty at the time of their offenses. *Matter of Monschke*, 197 Wash. 2d at 329. The Court held that sentencing courts must have the discretion to decide whether, in light of "the mitigating qualities of youth," an individual late adolescent is deserving of LWOP. *Id.* Like this Court, the Washington Supreme Court had previously held that *all* LWOP sentences violated its State Constitution when imposed on juvenile offenders. *See State v. Bassett*, 192 Wash. 2d 67, 92 (2018). In contrast to this Court now, the Washington Court was not presented with the question of whether all LWOP sentences should be barred for late

adolescents. Rather, as the Court noted the *Monschke* "petitioners ha[d] neither argued nor shown that LWOP would be *categorically* unconstitutional as applied to older defendants." *Monschke*, 197 Wash. 2d at 325. Declining to reach the question of whether discretionary LWOP is unconstitutional for this age cohort was consistent with Washington jurisprudence. *Cf. State v. Houston-Sconiers*, 188 Wash. 2d 1, 21 n.6 (2017) (refusing to address issue not raised below, even when argued by petitioners in supplemental briefing before the Court).

In July 2022, the Michigan Supreme Court came to a similar conclusion, holding that mandatory LWOP sentences imposed on defendants who were eighteen at the time of their offenses violate "the Michigan Constitution's ban on 'cruel or unusual' punishment" because they fail "to take into account the mitigating characteristics of youth, specifically late-adolescent brain development." *People v. Parks*, --- N.W.2d ---, 2022 WL 3008548, * 5 (Mich. 2022). The Michigan Court limited its decision to eighteen-year-olds because the defendants in that case were eighteen at the time of their offenses, and the Court thus did not have to "address the Michigan constitutional requirements for sentencing offenders who were over 18 years old at the time of the

offense." *Id.* at *10. The Court extended the rules it had already applied to offenders who were under age eighteen at the time of their crimes, holding that there would be a presumption against LWOP for eighteen-year-old offenders and that LWOP could only be imposed if the prosecution overcame this presumption by clear and convincing evidence at a sentencing hearing addressing the distinctive characteristics of youth. *Id.* at *8, 21.

Like the Michigan Supreme Court, this Court should apply its earlier precedent on juvenile LWOP to late adolescents and hold that all LWOP sentences, whether mandatory or discretionary, violate art. 26's ban on cruel or unusual punishment when imposed on people who were younger than twenty-one at the time of their offenses. The record here clearly establishes that the logic underlying the *Diatchenko* remedy—that a conclusive showing of irretrievable depravity can never be made with integrity at a juvenile homicide offender's sentencing hearing—also applies to late adolescents. This Court was right to forbid all LWOP for people who were under eighteen at the time of their crimes, and it should now apply the same rule to all people who were under twenty-one at the time of their offenses.

If, despite the clarity of the record, this Court decides to step away from its *Diatchenko* rule, it should adopt a presumption of unconstitutionality like the one the Michigan Supreme Court applied in *Parks*. This Court has already applied this kind of presumption to another category of young offenders. In *Commonwealth v. Perez*, the Court held that a sentence imposed on a juvenile for a nonmurder offense where the parole ineligibility period is longer than "that applicable to a juvenile convicted of murder" is "presumptively disproportionate." 477 Mass. 677, 679, 686 (2017). This presumption "is conclusive" unless the Commonwealth meets its burden of establishing at a hearing that "extraordinary circumstances" justify the sentence. *Id.* No less should be required of the Commonwealth before an adolescent is deemed beyond redemption and sent to prison with no hope for release.

Conclusion

The Court should (1) hold that the language in G.L. c. 265, § 2, prohibiting parole eligibility violates art. 26 and the Eighth Amendment when applied to defendants who were under age twenty-one at the time of their offenses; and (2) vacate Sheldon Mattis's LWOP sentence and order the Superior Court to impose a sentence of life with the possibility of parole after fifteen years.

Respectfully submitted,

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November 2022

Addendum

Article 26, Massachusetts Declaration of Rights 74

Eighth Amendment, U.S. Constitution 74

G.L. c. 265, § 2 74

Findings of Fact on Brain Development and Social Behavior and Ruling of Law on Whether Mandatory Life-Without-Parole Sentences for Defendants Age 18 Through 20 at the Time of Their Crimes Violates the Massachusetts Declaration of Rights (July 20, 2022) 75

Article 26, Massachusetts Declaration of Rights

No magistrate or court of law, shall demand excessive bail or sureties, impose excessive fines, or inflict cruel or unusual punishments.

* * *

Eighth Amendment, United States Constitution

Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

G.L. c. 265, § 2

(a) Except as provided in subsection (b), any person who is found guilty of murder in the first degree shall be punished by imprisonment in the state prison for life and shall not be eligible for parole pursuant to section 133A of chapter 127.

(b) Any person who is found guilty of murder in the first degree who committed the offense on or after the person's fourteenth birthday and before the person's eighteenth birthday shall be punished by imprisonment in the state prison for life and shall be eligible for parole after the term of years fixed by the court pursuant to section 24 of chapter 279.

(c) Any person who is found guilty of murder in the second degree shall be punished by imprisonment in the state prison for life and shall be eligible for parole after the term of years fixed by the court pursuant to section 24 of chapter 279.

(d) Any person whose sentence for murder is commuted by the governor and council pursuant to section 152 of chapter 127 shall thereafter be subject to the laws governing parole.

COMMONWEALTH OF MASSACHUSETTS

SUFFOLK, ss.

SUPERIOR COURT
CRIMINAL ACTION
No. 0084CR10975
SJC-09265
No. 1184CR11291
SJC-11693

COMMONWEALTH
vs.

JASON ROBINSON

COMMONWEALTH
vs.

SHELDON MATTIS

FINDINGS OF FACT ON BRAIN DEVELOPMENT AND SOCIAL BEHAVIOR AND RULING OF LAW ON WHETHER MANDATORY LIFE-WITHOUT-PAROLE SENTENCES FOR DEFENDANTS AGE 18 THROUGH 20 AT THE TIME OF THEIR CRIMES VIOLATES THE MASSACHUSETTS DECLARATION OF RIGHTS

I. INTRODUCTION

Pursuant to G.L. c. 265, § 2(a), the Massachusetts statute that governs the penalties for murder, the defendant in Suffolk Co. Case No. 0084CR10975, Jason Robinson ("Robinson"), and the defendant in Suffolk Co. Case No. 1184CR11291, Sheldon Mattis ("Mattis"), are serving mandatory sentences of life in prison without the possibility of parole based on their convictions for first-degree murder in separate crimes committed when they were respectively 19 and 18 years old.

As of December 2021, both cases were pending before the Supreme Judicial Court ("SJC") following evidentiary hearings in the Superior Court before two different judges on

issues related to the brain development and social behavior of 18 through 20-year-olds, in some instances including 21-year-olds.

On December 24, 2021, the SJC issued an order remanding both cases to the Superior Court and assigning the cases to this Court (the undersigned judge) for factual findings and to "consider and address whether the imposition of a mandatory sentence of life without the possibility of parole for . . . those convicted of murder in the first degree who were eighteen to twenty-one at the time of the crime violates article 26 of the Massachusetts Declaration of Rights."

Article 26 of the Massachusetts Declaration of Rights ("article 26") includes the Commonwealth's constitutional ban on "cruel or unusual punishments." After limited additional proceedings described below, the Court now issues Findings of Fact and a Ruling of Law on the article 26 issue.

With regard to the constitutional question that the SJC asked this Court to address, the Court holds that mandatory sentences of life in prison without the possibility of parole ("mandatory life without parole") for defendants who were 18 through 20 years old at the time of their crimes -- *i.e.*, sentences that preclude a judge from granting parole eligibility -- violate article 26 of the Massachusetts Declaration of Rights. Robinson and Mattis are therefore entitled to a new sentencing hearing.

II. PROCEDURAL HISTORY

A. Commonwealth v. Jason Robinson

Robinson is pursuing a direct appeal of his 2002 convictions on charges of first-degree murder and related offenses based on a robbery and fatal shooting committed on March 27, 2000. When the crimes were committed, Robinson was 19 years old. The evidence at trial

established that Robinson and his co-defendant Tanzerius Anderson ("Anderson") agreed to rob the victim, who was known to carry a significant amount of cash, and that during the robbery, Anderson fatally shot the victim.[1] Anderson's conviction was affirmed by the SJC in 2005. See *Commonwealth* v. *Anderson*, 445 Mass. 195, 196 (2005). Robinson filed a timely notice of appeal, but the appeal was stayed in 2007 so that Robinson could move for a new trial.

Eight years later, in 2015, Robinson filed his new trial motion, seeking a new trial on six grounds, including that closure of the courtroom violated his right to a fair trial and that his mandatory life-without-parole sentence constituted cruel or unusual punishment based on his age at the time of the crime. (Paper # 37.2)

A Superior Court judge allowed Robinson's new trial motion after finding that the public was unlawfully barred from the courtroom throughout jury selection. The SJC reversed, holding that Robinson procedurally waived his claim that the courtroom closure constituted structural error by not objecting to the closure at the time it happened. *Commonwealth* v. *Robinson*, 480 Mass. 146, 147 (2018). In addition to reversing the grant of Robinson's motion for a new trial, the SJC remanded the case "for the motion judge to determine whether the improper courtroom closure created a substantial risk of a miscarriage of justice." *Id.* at 155. On remand, in September 2018, the Superior Court found that Robinson had not met his burden of showing that he had suffered any substantial prejudice as a result of courtroom closure. In October 2018, the case was re-assigned to this Court for resolution of the other issues raised by Robinson in his new trial motion.

In a Memorandum of Decision and Order dated November 7, 2018 (Paper # 67), this Court denied the remainder of Robinson's motion for a new trial, except that the Court deferred

[1] Anderson was convicted of first-degree murder on theories of felony murder and extreme atrocity or cruelty. Robinson was convicted of first-degree murder only on a theory of felony murder. See 445 Mass. at 196 and n.1.

to the SJC the issue of whether the evidence was sufficient to convict Robinson of felony murder. The Court deferred this issue primarily because the law of felony murder had changed since the time of Robinson's offense in 2000, and it was unclear to this Court which if any of those changes should be applied to Robinson's case.[2]

On November 19, 2018, Robinson filed a motion to reconsider this Court's November 7, 2018, decision so that he could create a factual record through expert testimony to support his claim that *Miller* v. *Alabama,* 567 U.S. 460, 470 (2012), and *Diatchenko* v. *District Attorney for the Suffolk Dist. ("Diatchenko I"),* 466 Mass. 655, 667-671 (2013), should be applied to defendants who were 19 years old at the time of their crimes, as was Robinson (Paper # 68). *Miller* held that "mandatory life without parole for those under the age of 18 at the time of their crimes violates the Eighth Amendment's prohibition on 'cruel and unusual punishments.' " 567 U.S. at 465. *Diatchenko I* held that "mandatory imposition of a sentence of life in prison without the possibility of parole on individuals who were under the age of eighteen when they committed the crime of murder in the first degree violates the prohibition against 'cruel or unusual punishments' in art. 26 of the Massachusetts Declaration of Rights, and that the discretionary imposition of such a sentence on juvenile homicide offenders also violates art. 26 because it is an unconstitutionally disproportionate punishment when viewed in the context of the unique characteristics of juvenile offenders." 466 Mass. at 658–659 (footnote omitted).

[2] This Court notes that the SJC has declined to apply *Commonwealth* v. *Brown,* 477 Mass. 805, cert. denied,139 S. Ct. 54 (2018), retroactively, see *Commonwealth* v. *Sun,* 490 Mass. 196, No. SJC-12870, 2022 WL 2517173, at *16 (Mass. July 7, 2022) (slip op. at 50), and the SJC did not ask this Court to address that issue in its December 24, 2021 remand order.

Additional delay resulted from several factors, including consideration of creating a factual record without the need for an evidentiary hearing, which prudently was abandoned, followed by the creation of a factual record through hearings and the COVID-19 pandemic.[3]

On October 30, 2020, this Court held an evidentiary hearing via Zoom, at which Professor Laurence Steinberg ("Dr. Steinberg"), a developmental psychologist, testified on behalf of Robinson, and a binder of articles on adolescent brain development authored or co-authored by Dr. Steinberg (Exhibit 1) was admitted in evidence.[4] The Court set a schedule for the submission of post-hearing briefs.

On April 12, 2021, Robinson filed his post-hearing brief, arguing that the holding in *Diatchenko I* should be extended to defendants who, like him, were 19 years old at the time of their crimes, and that the evidence at trial was insufficient to convict him of felony murder. (Paper # 109) On April 14, 2021, the Commonwealth filed its response. (Paper # 110) In it, the Commonwealth changed the position on the constitutional question that it had held throughout Robinson's appeal and agreed with Robinson's position to the extent that, absent an individualized sentencing hearing, a sentence of life without parole for a defendant who was 19 years old at the time of his crime was unconstitutional. In effect, the Suffolk County District Attorney took the position that *Miller,* but not *Diatchenko I,* should be extended to defendants who were 18 through 20 years old at the time of their crimes.

On May 7, 2021, this Court ordered the record to be transmitted to the Clerk for the Commonwealth. (Paper # 111) The Court's primary reason for transmitting the case was its opinion that the issue of mandatory life-without-parole sentences for individuals who were 19

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[3] See *Committee for Pub. Counsel Servs.* v. *Chief Justice of the Trial Court*, 484 Mass. 431, 433-434 (2020) (explaining generally disruption of pandemic).

[4] Dr. Steinberg's credentials are set forth below.

years old at the time of their crimes should be decided on a broader factual record than the testimony of Dr. Steinberg and articles authored by him.

The subsequent procedural history of this case and the *Mattis* case is set forth in Section C below.

B. Commonwealth v. Sheldon Mattis

Mattis is seeking a reduction in his sentence for his 2013 convictions on charges of first-degree murder and related offenses based on a fatal shooting committed in September 2011. Mattis and his co-defendant Nyasani Watt ("Watt") were tried together and convicted in November 2013 of first-degree murder and related offenses. When the crimes were committed, Mattis was 18 years old. The Commonwealth's theory of the case was that Watt followed the two young pedestrian victims on a bicycle and shot them in the back as they ran away from him. Mattis was tried as Watt's joint venturer.[5]

In 2014, in conjunction with an appeal of his conviction, Mattis filed an omnibus motion in the SJC ("First Motion"). Upon consideration of the First Motion, the SJC stayed the case and remanded the First Motion to the Superior Court for disposition. In a portion of the First Motion, Mattis sought a hearing pursuant to *Commonwealth* v. *Fidler*, 377 Mass. 192 (1977), as to alleged extraneous influence on a deliberating juror. A Superior Court judge (Roach, J.) denied the First Motion in a Memorandum and Order dated March 27, 2015. (Paper # 118)

Following the SJC's ruling in *Commonwealth* v. *Moore*, 474 Mass. 541 (2016), which addressed issues of post-verdict contact with jurors, Mattis and Watt renewed their request for juror contact to pursue their *Fidler* motion. Judge Roach conducted individual voir dire of two

[5] Because Mattis turned 18 years old eight months before the murder, he is serving a life sentence without the possibility of parole. Watt turned 18 years old ten days after the murder, and therefore is now eligible for parole no sooner than fifteen years from sentencing, pursuant to the SJC's ruling in *Diatchenko I*. See *Commonwealth* v. *Watt*, 484 Mass. 742, 753-754 (2020), citing *Diatchenko I*, 466 Mass. at 672-673.

jurors and issued Preliminary Findings of Fact Following Juror Inquiry in March 2017. (Paper # 139)

Mattis subsequently sought further inquiry of all jurors on the questions of "racial animus in the jury room and black gangs," and a court order. (Paper # 141) Mattis also filed Defendant's Memorandum in Support of Motion for New Trial, Reduction in Verdict, and/or Resentencing (Paper # 147), and the Commonwealth filed an opposition. (Paper # 148) Mattis' co-defendant, Watt, sought relief, as well. On October 31, 2017, Judge Roach issued Memorandum of Decision and Order on Defendants' Renewed Motion for New Trial in both cases, denying the new trial motions and declining to grant other relief. (Paper # 150)

Both defendants then appealed their convictions and the denial of their motions for a new trial. In June 2020, the SJC affirmed the defendants' convictions and declined to grant either defendant extraordinary relief pursuant to G.L. c. 278, § 33E. However, the Court stated:

> it likely is time for us to revisit the boundary between defendants who are seventeen years old and thus shielded from the most severe sentence of life without the possibility of parole, and those who are eighteen years old and therefore exposed to it. We can only do so, however, on an updated record reflecting the latest advances in scientific research on adolescent brain development and its impact on behavior. See *Diatchenko I*, 466 Mass. at 669-670.

Commonwealth v. *Watt*, 484 Mass. 742, 755-756 (2020). The SJC remanded Mattis' case to the Superior Court "for development of the record with regard to research on brain development after the age of seventeen." *Id.* at 756.

Between January 14, 2021 and March 1, 2021, Judge Roach conducted an evidentiary hearing via Zoom, at which two volumes of exhibits were admitted and Professor Adriana Galvan ("Dr. Galvan"), a developmental cognitive neuroscientist, and Professor Robert Kinscherff ("Dr. Kinscherff"), an attorney and forensic psychologist, testified for Mattis, and Professor Stephen Morse ("Dr. Morse"), an attorney and forensic psychologist, testified for the

Commonwealth.[6] Thereafter, Judge Roach ordered the record to be transmitted to the Clerk of the Commonwealth (Paper # 187), as this Court had done in the *Robinson* case.

C. Procedural History of Cases Following December 2021 Remand Order

On December 24, 2021, the SJC issued an order remanding the *Robinson* case and the *Mattis* case to the Superior Court and assigning the cases to the undersigned for factual findings on brain development after the age of 17, and to "consider and address whether the imposition of a mandatory sentence of life without the possibility of parole for . . . those convicted of murder in the first degree who were eighteen to twenty-one at the time of the crime violates article 26 of the Massachusetts Declaration of Rights." See 12/24/21 Order in SJC-09265 and SJC-11693 ("December 2021 Remand Order").

This Court gave the parties in both cases an opportunity to supplement the record, which the parties declined. On April 8, 2022, the Court, on its own initiative, heard limited additional testimony, and the defendants offered one additional exhibit in evidence, after which the Court heard oral argument.

III. POSITION OF THE PARTIES

The Commonwealth takes the position, consistent with *Miller*, that *mandatory* life-without-parole sentences for defendants who were under age 21 at the time of their crimes, *i.e.*, sentences that preclude a judge from granting parole eligibility, violate article 26 of the Massachusetts Declaration of Rights. Put another way, in the Commonwealth's view, life-without-parole sentences for defendants convicted of first-degree murder who were 18 through

[6] The credentials of Dr. Galvan, Dr. Kinscherff, and Dr. Morse are set forth below.

20 years old at the time of their crimes comply with article 26, "as long as there is an individualized sentencing hearing." (Paper # 194 at 9)[7]

At the April 8, 2022 hearing, Robinson and Mattis took the position that *any* sentence of life without parole for a defendant who was under age 21 at the time of the crime violates article 26 of the Massachusetts Declaration of Rights.

Because the SJC has asked this Court only to address the constitutionality of *mandatory* life-without-parole sentences for defendants who were under age 21 at the time of their crimes, this Court does not decide the issue of whether *any* sentence of life without parole for a defendant convicted of first-degree murder who was under age 21 at the time of the crime violates articles 26. However, the Court briefly addresses this issue near the end of Part V of this decision.

IV. FINDINGS OF FACT

1. The Court has made two types of findings of fact in this opinion. First, the Court has made Preliminary Findings on the expertise and credibility of the witnesses and the reliability of other evidence that provide support for the Court's findings about age and brain development. Second, the Court has made Core Findings about age and brain development.

Preliminary Analysis and Findings

2. At its core, the issue in this case is whether the science of brain development in 18 through 20-year-olds has progressed to the point that it provides a reliable basis to answer the SJC's question, and if it has, how the Court should rule on the question. The Court begins by looking at the principles that govern admissibility of expert testimony.

[7] The Suffolk District Attorney's Office speaks on behalf of the Commonwealth in these cases. The Court recognizes that the positions of other offices representing the Commonwealth, including the other District Attorney's Offices and the Attorney General's Office, may not necessarily be in accordance with the view of the Suffolk District Attorney.

3. To be admissible, expert witness testimony must satisfy five foundational requirements. See *Commonwealth* v. *Barbosa*, 457 Mass. 773, 783 (2010), *cert. denied*, 563 U.S. 990 (2011); Mass. Guide Evid. § 702 (2022). First, the expert witness testimony must assist the trier of fact. Second, the expert witness must be qualified as an expert in the relevant area of inquiry. Third, the facts or data in the record must be sufficient to enable the expert witness to give an opinion that is not merely speculation. Fourth, the expert opinion must be based on a body of knowledge, a principle, or a method that is reliable. Fifth, the expert's opinion must reflect a reliable application of the body of knowledge, the principle, or the method to the particular facts of the case. The overarching issues are the expertise of the witness and the scientific validity of the principles that underlie the proffered evidence. See *Daubert* v. *Merrell Dow Pharms., Inc.*, 509 U.S. 579, 592-595 (1993); *Commonwealth* v. *Lanigan*, 419 Mass. 15, 24-25 (1994). As discussed below, the requirements for admission of the expert evidence relied upon by the Court have been met.

4. The four experts who testified in *Robinson* and *Mattis* can provide the opinions that support the findings below to a reasonable degree of scientific certainty based on their qualifications and experience, extensive study results and clinical observations supported by peer-reviewed publications, and evolving but recognized principles that have been subjected to rigorous testing.

5. The core findings of fact in this decision about age and brain development are based on (1) the October 30, 2020 testimony and Supplemental Affidavit (Paper # 79) of Dr. Steinberg in *Robinson* (see *infra* ¶ 6); (2) the January 14, 2021 testimony in *Mattis* and brief April 8, 2022 testimony in both cases of Dr. Galvan (see *infra* ¶ 7); (3) the February 19, 2021 testimony in *Mattis* of Dr. Kinscherff (see *infra* ¶ 8); (4) the March 1, 2021 testimony in *Mattis* of Dr. Morse

(see *infra* ¶ 9); and (5) seven scholarly journal articles, the first six of which were co-authored by Dr. Steinberg and/or Dr. Galvan.[8]

6. Dr. Steinberg, a PhD in human development and family studies and tenured professor at Temple University, is a renowned leader in the field of developmental psychology and adolescence. For over 40 years, he has been the sole author, lead author, or co-author of scores of studies published in peer-reviewed journals, including top journals in his field. See 10/30/20 Hearing, Ex. 1. Dr. Steinberg is the lead author of "Around the World," a peer-reviewed article that addressed a far-reaching international study on youth and brain maturation. (10/30/20 Hearing, Ex. 1, Tab U) He has received numerous honors and awards. Steinberg at 15-16.[9] He has been qualified as an expert in the field of developmental psychology approximately 30 times. *Id.* at 16. His research was cited in two of the leading Supreme Court cases on the Eighth Amendment ban on cruel and unusual punishment as applied to juveniles, including *Miller*. See

[8] The seven articles are: (a) Steinberg, et al., "Around the World, Adolescence is a Time of Heightened Sensation Seeking and Immature Self-Regulation," *Developmental Science* (March 2018) (*Robinson* Exhibit No. 1, Tab U), cited herein as Steinberg, et al., "Around the World"; (b) Icenogle, Steinberg, et al., "Adolescents' Cognitive Capacity Reaches Adult Levels Prior to Their Psychosocial Maturity: Evidence for a 'Maturity Gap' in a Multinational, Cross-Sectional Sample," *Law and Human Behavior*, Vol 43, No. 1 at 69-85 (2019) (*Mattis* Exhibits, Vol. 1, Ex. 2; Bates 000036-000070), cited herein as Icenogle, et al., "Adolescents' Cognitive Capacity"; (c) Rudolph, et al. (including Steinberg and Galvan), "At risk of being risky: The relationship between 'brain age' under emotional states and risk preference," *Developmental Cognitive Neuroscience*, Vol 24 (April 2017) at 93-106 (*Mattis* Exhibits, Vol. 1, Ex. 7; Bates 000192-000208), cited herein as Rudolph, et al., "At risk of being risky"; (d) Cohen, et al., "When Is an Adolescent an Adult? Assessing Cognitive Control in Emotional and Nonemotional Contexts," 27 *Psych. Sci.* 549 (2016) (*Robinson* Exhibit 1, tab O), cited herein as Cohen, et al., "When Is an Adolescent an Adult?"; (e) Steinberg, "A Social Neuroscience Perspective on Adolescent Risk-taking," *Devel. Rev.* Vol 28(1): 78-106 (*Mattis* Exhibits, Vol. 2, Ex. 19; Bates 000854-000880), cited herein as Steinberg, "A Social Neuroscience Perspective"; (f) Galvan, "Adolescent Brain Development and Contextual Influences: A Decade in Review," Journal of Research on Adolescence, Vol. 31(4): 843-869 (2021), Exhibit 3 to Commonwealth's Supplemental Response to Defendants' Motion for New Trial ("Comm. Supp. Resp.") (Paper # 120 in *Robinson;* Paper # 184 in *Mattis*), cited herein as Galvan, "Adolescent Brain Development: Decade in Review"; and (g) Casey, et al., "Making the Sentencing Case: Psychological and Neuroscientific Evidence for Expanding the Age of Youthful Offenders," *Annual Rev. of Criminol.* (2022) 5:321-343, Exhibit 1 to Comm. Supp. Resp., cited herein as Casey, et al., "Making the Sentencing Case."

[9] Cites to transcripts of the expert testimony in this case refer to the expert's name and the pages in the transcript, *e.g.*, Steinberg at 15-16.

Roper v. *Simmons*, 543 U.S. 551, 572-575, 578 (2005) (death penalty for those under 18 at time of crime violates Eighth Amendment); *Miller*, 567 U.S. at 489.

7. Dr. Galvan, a PhD in neuroscience, is a tenured Professor of Psychology and Director of the Developmental Neuroscience Lab at U.C.L.A. Dr. Galvan is a recognized leader in the field of developmental cognitive neuroscience, and a co-author of over 100 book chapters and studies published in peer-reviewed journals, including top journals in her field. Galvan at 25-26. She has received numerous honors and awards, including the Presidential Early Career Award for Scientists and Engineers, bestowed by the White House, and the Troland Award from the National Academy of Sciences. *Id.* at 26-27.

8. Dr. Kinscherff is a law school graduate and PhD in clinical psychology. Kinscherff at 10, 16. He is a professor in the doctoral psychology program at William James College. *Id.* at 6-7. Dr. Kinscherff has testified as an expert in the field of psychology dozens of times. *Id.* at 12. He is a former Assistant Commissioner for Forensic Mental Health of the Massachusetts Department of Mental Health. *Id.* at 15.

9. Dr. Morse is an attorney and PhD in psychology and social relations. Morse at 8-9, 16. He is a tenured professor of law and professor of psychology and law at the University of Pennsylvania. *Id.* at 13. He has testified as an expert in at least 20 cases since 1977. *Id.* at 15. He is a licensed attorney in Pennsylvania and Massachusetts and is a board-certified forensic psychologist. *Id.* at 16. His special appointments have included Legal Director of the MacArthur Foundation Law and Neuroscience Project in the mid to late 2000s. *Id.* at 24-25. He has written scores of articles including many in leading journals on neuroscience and the law. *Id.* at 26-27.

10. Today, neuroscientists and behavioral psychologists know significantly more about the structure and function of the brains of 18 through 20-year-olds[10] than they did 20 years ago, for three primary reasons. First, although structural magnetic resonance imaging (sMRI) of the brain's anatomy has existed for almost 50 years, functional magnetic resonance imaging (fMRI), which measures physiological changes in the brain, has been widely available in university labs for only the last 15 to 20 years. See Morse at 30-31. Second, until the late 2000s, far more studies focused on the brains of juveniles, *i.e.*, those under age 18, than on the brains of 18 through 20-year-olds or 18 through 21-year-olds. See Steinberg at 104-105. Third, the number, scope and sophistication of developmental cognitive neuroscience studies and developmental psychology studies has continually increased. In March 2018, Dr. Steinberg (as lead author) and others published "Around the World" in *Developmental Science*. See 10/30/20 Hearing, Ex. 1, Tab U. The study, by far the largest study of its kind, used a combination of behavioral tests and self-reporting regarding 5,404 individuals between the ages of 10 and 30 from 11 countries on five continents. *Id.* at 1-2, 4.[11] Both Dr. Galvan, a defense expert in *Mattis*, and Dr. Morse, the Commonwealth's expert in *Mattis*, praised the study and found it authoritative and statistically sound. See Galvan at 94-95; Morse at 89. The study showed similar results across countries with

[10] The Court's age-based findings are made as to 18, 19, and 20-year-olds, referred to herein as "18 through 20-year-olds." Many of Dr. Galvan's studies included 21-year-olds in the group of "late adolescents" who were studied, whereas many of Dr. Steinberg's studies did not. Because the Court puts great weight on the similarity in results of studies conducted in two different disciplines, *i.e.*, developmental cognitive neuroscience and developmental psychology, using the different methods of behavioral study and brain imaging, the Court's findings include only that age range that was included in both experts' studies. Put another way, for purposes of assessing the constitutionality of mandatory life-without-parole sentences, the brain science relied upon by the Court lends some support for treating 18 through 21-year-olds differently than older persons, but much stronger support for treating 18 through 20-year-olds differently than older persons.

[11] The study was conducted in China, Colombia, Cypress, India, Italy, Jordan, Kenya, the Philippines, Sweden, Thailand, and the United States. *Id.* at 4.

different cultural views about accepted and encouraged behavior in teenagers and discipline of children and teenagers. "Around the World" at 3-4, 13.

11. The Court finds that the four experts who testified in *Robinson* and *Mattis* can provide and have provided expert opinions grounded on reliable theories that support the findings in paragraphs 13-20 below to a reasonable degree of scientific certainty based on their qualifications and experience, and the extensive study results and real-world observations that support their opinions, as noted herein. Consistencies in the results of many behavioral studies, consistencies in the results of many brain imaging studies, and consistencies between the results of these two types of studies, all conducted in different labs in different parts of the country and increasingly in other countries[12], give Dr. Steinberg and Dr. Galvan a high degree of confidence in the validity of their theories, study results, and opinions. See Steinberg at 49-50; Galvan at 191-193. See also brief testimony of Galvan at April 8, 2022 hearing. The increasing scientific rigor of many studies has further increased the confidence of Dr. Steinberg and Dr. Galvan in the validity of their theories, study results, and opinions. See Steinberg at 148-149, 175; Galvan at 54-59, 118, 137-138. The real-world behaviors of 18 to 20-year-olds, as reflected in F.B.I. crime statistics and Centers for Disease Control statistics on addiction and accidents, among other measures of harmful conduct, provide confirmatory support for the brain science findings. See Kinscherff at 104-106; Galvan at 99.

12. While there are limitations to the study results supporting the Core Findings in paragraphs 13-20 below, set forth in paragraph 22, they are inherent in behavioral science research, rapidly evolving scientific research, and/or all scientific research, see Steinberg at 87;

[12] Some studies have included both behavioral and brain imaging components. Steinberg at 91-92.

Morse at 30-35, and do not undermine the reliability of the expert opinions on which the Court relies or the Core Findings of Fact it reaches.

Core Findings of Fact

13. As a group, 18 through 20-year-olds in the United States and other countries have less "self-regulation," *i.e.*, they are less able to control their impulses in emotionally arousing situations, than individuals age 21-22 and older; their reactions in these situations are more similar to those of 16 and 17-year-olds than they are to those age 21-22 and older. See Galvan at 73-74, 78-84, 85-89, 100-101, 104-105, 214-216, 221-222; Steinberg at 30, 41, 49; Steinberg Supp. Aff. ¶ 21; Steinberg, et al., "Around the World" at 1-4, 15-17 (finding these results in 9 of 11 countries studied); Cohen, et al., "When Is an Adolescent an Adult?" at 549; Icenogle, et al., "Adolescents' Cognitive Capacity" at 70 (Bates 000037); Rudolph, et al., "At risk of being risky," §§ 2.11, 3.4, 4.1.

14. As a group, 18 through 20-year-olds in the United States and other countries are more prone to "sensation seeking," which includes risk-taking in pursuit of rewards, than are individuals under age 18 and over age 21. Because risk-taking in pursuit of rewards peaks during the late teens, rising steadily before this age range and falling steadily thereafter, developmental psychologists and developmental cognitive neuroscientists frequently refer to this phenomenon as the "upside-down U" or "inverted U," due to its shape on a graph where age is plotted on the x-axis and level of sensation-seeking is plotted on the y-axis. Galvan at 68-70, 73-74, 91-93; Steinberg at 62, 66; see, generally, Galvan, "Adolescent Brain Development: Decade in Review." See also Steinberg Supp. Aff. ¶ 20; Steinberg, et al., "Around the World" at 1-4, 11-13 (finding these results in 9 of 11 countries studied).

15. As a group, 18 through 20-year-olds are more susceptible to peer influence than are individuals age 21-22 and older, and the presence of peers makes 18 to 20-year-olds more likely to engage in risky behavior. See Steinberg at 43-44, 160-161; Steinberg Supp. Aff. ¶ 24; Galvan at 106, 245-246; Morse at 82; Steinberg, "A social neuroscience perspective" at 91-92, 98; Galvan, "Adolescent Brain Development: Decade in Review" at 852-853.

16. As a group, 18 through 20-year-olds have greater capacity to change than older individuals because of the plasticity of the brain during these years. Galvan at 42-44, 60, 62-63, 67-73, 109-110, 113-114; Casey, et al., "Making the Sentencing Case" at 329.

17. Consistent and reliable results have been obtained in many behavioral studies, sMRI studies, and/or fMRI studies (based on blood flow) that support the findings set forth in paragraphs 13 to 16. Galvan at 60-61, 63-64, 66-69, 76-80, 91-92, 98-101; Steinberg, et al., "Around the World" at 1-4, 7-8, 11-19; Steinberg Supp. Aff. ¶ 20; Steinberg at 65-66. See also additional articles cited *supra* at ¶¶ 13-15.

18. The primary anatomical (brain structure) and physiological (brain function) explanations for the findings set forth in paragraphs 13 to 16 are (1) the influence on the brain of the sharp increase during puberty of certain hormones; (2) the lack of a fully developed prefrontal cortex, the part of the brain that most clearly regulates impulses; and (3) the lack of fully developed connections (or connectivity) between the prefrontal cortex and other parts of the brain, including the ventral striatum, the part of the brain that most clearly responds to rewards and reward-related decision making. Galvan at 42-44, 63-65, 214-216; Steinberg at 22-25, 29-30; Steinberg, "A social neuroscience perspective" at 83-91.

19. The combination of heightened sensation seeking, less than fully developed self-regulation in emotionally arousing situations, and susceptibility to peer pressure, all of which are

associated with a less than fully developed prefrontal cortex and less than fully developed brain connectivity, makes 18 through 20-year-olds as a group particularly vulnerable to risk-taking that can lead to poor outcomes. The real-world behaviors of 18 through 20-year-olds, as reflected in measures of harmful conduct such as F.B.I. crime statistics and Centers for Disease Control statistics on addiction and accidents, support the brain science findings in this regard. Kinscherff at 28-32, 38; Steinberg, "A social neuroscience perspective"; Steinberg Supp. Aff. ¶¶ 25-26.

20. In contrast to how 18 through 20-year-olds respond in emotionally arousing situations, decision making in the absence of emotionally arousing situations, *i.e.*, "cold cognition," reaches adult levels around age 16. See Icenogle, et al., "Adolescents' Cognitive Capacity" at 82; Steinberg Supp. Aff. ¶¶ 22-23; Steinberg, "Why we should lower the voting age to 16," *New York Times* (March 2, 2018) (*Robinson* Hearing Ex. 1, Tab W).

21. Consistent with the above scientific findings, and cognizant of forensic research showing that most individuals who commit crimes in their late teens do not continue to commit crimes after their mid-20's, forensic psychologists have reduced their preparation of and reliance on long-term risk assessments of criminal defendants who commit violent crimes in their late teens and early 20s because of the reduced utility of such studies. See Kinscherff at 48, 51-52; Casey, et al., "Making the Sentencing Case" at 331-332, 335-336. See also 4/8/22 Hearing Exhibit 1 (age-crime curve).

22. Caveats this Court notes to the study results supporting the Core Findings in paragraphs 13-21 include the following. First, there are significant differences between the subjects in the studies discussed below as a whole and individuals who commit murder as a whole, including but not limited to the fact that potential subjects with serious mental illness are excluded from most studies. See Galvan at 193-195. Second, the subjects who participate in

behavioral and brain scan studies are not a fully randomized pool of the general population. See generally Galvan at 169-174; Morse at 33-34; Steinberg at 92, 177-178, 187-188, 199, 201-202, 208-209. Third, behavioral and brain scan study results look at the individuals in any age bracket as a group; there are significant differences in brain development among the individuals of any particular age or age bracket. See Steinberg at 136-175; Morse at 48-50, 60-61; Galvan at 213-218. Fourth, the conditions of brain science studies, *e.g.*, viewing images on a computer screen and/or being scanned in a lab, differ markedly from the real-world situations in which adolescents commit crimes, Galvan at 142, 219.[13] Fifth, the brain scan study results in the record establish *correlations* between the anatomy and function of certain parts of the brain and certain behaviors, which is different than establishing actual *causation* of those behaviors. Sixth, historically there were machine and human error problems with some early fMRI studies, but these problems were largely resolved by around 2013. See Steinberg at 52-54; Morse at 73-74. Lastly, while the results of many behavioral and brain scan studies discussed herein reinforce each other, each study is somewhat different and therefore the results do not constitute "replication" strictly speaking, as scientists often use the term. Morse at 44-45, 59-60. These caveats, individually and collectively, do not undermine the Core Findings of Fact.

V. RULING OF LAW AND LEGAL DISCUSSION

Proportionality is the touchstone for analyzing cruel and unusual punishment under the Eighth Amendment to the U.S. Constitution and the Commonwealth's counterpart to the Eighth Amendment, article 26 of the Massachusetts Declaration of Rights. See *Diatchenko I,* 466 Mass. at 669. See also *Commonwealth v. Concepcion*, 487 Mass. 77, 86 (2021). Moreover, "a

[13] That said, three of the experts testified that the studies on which they relied accurately predicted real-world behaviors. Galvan at 120; Steinberg at 99; Morse at 36.

sentencer [must] have the ability to consider the mitigating qualities of youth." *Diatchenko I*, 466 Mass. at 661, quoting *Miller,* 567 U.S. at 476 (internal quotation and additional citation omitted).

In *Miller*, the Supreme Court banned mandatory sentences of life in prison without the possibility of parole for defendants who were under age 18 at the time of their crimes, as cruel and unusual punishment in violation of the Eighth Amendment. 567 U.S. at 489. The Supreme Court held that judges could impose life-without-parole sentences for juveniles in the exercise of their discretion, but not mandatorily based solely on the provisions of a state or federal statute. *Id.*

In *Diatchenko I*, the SJC took the holding in *Miller* one significant step further, holding that *all* life-without-parole sentences for defendants who were under age 18 at the time of their crimes were "cruel or unusual punishment"[14] in violation of article 26 of the Massachusetts Declaration of Rights. 466 Mass. at 671. "The point of [the SJC's] departure from the Eighth Amendment jurisprudence was [its] determination that, under art. 26, the 'unique characteristics of juvenile offenders' should weigh more heavily in the proportionality calculus than the United States Supreme Court required under the Eighth Amendment." *Commonwealth* v. *Perez*, 477 Mass. 677, 683 (2017), citing *Diatchenko I*, 466 Mass. at 671.

The SJC has asked this Court to decide, in effect, whether the Supreme Court's holding in *Miller* should be extended in Massachusetts to all defendants who were age 18 through 20 at the time of their crimes. The Court concludes that it should. Both the Supreme Court and the SJC have established "categorical bans on sentencing practices based on mismatches between the culpability of a class of offenders and the severity of a penalty." *Diatchenko I*, 466 Mass. at 659.

[14] The SJC has not found any legal significance in the language difference between the Eighth Amendment, which bans "cruel *and* unusual punishment," and art. 26, which bans "cruel *or* unusual punishment." See, *e.g.*, *Michaud* v. *Sheriff of Essex Cnty.*, 390 Mass. 523, 533-534 (1983), and cases cited.

In the nine years since *Diatchenko I* was decided, extensive research in the fields of developmental cognitive neuroscience and developmental psychology has established that, as a class or group, the brains of 18 through 20-year-olds are not as fully developed as the brains of older individuals in terms of their capacity to avoid conduct that is seriously harmful to themselves and others. These scientific findings clearly bear on the "culpability of [this] class of offenders... ." *Id.* As applied to juveniles, the SJC considers life-without-parole sentences to be "strikingly similar, in many respects, to the death penalty... ." *Id.* at 670. Applying the Findings of Fact in this case to this SJC precedent, this Court holds that the non-discretionary (*i.e.*, mandatory) imposition of life-without-parole sentences for defendants who were age 18 through 20 at the time of their crimes is a "sentencing practice[ ] based on mismatches between the culpability of a class of offenders and the severity of a penalty." *Id.* at 659. Without minimizing the violence that is almost always involved in the crimes committed by 18 through 20-year-olds that result in first-degree murder convictions, including the crimes at issue in these two cases, the Court concludes that there is a mismatch between the culpability of 18 through 20-year-old offenders as a class and mandatory life-without-parole sentences, *i.e.*, sentences that preclude a judge from granting parole eligibility. Therefore, as applied to 18 through 20-year-olds, the statute that mandates such sentences, G.L. c. 265, § 2, violates article 26 of the Massachusetts Declaration of Rights. This does not mean that, under a given set of facts, a life-without-parole sentence cannot be imposed on such a defendant. The SJC has not asked this Court to decide whether *any* life-without-parole sentence for a defendant who was under age 21 at the time of the crime violates article 26, and therefore the Court does not decide this issue. This ruling means that requiring imposition of a mandatory life sentence in every case, without an individual, case-by-case factual assessment, is unconstitutional.

As noted above, this Court bases its constitutional ruling primarily on 15 years of extensive scientific research establishing that, as a class or group, 18 through 20-year-olds have brains that are not as developed as those of older individuals, and this lack of full brain development makes them more susceptible to behavior harmful to themselves and others. Eighteen through 20-year-olds have less "self-regulation," *i.e.*, they are less able to control their impulses in emotionally arousing situations, than individuals age 21-22 and older. Their reactions in these situations are more similar to those of 16 and 17-year-olds than they are to those age 21-22 and older. As a group or class, 18 through 20-year-olds are also more prone to "sensation seeking," *i.e.*, risk-taking in pursuit of rewards, than are individuals under age 18 and over age 21. And 18 through 20-year-olds are more susceptible to peer influence than are individuals age 21-22 and older; the presence of peers makes them more likely to engage in risky behavior than they otherwise would be. Consistent results have been obtained in many behavioral studies, sMRI studies, and fMRI studies. See *supra* at 15-17.

The primary anatomical (brain structure) and physiological (brain function) explanations for these phenomena are the influence on the brain of the sharp increase during puberty of certain hormones, the lack of a fully developed prefrontal cortex, the part of the brain that most clearly regulates impulses, and the lack of fully developed connections (connectivity) between the prefrontal cortex and other parts of the brain including the ventral striatum, the part of the brain that most clearly responds to rewards and reward-related decision making. See *supra* at 16-17.

The combination of heightened sensation seeking, less than fully developed self-regulation in emotionally arousing situations, and susceptibility to peer pressure, all of which are associated with a less than fully developed prefrontal cortex and less than fully developed brain connectivity, makes 18 to 20-year-olds as a group particularly vulnerable to risk-taking that can

lead to poor outcomes. The real-world behaviors of 18 through 20-year-olds, as reflected in F.B.I. crime statistics, Centers for Disease Control statistics on addiction and accidents, and many other measures of harmful conduct, support the brain science findings in this regard. See *supra* at 16-17.

The brain science and forensic science study results described in this opinion lend direct support to the conclusion that mandatory life-without-parole sentences for defendants who were age 18 through 20 at the time of their crimes constitute cruel or unusual punishment under article 26. Perhaps equally important, these study results also comport with the three reasons why the Supreme Court and the SJC drew the line at age 18 for purposes of applying the most severe penalties in our federal and state legal systems, the death penalty (federal) or mandatory life without parole (Massachusetts).

When the Supreme Court ruled in *Roper v. Simmons*, 543 U.S. 551 (2005), that applying the death penalty to defendants who were under age 18 at the time of their crimes constituted cruel and unusual punishment under the Eighth Amendment, the Court cited three general differences between juveniles (*i.e.*, persons under age 18) and adults. The first difference noted between juveniles and adults was that "lack of maturity and an underdeveloped sense of responsibility are found in youth more often than in adults and are more understandable among the young." *Roper*, 543 U.S. at 569. The second difference was that "juveniles are more vulnerable or susceptible to negative influences and outside pressures, including peer pressure." *Id.*, citing Steinberg & Scott, Less Guilty by Reason of Adolescence: Developmental Immaturity, Diminished Responsibility, and the Juvenile Death Penalty, 58 *Am. Psychologist* 1009, 1014 (2003). "The third broad difference is that the character of a juvenile is not as well formed as that of an adult. The personality traits of juveniles are more transitory, less fixed." *Roper*, 543

U.S. at 570. The SJC adopted all three of these differences as reasons for its ruling in *Diatchenko I.* See *Diatchenko I,* 466 Mass. at 660.

The scientific study results in the record in this case call into question why, for purposes of applying these three factors, the line between juveniles and adults should be drawn between age 17 and age 18. A range of study results shows that 18 through 20-year-olds are more subject to peer pressure than older individuals, and brain imaging shows that 18 through 20-year-olds have greater capacity to change than older individuals because of the plasticity of the brain during these years. These study results also provide a reason for why "lack of maturity and an underdeveloped sense of responsibility" are "found in [this age group] more often than in adults and are more understandable... ." *Roper*, 543 U.S. at 569.

That the Supreme Court has expressly limited the protections of *Roper* and *Miller* to defendants under age 18, see *Jones* v. *Mississippi*, 141 S. Ct. 1307, 1314 (2021); *Roper*, 543 U.S. at 574, is not dispositive, for two reasons. First, the Court does not assume those decisions are fixed in stone, and their conclusions may change as the science changes. See *Watt*, 484 Mass. at 755-756. Second, and leaving future developments aside, the SJC has noted that it "often afford[s] criminal defendants greater protections under the Massachusetts Declaration of Rights than are available under corresponding provisions of the Federal Constitution." See *Diatchenko I*, 466 Mass. at 668-669, and cases cited therein.[15]

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[15] See, *e.g.*, *District Attorney for the Suffolk Dist.* v. *Watson*, 381 Mass. 648 , 650, 665 (1980) (concluding that death penalty contravened prohibition against cruel or unusual punishment in art. 26, notwithstanding constitutionality under Eighth Amendment); *Commonwealth* v. *Mavredakis*, 430 Mass. 848, 855-860 (2000) (defendant's right under art. 12 of Massachusetts Declaration of Rights to be informed of attorney's efforts to render assistance broader than rights under Fifth and Sixth Amendments to United States Constitution); *Commonwealth* v. *Gonsalves*, 429 Mass. 658, 660-668 (1999) (privacy rights afforded drivers and occupants of motor vehicles during routine traffic stops broader under art. 14 of Massachusetts Declaration of Rights than under Fourth Amendment to United States Constitution); *Commonwealth* v. *Amirault*, 424 Mass. 618, 628-632 (1997) (confrontation rights greater under art. 12 than under Sixth Amendment to United States Constitution). See also Scott L. Kafker, *State Constitutional Law Declares Its Independence: Double Protecting Rights During a Time of Federal Constitutional Upheaval*, 49 Hastings Const. L.Q. 115, 119 (2022) ("state supreme courts have significant, if not unlimited

In ruling on defendants' motions, the Court has considered but has not strictly applied the three-pronged analysis adopted by the SJC in *Commonwealth v. Jackson*, 369 Mass. 904, 910 (1976), for deciding when a sentence is so disproportionate to the crime that it constitutes cruel or unusual punishment. This analysis "requires (1) an inquiry into the nature of the offense and the offender in light of the degree of harm to society, (2) a comparison between the sentence imposed here and punishments prescribed for the commission of more serious crimes in the Commonwealth, and (3) a comparison of the challenged penalty with the penalties prescribed for the same offense in other jurisdictions." *Commonwealth* v. *Sharma*, 488 Mass. 85, 89 (2021) (internal quotations and citations omitted). This approach does not apply neatly here; it appears that the SJC has used this three-part analysis solely to determine whether a *particular* sentence violates article 26, not to determine whether a sentencing *practice* violates art. 26. Compare *Cepulonis* v. *Commonwealth*, 384 Mass. 495, 497-499 (1981) (three-part analysis used to determine that 40-50 year sentence for possession of machine gun did not violate art. 26 or Eighth Amendment); *Perez*, 477 Mass. at 683-686 (three-part analysis used to determine that sentence in non-murder case with parole eligibility after 27 ½ years presumptively disproportionate); *Concepcion*, 487 Mass. at 86-89 (three-part analysis used to determine that life sentence with parole eligibility after 20 years for defendant convicted of first-degree murder committed at age 15 did not violate art. 26 or Eighth Amendment); and *Sharma*, 488 Mass. at 89-92 (sentences imposed on defendant age 17 at time of crimes of life in prison with parole eligibility after 15 years, followed by 7-10 year sentences -- concurrent with each other -- for armed assault with intent to murder remanded for individual determination using three-part test),

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freedom of action to provide greater protection under state constitutions") *id.* at 120 & n.20 (giving examples of *Diatchenko I* and *Monschke*).

with *Diatchenko I,* 466 Mass. at 667-671 (not applying three-part test while holding that *all* life-without-parole sentences for defendants under age 18 at the time of their crimes violates art. 26); *id.* at 672 (describing *Cepulonis* as addressing "punishment for particular offense"). The limitation of the three-pronged test in this case, as in *Diatchenko I,* is that first-degree murder is the most serious offense in the Commonwealth, and mandatory life in prison without parole is the most serious punishment in the Commonwealth, so these first two prongs do not lend themselves to a proportionality analysis. See *Commonwealth* v. *LaPlante*, 482 Mass. 399, 404 n.4 (2019) (deliberate murder case warranting "most severe punishment ... defies direct application of" this test). This leaves this third part of the test, *i.e.*, what has been done in other jurisdictions. Depending on one's perspective, application of this third prong can either support extending *Miller* to 18 through 20-year-olds or discourage it.

Only one state high court has held that mandatory life-without-parole sentences for defendants who were 18 through 20 years old at the time of their crimes violates the state analog to the Eighth Amendment, a constitutional ban on "cruel punishments." See *Matter of Monschke*, 197 Wash. 2d 305, 325 (2021), discussed *infra.* However, there are states in which some or all defendants of *any* age who are convicted of the most serious murder charge may receive parole eligibility as part of a life sentence, or a sentence of less than life in prison.[16] In seven states, there is no death penalty and a sentence of life in prison with parole eligibility is always a possible sentence for an adult defendant convicted of the most serious murder charge.[17] In New Jersey and New York, two other states that have no death penalty, life in prison with

[16] This Court endeavored to identify the statutes governing the most serious murder charge in all 50 states and the penalties for each such charge. However, court decisions have modified the law in some states, and this Court lacks the resources to monitor recent developments in the law of 50 different jurisdictions.

[17] Maine, Maryland, North Dakota, Rhode Island, Vermont, West Virginia, and Wisconsin.

parole eligibility is a possible sentence for a defendant convicted of the most serious murder charge unless the judge or jury finds specified aggravating factors. In two of the nine above-referenced states, Maine and New Jersey, a defendant convicted of the most serious murder charge may also be sentenced to a determinate term of years that, based on the defendant's age and the length of the sentence, is often not a *de facto* life sentence. And in Illinois, which does not have the death penalty, a defendant convicted of the most serious murder charge may receive a determinate term of years but may *not* receive a sentence of life with the possibility of parole.[18]

Massachusetts is one of only 11 states in which life in prison without parole is the only possible sentence after an adult conviction on the most serious murder charge.[19] Death is the only alternative to a life-without-parole sentence after an adult conviction on the most serious murder charge in sixteen states.[20, 21] In Alaska, conviction of aggravated first-degree murder carries a mandatory 99-year sentence, which is a *de facto* life without parole sentence.

In 11 of the states that have the death penalty, some defendants convicted of the most serious murder charge may be sentenced to life in prison with parole eligibility.[22] However, a sentencing regime that includes the death penalty differs so significantly from a sentencing

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[18] See 730 ILCS 5/5-4.5-20(a); 730 ILCS 5/3-3-3(c).

[19] Colorado, Connecticut, Delaware, Hawaii, Iowa, Massachusetts, Michigan, Minnesota, New Hampshire, New Mexico, and Virginia. There were 12 states, but the high court of one of those 12 states, Washington, ruled that mandatory sentences of life without parole for defendants who were age 18 through 20 at the time of their crime violate the state constitutional ban on "cruel punishments." See *Matter of Monschke*, *infra* at 27.

[20] Alabama, Arizona, Arkansas, California, Florida, Indiana, Kansas, Louisiana, Mississippi, Missouri, Nebraska, North Carolina, Pennsylvania, South Dakota, Texas, and Wyoming.

[21] California and Pennsylvania currently have moratoriums on the death penalty. As a result, at this time, life without parole is the only possible sentence upon conviction of the most serious murder offense.

[22] Georgia, Idaho, Kentucky, Montana, Nevada, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, and Utah.

regime without the death penalty that this Court does not consider the sentencing laws in those states as support for its holding in this case.

As noted above, in *Matter of Monschke*, 197 Wash. 2d 305 (2021), the Supreme Court of Washington ruled (by a 5-4 vote) that the state's aggravated murder statute was unconstitutional as applied to 18 through 20-year-olds because it denied trial judges discretion to consider the mitigating qualities of youth. *Id.* at 306-307, 326. The court noted that constitutional protections for youthful criminal defendants have grown more protective over the years, *id.* at 313-317, and that the Washington courts would not necessarily defer to legislative line drawing when determining what constitutes cruel punishment, *id.* at 317-319. The court also discussed how what it called the "age of majority"[23] is inherently and necessarily flexible. *Id.* at 319-321. Finding no meaningful developmental difference between the brain of a 17-year-old and the brain of an 18-year-old, the court held that drawing an arbitrary line between these ages for sentencing purposes did not pass constitutional muster. See *id.* at 313, 329. [24]

In sum, the law in other jurisdictions on mandatory life-without-parole sentences can be used to support or to question the holding reached by this Court.

A principal argument against extending the protections of juvenile sentencing to 18 through 20-year-olds has been that the law recognizes these individuals as adults, and therefore criminal courts should treat them as adults. See, *e.g.*, *Matter of Monschke*, 197 Wash. 2d at 330 (Owens, J., dissenting) ("at this same moment [that individuals obtain the privileges of adulthood], they also obtain the full responsibilities and consequences of adulthood, and the

[23] The term "age of majority" is ambiguous. See *infra*.

[24] The dissent noted, among other things, that the majority's ruling does not eliminate line-drawing, it merely changes where the line is drawn, and emphasized the inherent difficulty in deciding which 18 through 20-year-old offenders should receive life-without-parole sentences. *Id.* at 330-331, 333 (Owens, J., dissenting).

court will no longer intervene on their behalf on the basis of age."). The SJC adopted this reasoning in declining to extend the constitutional ban on life-without-parole sentences for juveniles to this age group:

> The age of eighteen ..."is the point where society draws the line for many purposes between childhood and adulthood." *Roper* [], 543 U.S. [at] 574 []. That such line-drawing may be subject "to the objections always raised against categorical rules," *id.*, does not itself make [an 18-year-old's life-without-parole] sentence unconstitutional.

Commonwealth v. *Chukwuezi*, 475 Mass. 597, 610 (2016). See *Watt*, 484 Mass. at 756 n.17.

However, while society draws the adulthood line at age 18 for "many purposes," *Chukwuezi*, 475 Mass. at 610, there are significant exceptions to this rule. Through legislation, "the Commonwealth has recognized that merely attaining the age of eighteen years does not by itself endow young people with the ability to be self-sufficient in the adult world." *Eccleston* v. *Bankosky*, 438 Mass. 428, 436 (2003). In a variety of contexts, Massachusetts law treats individuals age 18 and slightly older the same as it treats juveniles. See, *e.g.*, *id.* (child support); *Commonwealth* v. *Cole C.*, 92 Mass. App. Ct. 653, 659 n.8 (2018) (juvenile court jurisdiction); *id.* at n.9 (state custody of delinquent child); G.L. c. 119, § 23(f) (state responsibility for former foster child); G.L. c. 138, § 34A (drinking age). See also *Eccelston*, 438 Mass. at 435 n.13 ("An individual may be considered emancipated for some purposes but not for others" and giving the example of the right to vote versus the end of parental support).

Moreover, the age of legal adulthood has changed between 21 and 18 in various contexts for reasons "unrelated to capacity." See *Matter of Monschke*, 197 Wash. 2d at 314-315. The ages for military conscription, voting and drinking alcohol provide important examples. For most of the nation's history, the "age of majority" was 21, not 18. See Vivian E. Hamilton, *Adulthood in Law and Culture*, 91 Tul. L. Rev. 55, 64 (2016). "In 1942 wartime needs prompted Congress to lower the age of conscription from twenty-one to eighteen, a change

that would eventually lead to the lowering of the age of majority generally." *Id.* See also *Eccleston*, 438 Mass. at 435 n.14 (voting age lowered from 21 to 18 because age of conscription for service in Vietnam War was 18). Similarly, the drinking age has fluctuated, decreasing from 21 to 18 before reverting back to 21. See *Barboza* v. *Decas*, 311 Mass. 10, 12 (1942) (citing 1937 legislation which punished persons giving alcohol to individuals under 21); *McGuiggan* v. *New England Tel. & Tel. Co.*, 398 Mass. 152, 159 n.7 (1986) (noting "[t]he legal drinking age [had been] eighteen" but had been raised to 21 pursuant to a 1984 amendment). The 1984 increase in the drinking age was unmistakably due not to any new understanding about brain maturation but rather the incentive of federal funding. See 23 U.S.C. § 158; St.1984, c. 312, amending G.L. c. 138, §§ 12, 14, 30E, 34, 34A, 34B, 34C, and 64. See also *S. Dakota* v. *Dole*, 483 U.S. 203, 205 (1987) (states' federal highway funds partially contingent on state legislation compliance with congressional goal of national minimum drinking age).

As the foregoing show, the "age of majority" is a malleable concept that is not consistently based on science, as the decision in the cases at issue here must be. It thus should not mechanically govern highly consequential decisions about application of the criminal law. Further, the decision about what constitutes "cruel or unusual punishment" is a matter for the state courts, not the Legislature. See *Watson*, 381 Mass. at 666-667. See also *id.* at 686-687 (Quirico, J., dissenting); *Matter of Monschke*, 197 Wash. 2d at 325 (limit of judicial deference is violation of constitution under Washington state law); *Goodridge* v. *Dep't of Pub. Health*, 440 Mass. 309, 338-339 (2003) ("To label the court's role as usurping that of the Legislature ... is to misunderstand the nature and purpose of judicial review. We owe great deference to the Legislature to decide social and policy issues, but it is the traditional and settled role of courts to decide constitutional issues.").

This Court recognizes that incomplete brain development is far from determinative of violent behavior. The great majority of 18 through 20-year-olds do not commit violent crimes. Moreover, dramatically different crime rates in different geographic areas indicate that many factors other than brain age contribute to violent crime. Based on the record in this case, these aggravating factors include access to drugs, access to guns, high childhood stress levels, negative peer influence including affiliating with others involved in criminal activity, mental illness, unstable housing, lack of emotional attachment, and absence of lawful means of earning income, as well as the absence of positive factors such as stable relationships, education, and access to youth and adult programs. See Kinscherff at 91-96, 118-120.[25] Having the brain of an average 18 through 20-year-old is neither a satisfactory explanation nor an excuse for the intentional killing of another human being. However, the reality that many factors other than brain development contribute to violent crime does not change the Court's constitutional analysis, for two reasons.

First, the Court's holding does not in any way excuse acts of violence by 18 through 20-year-olds. The consequence of the Court's ruling is that all individuals convicted of first-degree murder in Massachusetts who were 18 through 20 years old at the time of their crime will continue to receive sentences of life in prison and serve at least 15 years in prison, but some of them may become eligible for parole after serving 15 or more years of their sentences. Others, depending on the facts, may be sentenced to life without the possibility of parole, but only if that sentence is warranted.

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[25] Sociologists observe that "as people move into the roles of adulthood – as they become full-time employees, as they become spouses, as they become parents – there are all kinds of factors that make it less attractive to live a criminal lifestyle." Steinberg at 68. Adults have more "latitude to engage in emotionally meaningful relationships . . . [and] at some point most people decide that the costs and consequences of continued serious criminal misconduct is not preferable to living a more productive life." Kinscherff at 40.

Second, the presence of aggravating factors that increase the likelihood of committing a violent crime is largely beyond the control of any 18 through 20-year-old. The economic circumstances of one's parents or guardians, racial and other discrimination, and other individual and systemic inequalities ensure that some late teens are far more likely than others to live with these aggravating factors, and therefore more likely to perpetrate - and to be victimized by - violent crime. In deciding what constitutes cruel or unusual punishment, a court should consider the systemic impact of its ruling, particularly where the ruling involves a class of persons who, based on their age, have greater capacity than older persons to change.

As noted above, the SJC has not asked this Court to decide whether *any* life-without-parole sentence for a defendant who was under age 21 at the time of the crime violates article 26, and therefore the Court does not decide this issue. There are three separate theories under which intentional killings can be prosecuted as first-degree-murder, *i.e.*, premeditated murder, murder committed with extreme atrocity or cruelty, and felony murder.[26] The neuroscience and behavioral science supporting the Court's ruling do not apply with equal force to killings under all three theories. Nor do they apply with equal force to the wide range of individual conduct that can be prosecuted under each of the theories of first-degree murder.

VI. CONCLUSION AND ORDER

Article 26 of the Massachusetts Declaration of Rights establishes "categorical bans on sentencing practices based on mismatches between the culpability of a class of offenders and the severity of a penalty." *Diatchenko I*, 466 Mass. at 659. Moreover, as applied to juveniles, the SJC considers life-without-parole sentences to be "strikingly similar, in many respects, to the death penalty... ." *Id.* at 670. On the record of brain science and social science in this case, the

[26] The Legislature has enacted different lengths of time before parole eligibility for convictions under each of these three theories. See G.L. c. 127, § 133A; G.L. c. 279 § 24.

imposition of non-discretionary (*i.e.* mandatory) life-without-parole sentences for defendants who were age 18 through 20 at the time of their crimes constitutes a "sentencing practice[ ] based on mismatches between the culpability of a class of offenders and the severity of a penalty." *Id.* at 659 . Therefore, this sentencing practice constitutes "cruel or unusual punishment" in violation of article 26 of the Massachusetts Declaration of Rights.

Because Jason Robinson and Sheldon Mattis were respectively 19 years old and 18 years old at the time of their crimes, they are each entitled to a new sentencing hearing.

Dated: July 20, 2022

Robert L. Ullmann
Justice of the Superior Court

Certificate of Compliance

I, Ryan M. Schiff, hereby certify that this brief complies with the rules of court that pertain to the filing of briefs, including, but not limited to: Rule 16(a)(13) (addendum); Rule 16(e) (references to the record); Rule 18 (appendix to the briefs); Rule 20 (form and length of briefs, appendices, and other documents); and Rule 21 (redaction). I further certify that this brief was prepared using 14-point Century font using Microsoft Word and, according to Microsoft's wordcount tool, contains 12,249 words. Along with this brief I have filed a motion for leave to file an oversized brief.

/s/ Ryan M. Schiff
Ryan M. Schiff

Certificate of Service

I, Ryan M. Schiff, hereby certify that I will cause the above brief to be served on all counsel of record in this case through the Massachusetts e-filing system.

/s/ Ryan M. Schiff
Ryan M. Schiff