No. 16-579

IN THE Supreme Court of the United States ------ **♦** ------Ahmad Bright, Petitioner, v. Commonwealth of Massachusetts, Respondent. ------ 💠 -------On Petition For Writ Of Certiorari To The Massachusetts Appeals Court BRIEF OF AMICI CURIAE JUVENILE LAW CENTER AND CENTER FOR LAW, BRAIN AND BEHAVIOR IN SUPPORT OF PETITIONER

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010 (2010)11, 1	. •
Anouk de Boer et al., An Experimental	
Study of Risk Taking Behavior Among	
Adolescents: A Closer Look at Peer and	
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(2016)	7
(2010)10, 1	. 1
Bernd Figner et al., Affective and	
Deliberative Processes in Risky Choice:	
Age Differences in Risk Taking in the	
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Experimental Psychol. 709 (2009)	0
EXPERIMENTAL ESTUROL. 109 (2009)	.0
Christopher N. Cascio et al., Buffering	
Social Influence: Neural Correlates of	
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Elizabeth S. Scott & Laurence Steinberg,	
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Laurence Steinhaum et al Deans Inches	
Laurence Steinberg et al., Peers Increase	
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(2014)	6

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INTEREST OF AMICI¹

Juvenile Law Center, founded in 1975, is the oldest public interest law firm for children in the United States. Juvenile Law Center advocates on behalf of youth in the child welfare and criminal and juvenile justice systems to promote fairness, prevent harm, and ensure access to appropriate services. Among other things, Juvenile Law Center works to ensure that children's rights to due process are protected at all stages of juvenile court proceedings, from arrest through disposition, from post-disposition through appeal, and; that the juvenile and adult criminal justice systems consider the unique developmental differences between youth and adults in enforcing these rights.

The Center for Law, Brain and Behavior of the Massachusetts General Hospital is a nonprofit organization whose goal is to provide responsible, ethical and scientifically sound translation of neuroscience into law, finance and public policy. Research findings in neurology, psychiatry, psychology, cognitive neuroscience and neuroimaging are rapidly affecting our ability to understand the relationships between brain functioning, brain development and behavior. Those findings, in turn, have substantial implications for the law in general,

¹ Pursuant to Rule 37.2 counsel of record received timely notice of the intent to file this brief and the consent of counsel for all parties is on file with this Court. Pursuant to Rule 37.6, no counsel for a party authored this brief in whole or in part. No person or entity, other than *Amici*, their members, or their counsel made a monetary contribution for the preparation or submission of this brief.

and criminal law, in particular, affecting concepts of competency, culpability and punishment, along with evidentiary questions about memory, eyewitness identification and even credibility. The Center, located within the MGH Department of Psychiatry, seeks to inform the discussion of these issues by drawing upon the collaborative work of clinicians and researchers, as well as a board of advisors comprising representatives from finance, law, academia, politics, media and biotechnology. It does so through media outreach, educational programs for judges, students and practitioners, publications, a "Law Neuroscience" course at the Harvard Law School, and amicus briefs. A particular focus of CLBB has been the question of what constitutes responsible and legal behavior in children and adolescence.

SUMMARY OF ARGUMENT

The case of Ahmad Bright raises fundamental constitutional issues unresolved by this Court in Miller v. Alabama, 132 S. Ct. 2455 (2012). At issue is the constitutional injury suffered by juveniles under the Massachusetts sentencing scheme, a scheme common throughout the country. Massachusetts law provides no occasion for the court to consider the unique neurodevelopmental issues of a 16-year-old at the time of prosecution, conviction or sentencing for second degree murder. In Massachusetts, he charge of homicide, whatever its degree, requires a mandatory transfer to an adult court. Mass. Gen. Laws ch. 119 § 74 (2013). In the adult system, a conviction for second degree murder imposes a mandatory life sentence. After fifteen years, the juvenile may petition for review by the parole board, which has unfettered discretion to grant or deny parole. Therefore, the possibility of parole, although statutorily available, is not meaningful.

The constitutional injury to Bright is made worse here not merely because of the charge and conviction. The theory of homicide underlying Bright's conviction is not one of direct participation in the murder but a derivative liability theory—here, joint venture. Derivative liability ignores the scientific findings underscored by this Court in *Miller* and its predecessors, *Graham v. Florida*, 560 U.S. 48 (2010) and *Roper v. Simmons*, 543 U.S. 551 (2005), and more recent scientific evidence showing that adolescent development is strongly context dependent: risk taking behavior, deficits in adolescent decision-making, and vulnerability to peer influence are exacerbated in certain settings. Theories of derivative

liability, like joint venture, that preclude any individualized examination of the circumstances of the defendant's participation run afoul of this Court's holding in *Miller* and the Eighth Amendment proportionality requirements.

ARGUMENT

I. This Court Should Grant Certiorari To Clarify That Juveniles Who Did Not Kill Or Intend To Kill Cannot Be Sentenced To Mandatory Life Imprisonment

The boundaries of the Eighth Amendment are dynamic and constantly evolving. In recent years, Eighth Amendment jurisprudence has evolved with extraordinary speed in the context of juvenile sentencing. Prior to this Court's 2005 decision in Roper v. Simmons, juvenile offenders could be sentenced to death. Roper v. Simmons, 543 U.S. 551 (2005). Less than a decade later, not only the death penalty, but life without parole sentences for children are disfavored, and mandatory life without parole sentences prohibited entirely. See Miller v. Alabama, 132 S. Ct. 2455, 2469 (2012) ("[W]e think appropriate occasions for sentencing juveniles to this harshest possible penalty [life without parole] will be uncommon."). This evolution in Eighth Amendment jurisprudence has been informed by neuroscience and adolescent developmental research that establishes that children who commit crimes are less culpable than adults, and demonstrates how youth have a distinctive capacity for rehabilitation. In light of this research, this Court has held that sentences that may be permissible adult offenders for are unconstitutional for juvenile offenders. See, e.g., Miller, 132 S. Ct. at 2465 ("In [Graham v. Florida], juvenile status precluded a life-without-parole sentence, even though an adult could receive it for a similar crime.").

A. This Court's Jurisprudence Reflects The Recognition That Children Are Categorically Less Deserving Of The Harshest Forms of Punishment

Because children are categorically less culpable than adults, imposing a mandatory or presumptive adult sentence on a juvenile offender creates a substantial risk that the punishment will be disproportionate. *See, e.g., Miller,* 132 S. Ct. at 2469 ("By making youth (and all that accompanies it) irrelevant to imposition of that harshest prison sentence, such a scheme poses too great a risk of disproportionate punishment."). As Professor Martin Guggenheim has observed,

[a] state sentencing statute that requires, regardless of the defendant's age, that a certain sentence be imposed based on the conviction violates a juvenile's substantive right to be sentenced based on the juvenile's culpability. When the only inquiry made by the sentencing court is to consult the legislature's mandatory punishment for the crime, without any further inquiry into whether punishment is appropriate for a juvenile. for no other reason than it is appropriate for an adult, the Constitution requires more.

Martin Guggenheim, Graham v. Florida and a Juvenile's Right to Age-Appropriate Sentencing, 47 HARV. C.R.-C.L. L. REV. 457, 490-91 (2012) (citing Graham, 560 U.S. at 88 (Roberts, C.J., concurring) ("[J]uvenile offenders are generally—though not necessarily in every case—less morally culpable than adults who commit the same crimes."). See also Miller, 132 S. Ct. at 2468 ("Graham and Roper and our individualized sentencing cases alike teach that in imposing a State's harshest penalties, a sentencer misses too much if he treats every child as an adult."). When sentencing a child, a sentencer must take into account the child's "diminished culpability and greater prospects for reform." Id. at 2464. As Chief Justice Roberts remarked, concurring in *Graham*, "[o]ur system depends upon sentencing judges applying their reasoned judgment to each case that comes before them." Graham v. Florida, 560 U.S. 48, 96 (2010) (Roberts, C.J., concurring).

In *Roper*, *Graham*, and *Miller*, this Court recognized that children are fundamentally different from adults and categorically less deserving of the harshest forms of punishments. Relying on *Roper*, this Court in *Graham* cited three essential characteristics which distinguish youth from adults for culpability purposes:

[a]s compared to adults, juveniles have a "lack of maturity and an underdeveloped sense of responsibility"; they "are more vulnerable or susceptible to negative influences and outside pressures,

including peer pressure"; and their characters are "not as well formed."

560 U.S. at 68 (citing *Roper*, 543 U.S. at 569-70). Graham found that "[t]hese salient characteristics mean that '[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 corruption.' Accordingly, *'iuvenile* offenders cannot with reliability be classified among the worst offenders." Id. (quoting Roper, 543 U.S. at 569, 573). This Court concluded that "[a] juvenile is not absolved of responsibility for his actions, but his transgression is not as morally reprehensible as that of an adult." Graham, 560 U.S. at 68 (quoting Thompson v. Oklahoma, 487 U.S. 815, 835 (1988) (plurality opinion)). Because the personalities of adolescents are still developing and capable of change, an irrevocable penalty that affords no opportunity for isdevelopmentally inappropriate constitutionally disproportionate. This Court further explained that:

Juveniles are more capable of change than are adults, and their actions are less likely to be evidence of "irretrievably depraved character" than are the actions of adults. *Roper*, 543 U.S. at 570. It remains true that "[f]rom a moral standpoint it would be misguided to equate the failings of a minor with those of an adult, for a greater possibility exists that a minor's character deficiencies will be reformed." *Id*.

Graham, 560 U.S. at 68. The holding in *Graham* rested largely on the incongruity of imposing a final and irrevocable penalty on an adolescent, who had capacity to change and grow.

In reaching these conclusions about a juvenile's reduced culpability, this Court has relied upon an increasingly settled body of research confirming the distinct emotional, psychological and neurological attributes of youth. This Court clarified that, since Roper, "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." Graham, 560 U.S. at 68. Thus, because juveniles are more likely to be reformed than adults, the "status of the offenders" is central to punishment ofwhether a auestion constitutional. Id. at 68-69.

In 2012, this Court expanded its juvenile sentencing jurisprudence, banning mandatory life without parole sentences for children convicted of homicide offenses. Reiterating that children are fundamentally different from adults, this Court held that a sentencing scheme that mandates life without parole for juvenile offenders violates the Eighth Amendment and that the sentencer must take into account the juvenile's "lessened culpability," "greater 'capacity for change," and individual characteristics before imposing this harshest available sentence. Miller, 132 S. Ct. at 2460 (quoting Graham, 560 U.S. at 68, 74). "[T]hose [scientific] findings—of transient rashness, proclivity for risk, and inability to assess consequences—both lessened a child's culpability' and enhanced the prospect that, as the years go by and neurological development occurs, his 'deficiencies will be reformed." Id. at 2464-65 (quoting Graham, 560 U.S. at 68-69); Roper, 543 U.S. at 570. Importantly, in *Miller*, this Court found that none of what Graham "said about children-about their distinctive (and transitory) mental traits and environmental vulnerabilities—is crime-specific." 132 S. Ct. at 2465 (emphasis added). Rather, "the distinctive attributes of youth diminish penological justifications for imposing the harshest sentences on juvenile offenders, even when they commit terrible crimes." Id. Justice Sotomayor recently underscored *Miller's* mandate, requiring judges to make specific findings to determine "whether the petitioner was among the very 'rarest of juvenile offenders, those whose crimes reflect permanent incorrigibility." Tatum v. Arizona, No. 15-8850, 2016 WL 1381849, at *1 (Oct. 31, 2016) (Sotomayor, J., concurring) (quoting *Montgomery*, 136 S. Ct. 718, 734 (2016)).

B. Second Degree Murder Under A Theory Of Joint Venture Is Equivalent To A Nonhomicide Crime Under Graham v. Florida Because It Does Not Require That A Defendant Kill Or Intend To Kill The Victim

To the extent juvenile life sentences are ever appropriate, *Graham* and *Miller* necessitate that they be imposed only in the most extreme circumstances. *Graham* emphasizes the "twice diminished" moral culpability of juvenile offenders who do not kill or intend to kill. 560 U.S. at 69. It is inconsistent with the logic of *Graham*—which mandates proportionality

and graduation of sentences based on culpability and the nature of the offense—to sentence murder accomplices with the same maximum level of punishment, life without parole, as juveniles convicted of more serious crimes with greater degrees of culpability. *Id.* at 59 ("Embodied Constitution's ban on cruel and unusual punishments is the 'precept of justice that punishment for crime should be graduated and proportioned to [the] offense." (citing Weems v. United States, 217 U.S. 349, 367 (1910))). Under Miller, a juvenile who was not found to have killed or intended to kill cannot be categorized as one of the most culpable juvenile offenders for whom the harshest available sentence, life without parole, would be proportionate or appropriate. See Miller, 132 S. Ct. at 2476 (Brever, J., concurring) ("The dissent itself here would permit life without parole for 'juveniles who commit the worst types of murder,' but that phrase does not readily fit the culpability of one who did not himself kill or intend to kill.") (citation omitted).

Simply put, an accomplice is less culpable than a shooter and should never be categorized as one of the "uncommon," most serious, most culpable juvenile offenders for whom a life without parole sentence would be proportionate or appropriate. See Miller, 132 S. Ct. at 2469. Graham held that a juvenile who does not commit homicide cannot be sentenced to life without parole. Graham, 560 U.S. at 82. Graham forbids the imposition of this sentence on juveniles "who do not kill, intend to kill, or foresee that life will be taken" because they "are categorically less deserving of the most serious forms of punishment than are murderers. . . . [A] juvenile offender who did

not kill or intend to kill has a twice diminished moral culpability." *Id.* at 69.

The reasoning in *Graham* builds on this Court's felony murder jurisprudence, which recognizes that the diminished culpability of non-principals precludes the application of mandatory sentencing schemes to individuals who may have participated, but did not commit a murder. *See Tison v. Arizona*, 481 U.S. 137, 151 (1987) (upholding defendants' death sentences when they acted with "reckless indifference" and their participation in the crime was "major"); *Enmund v. Florida*, 458 U.S. 782, 798, 801 (1982) (limiting culpability for the felony crime because homicide crimes are morally different). When sentencing a child, this reasoning applies with greater force. *Miller*, 132 S. Ct. at 2470 ("[A] sentencing rule permissible for adults may not be so for children.").

Conviction under a theory of joint venture can be analogized to a felony degree murder conviction, which requires simply that an offender participate in a felony and that someone was killed in the course of the felony; the offender need not have actually committed the killing or even have intended that anyone would die. It requires only the intent to commit or be an accomplice to the underlying felony. Mass. Gen. Laws ch. 274 §2.

Even when a juvenile may foresee some likelihood that death will result, acting with the knowledge that death is more than a merely probable result is not the same as acting with the "inten[t] to kill" described by *Graham*. 560 U.S. at 69. As Massachusetts' own first degree murder statute reflects, acting with a specific intent to kill is a more serious and more culpable crime. Mass. Gen. Laws ch. 265 § 1 (first degree murder defined in part as with

"deliberately premediated malice aforethought"). The specific intent required in deliberation or planning for first degree murder underscores *Graham*'s reasoning that juveniles who do not kill or intend to kill demonstrate reduced culpability and thus must be precluded from receiving life sentences. 560 U.S. at 69..

Bright did not kill or intend to kill. Bright was convicted under Massachusetts' joint venture statute, Mass. Gen. Laws ch. 274 § 2, which requires that he "aid[ed] in the commission of a felony, or [wa]s accessory thereto before the fact by counselling, hiring or otherwise procuring such felony to be committed," and therefore is "punished in the manner provided for the punishment of the principal felon". See Commonwealth v. Zanetti, 910 N.E.2d 869 (Mass. 2009) (holding that a joint venture is equivalent to an individual who aids or abets the commission of the crime, but silent as to whether it imputes the same level of intent). Bright participated in the commission of the crime, but no evidence links him as the principal actor.

II. The Rationale Underlying Joint Venture Liability Is Inconsistent With This Court's Jurisprudence And More Recent Adolescent Development Research

Imposing liability on a juvenile accomplice for the same crime as his adult codefendant who acted as the principal in the commission of the crime is inconsistent with adolescent developmental and neurological research recognized and adopted by this Court in *Roper*, *Graham*, *J.D.B.*, and *Miller*. *See*, *e.g.*, *J.D.B.* v. *North Carolina*, 564 U.S. 261, 274 (2011)

(noting that the common law has long recognized that the "reasonable person" standard does not apply to children); see also, Miller, 132 S. Ct. at 2464 ("[C]hildren have a 'lack of maturity and an underdeveloped sense of responsibility,' leading to recklessness, impulsivity, and heedless risk-taking.") (quoting Roper, 543 U.S. at 569). As Justice Breyer explains in his concurring opinion in Miller:

At base, the theory of transferring a defendant's intent is premised on the idea that one engaged in a dangerous felony should understand the risk that the victim of the felony could be killed, even by a confederate. Yet the ability to consider the full consequences of a course of action and to adjust one's conduct accordingly is precisely what we know juveniles lack capacity to do effectively.

132 S. Ct. at 2476 (Breyer, J., concurring) (citations omitted).

Indeed, behavioral and neurological research since *Miller* suggests that specific contexts, such as the presence of peers, the existence of threats or a setting of high arousal, exacerbate adolescent deficiencies in decision-making and risk appraisal. Theories of liability that preclude individualized consideration of the *setting* in which adolescent decisions take place are also constitutionally flawed under *Miller*.

A. Juveniles Convicted Under Joint Venture Theory Have Reduced Culpability

Bright was convicted of second degree murder under a theory of joint venture liability. His age and the offense for which he was charged required his prosecution in the adult criminal justice system. Miller, together with Roper, Graham, "children Montgomery, establish that are constitutionally different from adults for purposes of sentencing." Miller, 132 S. Ct. at 2464. Given this Court's jurisprudence establishing that juveniles are developmentally different and less mature than adults, a sentencer must presume that a juvenile homicide offender lacks the maturity, impulse-control and decision-making skills of an adult. Indeed, it would be the unusual juvenile whose participation in criminal conduct is not closely correlated with his immaturity, impulsiveness, and underdeveloped decision-making skills. Therefore, absent expert testimony establishing that a particular juvenile's maturity and sophistication were more advanced than a typically-developing juvenile, a sentencer must presume that the juvenile offender lacks adult maturity, adult impulse control, and consistent critical decision-making skills, and treat this lack of maturity as a factor counseling against the imposition of a life sentence.

B. The Unique Developmental Attributes Of Youth Are Context Specific, Contexts For Which The Law Of Joint Venture Fails To Account

Because adolescents' risk assessment and decision-making capacities differ from those of adults in ways that make it unreasonable to presume that juveniles would reasonably know or foresee that death may result from their actions, their risk-taking should not be equated with malicious intent. In particular, this Court has noted that adolescents have "[d]ifficulty in weighing long-term consequences" and "a corresponding impulsiveness." Graham, 560 U.S. at 78. See also Elizabeth S. Scott & Laurence Steinberg. Adolescent*Development* and theRegulation of Youth Crime, 18 THE FUTURE OF CHILDREN 15, 20 (2008).

But these deficits are particularly pronounced in certain settings. Studies reveal that adolescents are more vulnerable to peer influence and likely to experience greater reduction in self-control and impulsivity and greater decision-making deficits in excited emotional states than are adults in similar situations. Punishments that do not account for these particular attributes of youth are violative of this Court's mandates in *Miller*.

1. Adolescents Are More Susceptible To Peer Influence

Empirical studies in behavioral psychology and neuroscience continue to confirm that impulsive risktaking is heightened under peer influence, a salient factor in risky behavior among adolescents, but less so among adults. See, e.g., Laurence Steinberg et al., Peers Increase Adolescent Risk Taking Even When The Probabilities of Negative Outcomes Are Known, 50 DEVELOPMENTAL PSYCHOL. 1, 2 (2014) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4305434/pdf/nihms652797.pdf;

Christopher N. Cascio et al., Buffering Social Influence: Neural Correlates of Response Inhibition Predict Driving Safety in The Presence of a Peer, 27 J. COGNITIVE NEUROSCI. 83, 89 (2015); Nancy Rhodes et al., Risky Driving Among Young Male Drivers: The Effects of Mood And Passengers, Transp. Res. 65, 72-75 (2014); Anouk de Boer et al., An Experimental Study of Risk Taking Behavior Among Adolescents: A Closer Look at Peer and Sex Influences, J. Early ADOLESCENCE 1, 2 (2016). Adolescents' risk-taking behavior in the presence of their peers coincides with "increased activation of brain regions specifically associated with the prediction and valuation of rewards. including the ventral striatum orbitofrontal cortex." Laurence Steinberg et al., Peers Increase Adolescent Risk Taking Even When The Probabilities of Negative Outcomes Are Known, 50 DEVELOPMENTAL PSYCHOL. 1, (2014),https://www.ncbi.nlm.nih.gov/pmc/articles/PM C4305434/pdf/nihms652797.pdf. In other words, adolescents perceive higher reward, and thus greater incentive than adults to take risks in front of their peers. Id. at F8.

The *type* of peer that is present and what social norms he or she promotes also impact the elevation of risk-taking behavior by adolescents. For example, in a "simulated driving session," adolescents "drove through intersections with red lights 20.7% of the time when they drove with a peer versus 12.6% of the

time when they drove alone, thus demonstrating higher risk-taking in the presence of peers" Cascio, supra, at 89. Yet "participants drove through intersections with red lights significantly more when they drove with a risky peer . . . versus with a cautious peer . . . in the car." Id. In short, "adolescent participants increased their risk-taking behavior in the presence of peers compared with solo driving, regardless of the norms the peer embodied, with the greatest increases when social norms favored risk" (emphasis added). Id. at 92. Furthermore, "the presence of peers increases arousal, and increases sensitivity for social evaluation, a process specifically present in adolescents." Anouk de Boer et al., An Experimental Study of Risk Taking Behavior Among Adolescents: A Closer Look At Peer And Sex Influences. J. EARLY ADOLESCENCE. 1, 11 (2016); See e.g., Leah Somerville, The Teenage Brain: Sensitivity To Social Evaluation, 22 Current Directions in Psychol. Sci. 121, 124 (2013); Leah Somerville et al., The Medical Prefrontal Cortex and the Emergence of Self-Conscious Emotion In Adolescence, 24 PSYCHOL. Sci. at 1554 (2013). Indeed, in some situations, desire for peer acceptance may lead adolescents to decide that it is actually riskier for them to not go along with their peers.

2. Adolescents Exhibit Reduced Self-Control In Affective Contexts

Juveniles are also more likely than adults to take risks in emotionally-charged or exciting situations. See, e.g., Alexandra Cohen et al., When Is An Adolescent An Adult? Assessing Cognitive Control in Emotional and Nonemotional Contexts, 27 PSYCHOL. Sci. 549, 555-559 (2016); Bernd Figner et al., Affective and Deliberative Processes in Risky Choice: Age Differences in Risk Taking in the Columbia Card Task, 35 J. Experimental Psychol. 709, 710 (2009). Although adolescents react impulsively to positive cues (i.e. happy facial expressions as opposed to neutral ones), Leah Somerville et al., Frontostriatal Maturation Predicts Cognitive Control Failure to Appetitive Cues in Adolescents, 23 J. COGNITIVE NEUROSCI. 2123, 2129 (2011), they also experience reduced self-control "in the presence of threat." Michael Dreyfuss et al., Teens Impulsively React Rather Than Retreat From Threat, DEVELOPMENTAL. NEUROSCI. 1, 7 (2014). Instead of "retreating or withholding a response to threat cues, adolescents are more likely than adults to impulsively react to them, even when instructed not to respond." *Id*.

Loss of self-control persists even when a threat is prolonged. In one study, young adults experienced reduced self-control by performing poorly on tasks "under both brief and prolonged negative emotional arousal relative to slightly older adults, a pattern not observed in neutral or positive situations." Cohen, supra, at 559. This behavioral tendency among teens and young adults "was paralleled by their decreased activity in cognitive-control circuitry" of the brain. Id. In contrast, heightened activity in the region of the brain that implicates "affective computations and regulation"—or emotion processing—was observed, suggesting that "heightened sensitivity to potential threat" results in "emotional interference and diminished cognitive control" for young adults. Id.

3. Scientific Research Confirms The Unique Challenges Of Joint Venture Liability

Taken as a whole, this body of evidence suggests that the social context of adolescent misconduct in peer-group settings is particularly relevant to the calculation of a juvenile's culpability. While *Miller* reaffirmed that juveniles are constitutionally different from adults because of their immaturity and vulnerability to "negative influences and outside pressures" see Miller, 132 S. Ct. at 2464 (citing Graham, 560 U.S. at 68), post-Miller studies show that certain contexts exacerbate adolescent deficits. Adolescents' reckless impulsivity and vulnerability to external pressure become heightened under peer observation and emotionally-charged situations, which are both likely to be present in joint venture settings. Because peer influence and emotional stress undermine adolescents' capacity to make sound judgments, "irresponsible conduct" rising in joint ventures should not be automatically held "as morally reprehensible as that of an adult," Roper, 543 U.S. at 570 (quoting *Thompson*, 487 U.S at 835 (plurality opinion), nor subject to "the most severe punishments" such as mandatory life imprisonment. Miller, 132 S. Ct. at 2464 (citing *Graham*, 560 U.S. at 68).

In short, scientific evidence shows demonstrable and replicable increases in risk-taking that are highly context-dependent for adolescents. A theory of criminal liability that fails to take that context into account runs afoul of Miller. Individualized "distinctive (and consideration of a juvenile's mental transitory) traits and environmental vulnerabilities," see Miller 132 S. Ct. at 2465, such as

peer pressure, social context, and stress, in general, and the setting in which those deficits are exacerbated, is constitutionally required to ensure that a punishment fits both the offense and the offender.

CONCLUSION

For the foregoing reasons, *Amici* respectfully request that this Court grant the petition for a *writ of certiorari*.

Respectfully Submitted,

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