

## EMPIRICAL ARTICLE

# Life after life: Recidivism among individuals formerly sentenced to mandatory juvenile life without parole

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## Abstract

In *Miller v. Alabama* (2012), the Supreme Court abolished mandatory juvenile life without parole (JLWOP) sentences and subsequently decided that the ruling applied retroactively (*Montgomery v. Louisiana*, 2016), effectively rendering thousands of inmates eligible for resentencing and potential release from prison. In its decisions, the Court cited developmental science, noting that youth, by virtue of their transient immaturity, are less culpable and more amenable to rehabilitation relative to their adult counterparts. Specifically, the Court notes adolescents' propensity for impulsive action, sensitivity to social influence, and difficulty understanding long-term consequences. Even so, these rulings raised concerns regarding the consequences of releasing prisoners who had committed heinous crimes as juveniles. Several years after the Court's decision, preliminary data are now available to shed light on rates of recidivism among those released. The current paper comprises three goals. First, we discuss the science of adolescent development and how it intersects with legal practice, contextualizing the Court's decision. Second, we present recidivism data from a sample of individuals formerly sentenced to JLWOP in Pennsylvania who were resentenced and released under *Miller* and *Montgomery* ( $N=287$ ). Results indicate that 15 individuals received new criminal charges up to 7 years postrelease (5.2%), the majority of which were nonviolent offenses. This low rate of recidivism is consistent with the developmental science documenting compromised decision-making during the adolescent years, followed by desistance from criminal behavior in adulthood. Lastly, we discuss the importance of interdisciplinary collaborations between researchers and legal practitioners, as well as critical future avenues of research in this area.

## KEYWORDS

adolescence, culpability, development, juveniles, legal policy

## INTRODUCTION

In a string of decisions spanning over a decade, the United States Supreme Court ruled that sentencing juveniles to the most severe justice system sanctions, such as the death penalty, violates the Eighth Amendment's prohibition of cruel and unusual punishment. Most recent among these decisions were *Miller v. Alabama* (2012), which abolished mandatory life sentences without the possibility for parole for juvenile offenders (JLWOP), and *Montgomery v. Louisiana* (2016), in

which the court ruled that *Miller* should be applied retroactively for youth who had received JLWOP prior to 2012. With this landmark decision in place, more than 2000 incarcerated individuals serving JLWOP became eligible for resentencing across the United States (Rovner, 2021). These rulings reflect the best, most rigorous developmental science available. However, legal practitioners must balance the benefits of incorporating evidence-based practices with practical concerns, such as justice for victims and public safety. The release of individuals sentenced to JLWOP indeed raises

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questions regarding public safety, particularly given the seriousness of the crimes for which these individuals were initially incarcerated. It is critical, therefore, to provide legal practitioners, policy makers, and researchers information regarding recidivism among those resentenced and released under *Miller* and *Montgomery*.

The goals of the present paper are threefold. First, we will describe the intersection between developmental psychology and the law, contextualizing the Supreme Court's rationale on this controversial topic by discussing how the science of adolescent development was applied to change policy. In particular, we explicate how characteristics of adolescent psychological development both diminish—but do not negate—their culpability for their crimes and bolster their amenability to rehabilitation. Second, in collaboration with attorneys from a nonprofit law firm, Juvenile Law Center, we present postrelease offending data from a sample of individuals in Pennsylvania who were resentenced and released under *Miller* and *Montgomery*. Notably, the state of Pennsylvania comprises the largest number of youth who were sentenced to JLWOP and accordingly, these data may shed light on whether these individuals, previously assumed irredeemable, pose a threat to public safety. Third, we discuss outstanding questions pertaining to JLWOP resentencing and policy, highlighting the need for collaborations between researchers and legal practitioners to improve policy outcomes and increase the usefulness of developmental science.

## A developmental context for juvenile offending

In the past two decades, decisions from the U.S. Supreme Court reinforced protections for juveniles charged with serious crimes. In *Roper v. Simmons* (2005), the Court abolished the juvenile death penalty. In 2010, *Graham v. Florida* abolished JLWOP for nonhomicide crimes. Then, *Miller* (2012) extended the prohibition of mandatory JLWOP to all cases including homicide, and *Montgomery* (2016) established that this ruling applies retroactively. Common to these decisions is the Court's conclusion that the imposition of our harshest sanctions constitutes cruel and unusual punishment for developing youth, thus violating the Eighth Amendment of the Constitution. Indeed, the Court cites developmental science in its opinions, noting that juvenile offenders are fundamentally different from adults in ways that diminish their culpability, and therefore, warrant different treatment under the law (see Steinberg & Icenogle, 2019 for a summary).

At times, the Court has articulated these differences in broad strokes, stating that youth experience a “lack of maturity and underdeveloped sense of responsibility” (*Roper v. Simmons*, 2005) and that the brains of young people “continue to mature through late adolescence” (*Graham v. Florida*, 2010). In the *Miller* opinion, for example, the Supreme Court notes that “the distinctive attributes of youth diminish the penal justifications for imposing the harshest sentences on juvenile offenders, even when they commit

terrible crimes” (*Miller v. Alabama*, 2012). As summarized by Grisso and Kavanaugh (2016), there are five factors: (1) *Decisional*: characteristics inherent to the adolescent period, such as impulsivity and myopia, compromise decision-making capacity, (2) *Dependency*: youth face obstacles extricating themselves from dysfunctional or criminogenic circumstances, such as negative family influence, (3) *Offense Context*: youth are vulnerable to the circumstances around the offense, particularly if the offense involved a group, (4) *Legal Competency*: decision-making capacity may be compromised during the process of arrest and adjudication, and (5) *Rehabilitation*: by the nature of their developmental stage, youth experience a greater capacity for change and rehabilitation relative to adults. Here, we focus on the endogenous developmental attributes associated with criminal behavior, which reside primarily within the *decisional* factor though overlap with others, including *rehabilitation* and *offense context* factors.

## Adolescent risk taking

The Court notes that adolescents are prone to “impetuosity and ill-considered actions” (*Roper v. Simmons*, 2005). Indeed, relative to adults, adolescents take more risks. Alcohol, tobacco, and drug use typically starts in adolescence (Blum & Nelson-Mmari, 2004), and accidents—most commonly automobile crashes—are the leading cause of death among adolescents (Centers for Disease Control and Prevention, 2019). As with health-related risks, *antisocial* risks are more common during adolescence than during any other developmental stage, with illegal activity peaking during mid- to late adolescence and declining as youth transition to adulthood (Farrington, 1986; Farrington et al., 2012). While most youth do not engage in serious criminal behavior, it is important to recognize that researchers document elevated risk-taking behavior in some form across community samples and justice-involved samples alike. Put differently, while not all youth will engage in serious criminal activity, risk taking is elevated during the teen years followed by declines into adulthood. Indeed, the vast majority of individuals who commit crimes in their youth will desist during adulthood (Cauffman et al., 2015; Jolliffe et al., 2017).

Normative developmental processes underlie adolescents' propensity for and desistance from risky behavior. Facets of *psychosocial maturity*, such as reward sensitivity, susceptibility to social influence, impulse control, and future orientation, change across adolescence and influence youths' judgment and decision-making (Cauffman & Steinberg, 2000; Icenogle et al., 2019; Steinberg, Cauffman, et al., 2009; Steinberg, Graham, et al., 2009). Studies indicate that these particular domains differ between adolescents and adults, and that each individually contributes to risk taking generally and criminal behaviors specifically. Yet, as the science demonstrates and the Court echoed, these attributes are *transient*. While there may be variation in the rate of maturation of specific psychosocial attributes, it is clear

that none reach maturation prior to age 18. In fact, with a growing body of evidence suggesting that adult levels of maturity are not fully reached until the mid-twenties or later (Cohen et al., 2016; Hooper et al., 2004; Ordaz et al., 2013; Steinberg et al., 2018).

### Reward sensitivity

Reward sensitivity is the degree to which potential or received rewards alter or drive behavior. Compared to adults, adolescents are more sensitive to rewards, which may manifest in risk taking—including criminal behaviors—through several pathways. First, reward sensitivity can be expressed and measured as sensation seeking, or the desire for exciting, novel experiences, even those that might be dangerous or illegal (Zuckerman, 1994). Accordingly, adolescents may have a greater propensity to engage in criminal activity in light of its potential for excitement. Elevated sensation seeking in adolescence is indeed associated with a host of risky and antisocial behaviors (Baker et al., 2020; Lydon-Staley & Geier, 2018; Peach & Gaultney, 2013). Second, adolescents modulate their behavior in response to rewards more so than adults. On laboratory tasks, adolescents learn more quickly than adults when rewarded for correct responses (Cauffman et al., 2010; Davidow et al., 2016; Decker et al., 2015). These behavioral findings are complemented by brain studies that document heightened neural activity in reward-related circuitry in the brain among adolescents relative to adults (Braams et al., 2016; Van Leijenhorst et al., 2010). Thus, in the context of antisocial behavior, rewards stemming from illegal acts (e.g., impressing one's peers or taking valuable property) may be hyper-salient and reinforcing for adolescents. Reward sensitivity, in whatever way it manifests, may bias the decision-making process among young people in that they seek out exciting and novel experiences in appropriate ways (e.g., through illegal behaviors), and any subsequent rewards reinforce said behavior.

### Susceptibility to social influence

Developmental studies reveal that adolescence is a period of increased sensitivity to peer feedback and approval (see review by Sebastian et al., 2010). In an early study of peer influence among adolescents, Gardner and Steinberg (2005) found that adolescents, but not adults, take more risks in the presence of their peers. Moreover, peer presence is itself rewarding, and peer presence may further sensitize the brain to reward (Breiner et al., 2018; Chein et al., 2011; Smith et al., 2015). That is, being with peers may exacerbate reward sensitivity. For instance, using delay discounting tasks—which pit smaller rewards available immediately against larger rewards available after a delay—adolescents' decision-making shifts towards choosing the smaller, but immediately-available reward when they are in the presence of peers compared to when they are alone (O'Brien et al., 2011; Weigard et al., 2014).

In the same vein, using a nationally representative sample, Curry et al. (2012) note that 16-18-year-old drivers are significantly more likely to engage in risky driving when peer passengers are present than when driving alone. It is not difficult to imagine scenarios in which adolescents' heightened susceptibility to social influence precipitates criminal activity, an idea corroborated by the number of crimes committed in groups compared to alone (Cooper & Smith, 2011; McCord & Conway, 2005).

### Impulse control and future orientation

One of the most infamous stereotypes of adolescents is their apparent inability to think before acting. This broad generalization may be more accurately parsed into two related processes. On one hand, adolescents evince higher *impulsivity* than adults: they seem to act without thinking, struggle to inhibit their responses, and are less likely to plan ahead (Lydon-Staley & Geier, 2018; Monahan et al., 2015; Shulman et al., 2015; Steinberg et al., 2018). On the other hand, they demonstrate less *future orientation* than adults: they weigh short-term outcomes more heavily than long-term ones, particularly in the face of a potential reward (Achterberg et al., 2016; Lee et al., 2015; Steinberg, Cauffman, et al., 2009; Steinberg, Graham, et al., 2009). Furthermore, both impulsivity and future orientation are related to risk taking and antisocial behavior (Felton et al., 2020; Jones et al., 2020; Leeman et al., 2014; Peach & Gaultney, 2013; Scott-Parker & Weston, 2017). In sum, a young decision maker may struggle to inhibit an impulse, such as striking out in anger, and may further overweight the immediate consequences of their action over later ones, such as relief or satisfaction of retaliation at the cost of being charged with assault or getting injured in a fight.

### The application of developmental science

The confluence of these developmental attributes supports the contention that adolescents' mental calculus differs from that of adults, resulting in what the Court calls "ill-considered decisions." These different facets of normative development each contribute to this differential calculation. Young people are more prone to take risks, including in criminogenic situations, yet these propensities diminish with age. In light of this developmental science, the Court concluded that most individuals convicted of serious crimes as juveniles—even homicide—experience diminished culpability for their actions and are not beyond redemption. To the extent that criminal behavior is linked to normative, and transient, developmental processes that compromise the decision-making process, only a few rare individuals will continue to engage in serious criminal activity without any prospect of rehabilitation. While the Court itself does not oversee the process of resentencing and releasing those sentenced to JLWOP, it

clearly anticipates that most of these individuals will not recidivate. It is also notable that all individuals sentenced to JLWOP still spend some amount of time incarcerated before they are eligible for resentencing, and they are evaluated prior to resentencing and release, suggesting that those who do pose a threat to public safety will be denied release.

It is nonetheless important to acknowledge that although normative developmental factors contribute to risk for offending during adolescence, continuously engaging in serious offending is not considered normative. Though the majority of youth will desist from offending as they transition to adulthood, developmental science also suggests that there is a small but significant minority of youth who will continue to offend throughout the life course. Moffitt's (1993) developmental taxonomy of antisocial behavior describes the offending of these individuals as life-course-persistent, in contrast with the more commonly observed adolescence-limited spike in offending behavior. Comprising approximately 5%–10% of justice-involved juveniles, youth who end up in the life-course-persistent group often start offending at a young age, engage in more serious offenses, and are thought to possess a combination of neuropsychological deficits and adverse childhood experiences that contribute to increased offending (Moffitt, 1993). This pattern has been consistently observed in longitudinal studies (Cauffman et al., 2024; Mulvey et al., 2010; Nagin et al., 1995). However, few, if any, factors such as having an incarcerated father (Mulvey et al., 2010) or failing to develop psychosocial maturity (Monahan et al., 2009) reliably distinguish youth in the life-course-persistent group from groups that desist normatively.

Perhaps unsurprisingly, the public and researchers alike have considered whether committing an act as heinous as homicide is indicative of youth whose offending will become life-course-persistent, or if these youth are “incorrigible,” as noted in *Miller*. To date, a handful of publications have shed light on the likelihood of long-term criminal involvement in juveniles charged with homicide after a period of incarceration. In a review of 12 studies that examined recidivism rates of juveniles convicted of murder, attempted murder, or manslaughter, Heide (2020) found that there are generally high numbers of new offenses postrelease, with 11 out of 12 studies reporting recidivism rates from 50% to nearly 90% in their samples. Though these findings may or may not serve as a perfect comparison for individuals who are resentenced and released following *Montgomery* (given that the samples reviewed in the study were not sentenced to JLWOP and were subsequently much younger at release, ranging on average from mid- to late-twenties), the majority of evidence indicates quite a high likelihood of recidivism postrelease.

To date, one prior publication has shed light on the accuracy of the predictions made by the Supreme Court in JLWOP cases and the expectations of developmental science. Using a sample of individuals resentenced and released under *Miller* and *Montgomery* between 2016 and

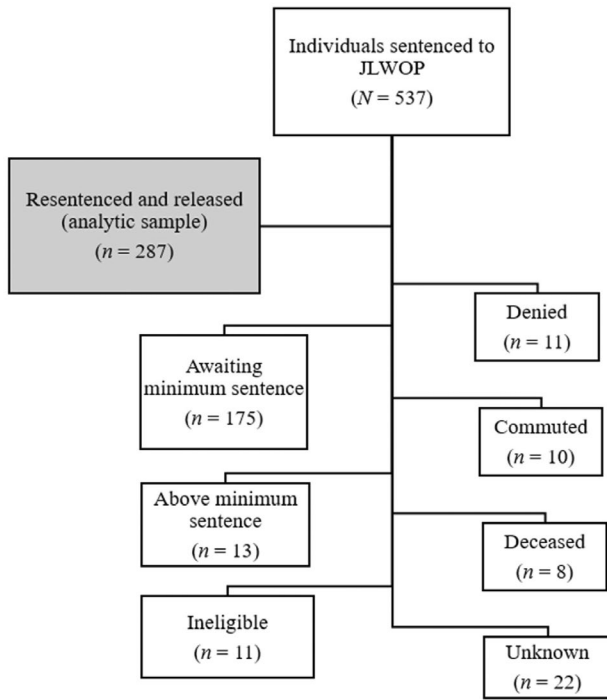
2020, Daftary-Kapur and Zottoli (2020) sought to provide important context to resentencing procedures and subsequent recidivism in Philadelphia, PA. At the time of the *Miller* decision, Philadelphia had the largest number of “juvenile lifers” in the country, with more than 300 individuals eligible for resentencing and potential release. In their project titled “Resentencing of Juvenile Lifers: The Philadelphia Experience,” Daftary-Kapur and Zottoli (2020) explicated the process of resentencing, compared resentencing procedures under different administrations of the District Attorney's Office, and importantly, reported rearrest rates among those released through December 2019 (e.g., up to 3 years postrelease). In their examination of 174 individuals who had been released, they reported that six people had been rearrested, and only two individuals received a new conviction (charges were dropped in the remaining four cases). These findings indicate a significantly lower recidivism rate than that reported by Heide (2020), perhaps reflecting the older age at release ( $M=51$  years of age). Further, they estimated that the state of Pennsylvania will save, conservatively, approximately \$9.5 million in correctional costs over the first 10 years postrelease. A later study of these same individuals comprehensively examined the reentry experiences of juvenile lifers, concluding that the majority were able to obtain employment, find stable housing, and rebuild social connections, which all promote desistance (Daftary-Kapur et al., 2022).

The present study will extend these findings by reporting postrelease charges for all individuals in Pennsylvania resentenced and released from 2016 to 2023, including those in Philadelphia, which sentenced the largest proportion of juvenile lifers in the state. These records capture recidivism data through October 2023 (e.g., up to 7 years postrelease). Notably, the low rearrest rate reported in Daftary-Kapur & Zottoli's (2020) report suggests that that recidivism rate in the present sample will likewise be low. Nonetheless, given the greater number of released juvenile lifers, our expanded time frame, and the high recidivism reported in other studies, it is critical to examine if this pattern still holds and is sustained over time. In addition to using a larger sample and broader time frame, we also interpret our findings through a developmental lens, with practical considerations for lawmakers.

## METHODS

### Participants

The full sample consisted of the 537 individuals sentenced to JLWOP for murder committed as juveniles in Pennsylvania, and who were eligible for resentencing under *Miller v. Alabama* (2012) and *Montgomery v. Louisiana* (2016). Each subject's resentencing status was determined by Juvenile Law Center after reviewing their resentencing documents (see Figure 1). At the time of review in October 2023, 287 individuals were classified as resentenced and released (53.4%). The majority of the



**FIGURE 1** Resentencing status of individuals who received JLWOP as of October 2023.

250 remaining individuals who were not released (46.6%) were classified as awaiting the minimum sentence required by law ( $n = 175$ , 32.6% of the entire sample). Small numbers of individuals had their parole status classified as currently above their minimum sentence ( $n = 13$ , 2%), ineligible ( $n = 11$ , 2%), denied ( $n = 11$ , 2%), and commuted ( $n = 10$ , 2%). Eight individuals are now deceased (1%), and the status could not be determined for 22 individuals (4%). Recidivism data were aggregated for the 287 released and nondeceased individuals through October 15, 2023. Information about the sample gender and race was obtained from official records—the sample of released individuals was predominantly male (97.2%), with 76.3% of the overall sample classified as Black, 15.3% as White, and 8.0% as Hispanic. Race/ethnicity was classified as “Unknown” for one participant (0.3%). This was largely similar to the full sample of potentially eligible juvenile lifers (97.8% male, 71.5% Black, 18.1% White, 9.3% Hispanic, 0.4% Asian, 0.7% Unknown).

**Procedure**

The institutional review board at the University of California, Irvine (UCI) approved all study procedures. This study involved a review of publicly available records and existing records stored at Juvenile Law Center in Philadelphia, PA. Members of Juvenile Law Center supplied official court, Department of Corrections, and parole records that included information about the subjects' demographics (e.g., date of birth, gender, race), and resentencing hearings.

Additionally, researchers from UCI obtained information about the subjects' offending history from publicly available arrest records in the state of Pennsylvania (Unified Judicial System of Pennsylvania Web Portal: [www.ujportal.pacourts.us/DocketSheets/CP](http://www.ujportal.pacourts.us/DocketSheets/CP)). From these sources, information about the subjects' confinement, resentencing status, and recidivism was obtained.

**Measures**

Although our primary outcome of interest is postrelease recidivism (including offense details), we also provide sample descriptive information to contextualize these findings, including the initial LWOP offense characteristics (i.e., degree of homicide) and incarceration and release information (e.g., age at incarceration, age at release).

**Demographic information**

Demographic information included subjects' date of birth, gender, and race. These data were drawn from official Department of Corrections records and information from Juvenile Law Center.

**Offense type**

The murder degree (1st=criminal homicide committed by an intentional killing, 2nd=criminal homicide committed while defendant was engaged as a principal or an accomplice in the perpetration of a felony, 3rd/Other=all other kinds of murder) was determined in collaboration with Juvenile Law Center, using information from official court records.

**Incarceration history**

Using the commitment start date and release date reported in official records, we calculated the time each subject spent in confinement. We also calculated the age at confinement using the subjects' date of birth and the commitment date, as well as the subjects' age at release.

**Postrelease recidivism**

Using information gathered from public arrest records in the state of Pennsylvania, we determined if the subjects were charged with a new offense, the type of offense for which the subject was charged, and the status of the case as of October 2023. We also calculated the time until new offense (in years) using the release date and the offense date reported in official records, and the subjects' age at new offense using their date of birth and offense date.

## RESULTS

### Sample characteristics

Sample descriptive statistics are presented in Table 1. Among the 287 individuals resentenced and released, the majority were male (97.2%). Approximately three-quarters of the subjects were Black (76.3%), followed by White (15.3%) and Hispanic (8.0%). Race was unknown for one subject (0.3%). For their JLWOP offense, 54.4% had been charged with first-degree murder, 44.2% with

**TABLE 1** Demographic, offense, and incarceration descriptive statistics ( $N=287$ ).

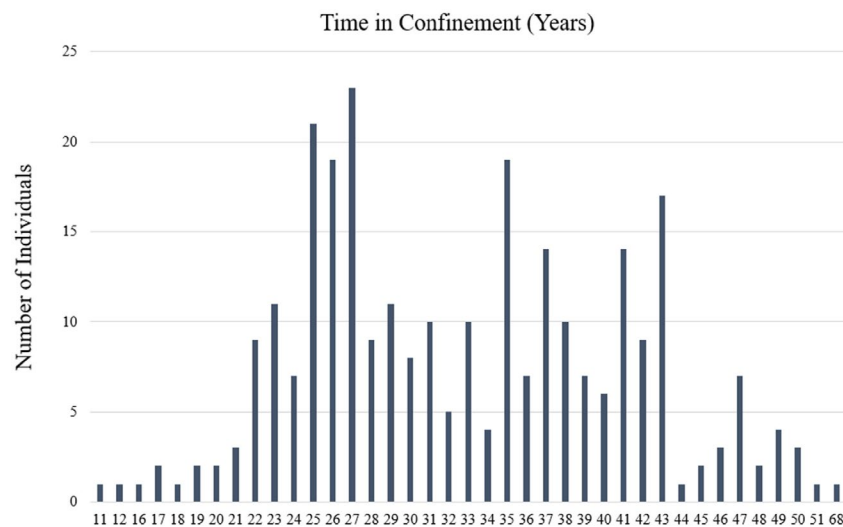
	%	N	Min	Max
<b>Gender</b>				
Male	97.21	279	—	—
Female	2.79	8	—	—
<b>Race</b>				
Black	76.3	219	—	—
White	15.3	44	—	—
Hispanic	8.0	23	—	—
Unknown	0.3	1	—	—
<b>Murder degree</b>				
1st/1st+	54.4	156	—	—
2nd/2nd+	44.2	127	—	—
3rd	1.4	4	—	—
	<b>M</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
Age at Offense	16.27	0.89	13.00	18.00
Age at Release	49.79	8.32	29.00	83.00
Years in Confinement	32.81	8.39	10.93	68.02
Time since Release (Oct 2023)	4.83	1.66	0.09	11.54

second-degree murder, and 1.4% with third-degree murder. At the time of the JLWOP offense, subjects were between the ages of 13 and 18 ( $M=16.27$ ,  $SD=0.89$ ). At the time of their release, the subjects were between the ages of 29 and 83 years old ( $M=49.8$ ,  $SD=8.3$ ) and had spent an average of 32.8 years ( $SD=8.4$ , range = 10.9–68.0) in confinement (see Figure 2). On average, subjects had been in the community for nearly 5 years ( $M=4.83$ ,  $SD=1.66$ ) as of October 2023 (see Figure 3).

### Recidivism

As of October 2023, the 287 resentenced and released individuals have been out of custody for an average of 4.8 years ( $SD=1.66$ , range = 0.09 years [1 month] – 11.5 years<sup>1</sup>). Of these, 26 individuals (9.1%) have been charged with new offenses postrelease. Almost half of these individuals ( $n=11$ ) were charged with summary offenses or infractions (42%), such as speeding tickets and other traffic violations. Only 58% of individuals who were charged with a postrelease offense ( $n=15$ ) were charged with a misdemeanor or felony. That is, 5.2% of released individuals were charged with a misdemeanor or felony postrelease.

Table 2 provides an overview of these 15 individuals, including demographic characteristics, incarceration and release information, charges, and the status of the cases for which they were rearrested. Age at release ranged from 29 to 58 ( $M=43.3$ ,  $SD=7.3$ ), and they had spent between 10.9 to 43.2 years in confinement ( $M=26.6$ ,  $SD=7.5$ ). Six individuals were charged with person offenses (2.1% of the entire released sample), primarily aggravated assault, and one murder. Four individuals were charged with drug-related offenses (1.4%), including possession of controlled substances or driving under the influence. Three individuals had weapon possession charges (1.0%), and two individuals were charged with property crimes such as theft (0.7%). These offenses varied in timing, from 10 months



**FIGURE 2** Time in confinement.

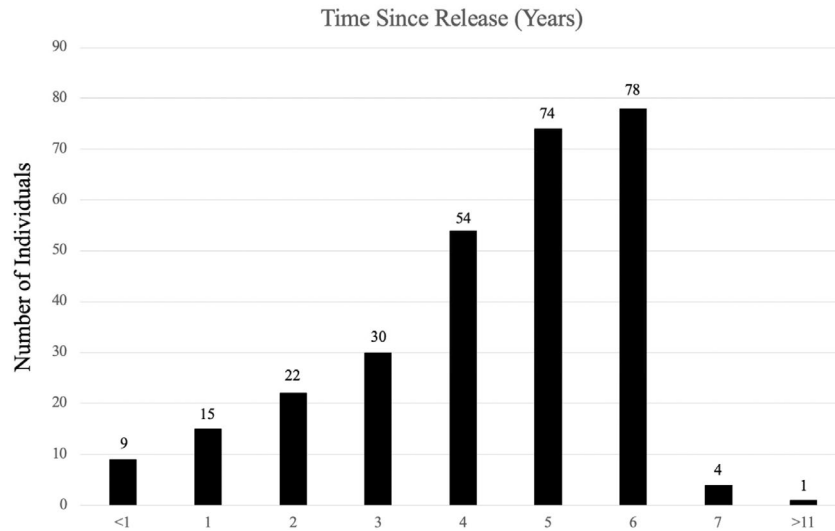


FIGURE 3 Time since release as of October 15, 2023.

TABLE 2 Resentenced, released, and rearrested (*n* = 15).

Subject	Years confined	Age @ release	Time to new charges (years)	Age @ new charge	Charges filed	Case status
1	22.01	36	2.17	38	Drug possession	Sentenced
2	30.30	48	3.43	52	DUI	Sentenced
3	27.02	44	1.76	46	Aggravated assault	Closed
4	25.62	42	3.82	46	Murder	Open
5	25.91	44	2.74	46	Firearm possession	Open
6	17.98	35	4.02	39	Aggravated assault	Open
7	43.22	58	2.07	60	Aggravated assault	Open
8	25.05	42	.84	43	Disarming a Police Officer	Sentenced
9	31.73	47	2.76	50	Theft	Open
10	27.11	44	2.03	46	Firearm possession	Closed
11	34.89	53	4.67	57	Firearm possession	Open
12	24.18	39	2.94	42	Aggravated assault	Open
13	10.93	29	3.97	33	Drug possession	Closed
14	22.02	39	1.64	41	DUI	Sentenced
15	31.34	49	3.10	53	Theft	Open
		<b>Years confined</b>	<b>Age @ release</b>	<b>Time to new charges (years)</b>	<b>Age @ new charge</b>	
Average		26.62	43.27	2.80	46.13	

postrelease to more than 4 years postrelease ( $M=2.8$  years,  $SD=1.1$ ; see Table 2). Of the 15 cases, eight of them are still open or pending (53.3%), and the remaining seven are closed/sentenced (46.7%).

## DISCUSSION

Before the age of 18, the age at which people reach legal adulthood, the 537 individuals in the present study were

convicted of homicide and were subsequently sentenced to mandatory life without parole. The resentencing and release of 287 of these inmates following landmark Supreme Court decisions understandably engendered concerns about public safety, yet the rate of new offenses is extremely low. With a recidivism rate of 5.2% among those previously sentenced to JLWOP, this group falls well below the rate of rearrest of state prisoners, which is as high as 44% in the first year of release alone (Alper et al., 2018). This is also considerably lower than the rates that are typically

reported among youth convicted of homicide (though not sentenced to JLWOP), with the majority of studies finding more than 50% recidivism (Heide, 2020). Conversely, among individuals in our sample who were charged with a new crime, the majority (9 out of 15, 60%) received charges within 3 years postrelease, with 87% (13 out of 15) picking up charges within 4 years, which is largely similar to other juveniles who have been convicted of homicide (Heide et al., 2001). Nonetheless, the findings in the present study are also consistent with Daftary-Kapur & Zottoli's (2020) report of low recidivism in their sample, as well as the predictions of developmental science.

In addition to the recidivism rate, a few additional findings warrant discussion. First, people of color, particularly those identified as Black, are overrepresented in the current sample. Specifically, over 70% of the current sample were identified as Black, even though only 12% of the state's population and 42% of Philadelphia's population is Black (U.S. Census Bureau, 2021). These statistics reflect larger racial and ethnic trends in disproportionate justice system involvement and sentencing across the country (Kempf-Leonard, 2007; Rodriguez, 2010). Second, of the 15 individuals who received new criminal charges during the current assessment period, the majority were for non-violent offenses, such as theft or drug possession. Six individuals were charged with person offenses (e.g., aggravated assault), which comprises a low proportion of the sample, but one of these individuals was charged with murder (the case is still open and scheduled for trial in 2024). The loss of any life is devastating, and likely represents the public's worst fears—if juveniles who committed murder are released, they may commit murder again. It is remarkably difficult to reconcile fair treatment for juvenile defendants with justice for victims, and there may be no ideal, consistent approach for dealing with juveniles charged with murder (Sbeglia et al., 2024). Yet, policymakers must consider the broader picture when making legal decisions. The overwhelming majority of released individuals (97.9%) have not committed a violent offense or committed any crime at all (94.8%). While one individual's actions can have severe consequences, those actions do not reflect the behavior of the sample at large and should not distort appropriate sentencing and policy decisions.

These findings are consistent with what developmental science predicts about risky behaviors and recidivism, namely that (1) the adolescent period is one of increased risk taking, undergirded by impulsivity, sensation seeking, myopia, and sensitivity to social influence, and (2) these hallmarks are transient and decline with age. Indeed, in the field of criminology, the so-called “age–crime curve”—which shows that criminal behavior tends to peak in late adolescence before declining—is well-documented (Farrington, 1986; Hirschi & Gottfredson, 1993; Piquero et al., 2003; Shulman et al., 2013; Sweeten et al., 2013). Among the 287 released individuals in the sample, the age at release ranged from 29–83, with an average age of 50, well beyond the age at which individuals have matured

according to psychological and neurobiological markers of development. Specifically, by the time of their release, these individuals have presumably developed sufficient self-regulatory capacities and psychosocial maturity that contributes to desistance.

The present paper contextualizes how characteristics of adolescence mitigate, but do not negate, culpability as it applies to a sample of individuals convicted of homicide as juveniles, and subsequently released after decades of incarceration. Further, we have noted that the low rate of recidivism of these individuals upon release is consistent with the expectations of developmental science. Accordingly, we have provided important evidence for researchers, policy makers, and practitioners regarding the consequences of implementing the decision of the Supreme Court in *Miller v. Alabama* (2012) and *Montgomery v. Louisiana* (2016). It is highly recommended that researchers build targeted collaborations with legal practitioners to not only improve policy recommendations, but to develop applied programs of research, as there are critical lines of inquiry remaining in light of limitations to the current work.

First, we cannot conclusively ascertain whether low levels of recidivism among those released are due to psychological and neurobiological development, although there is ample evidence to support this conjecture. It is possible that programming and experiences within the jail independently contributed to changes in behavior among those released. Daftary-Kapur and Zottoli (2020) note that around 90% of their sample participated in rehabilitative programming, despite the fact that these individuals were sentenced to serve their entire lives in a facility. Yet, there is no reason for these two mechanisms—development and programming—to be mutually exclusive. It is possible, for instance, that rehabilitative programming was more effective among those sentenced to JLWOP *because* of their development stage (i.e., there was an interaction between age and participation in programming). To address these questions, future work might explore experiences within the facility over time, such as whether the age at which individuals received programming is associated with behaviors inside or outside of the facility, or an analysis of institutional misconduct by age. With regard to the latter, there is some evidence that institutional misconduct tends to be higher among late adolescents (between 18–21) than older adults (Valentine et al., 2015). Such analyses would shed light on how developmental processes unfold within the facility context. It will also be worthwhile to examine outcomes beyond misconduct and recidivism, as a lack of a bad outcome (e.g., low or no recidivism) is not necessarily an indicator of a good outcome (e.g., positive socioemotional adjustment, social reintegration).

Second, even though our study is a comprehensive review of individuals released under *Miller* (2012) and *Montgomery* (2016) in Pennsylvania, the number of release cases reviewed represent roughly 12% of the individuals that became eligible for resentencing nationwide (Rovner, 2021). Despite the importance of universal

developmental processes, there are contextual factors unique to different states and cities, such as resentencing policies, cost of living, employment availability, prison experiences, and population size, among others, that might influence recidivism among those released (Travis & Visser, 2005). Thus, we cannot extrapolate these findings to other geographical regions that may operate under different policies within different environments. Further, we have limited insight into the process of resentencing and parole hearings, including how individuals who are released differ from those denied release. Future work exploring and comparing resentencing practices across state lines is necessary to unpack this process and determine best practices in resentencing.

Thirdly, the current study tracked recidivism among 287 individuals for up to 7 years postrelease. It will be critical to continue following these individuals to determine if these low levels of recidivism are robust over time. To the extent that the risk of recidivism is generally highest within the first few years upon release, especially among juveniles convicted of homicide (Heide et al., 2001), there is reason to believe that recidivism will remain low among this sample (e.g., Alper et al., 2018).

Finally, it is notable that the recidivism rate in this study is significantly lower than that of other studies examining juveniles who committed homicide, but there are also notable differences between the samples that make them difficult to compare. In Heide's (2020) review, youth in the studies had spent an average of 8–12 years incarcerated and were in their mid- to late-twenties when they were released. By contrast, youth who were sentenced to JLWOP in this study spent on average about 33 years incarcerated and were approximately 50 years old at release. Longer sentences have been associated with lower levels of recidivism (see review by Khachatryan & Heide, 2023), and crime rates naturally fall to markedly low levels in middle age and beyond (Tuttle, 2023). Future work should thus aim to follow a similar group, in terms of length of incarceration and age at release, to draw more valid comparisons of recidivism rates. Further, it is noteworthy that small groups of individuals within this sample were considered ineligible for release or were denied release. As we do not have access to information about the decision-making process behind these cases, future work should investigate what factors are considered during resentencing (or denial thereof), and whether these groups differ meaningfully from individuals who are released.

## CONCLUSION

According to Miller (2012) and Montgomery (2016), resentencing of individuals originally sentenced to mandatory life without parole for homicide committed as a juvenile is necessary in order to adhere to the precepts of the Eighth Amendment, which proscribes cruel and unusual punishment. Adolescents are more impulsive,

more reward sensitive, more sensitive to social influence, and less likely to account for the long-term consequences of their actions relative to older adults. These hallmarks of adolescence contribute to their propensity to take “ill-considered” actions, effectively diminishing their culpability at the time of the offense. Just as important, however, is that these characteristics are *transient*. There is no question that these individuals committed deplorable crimes for which they were, are, and must be held responsible. Further, we do not argue that life without parole is never appropriate (as this is a moral and ethical issue not testable by science), nor that all those sentenced to life should be released (as this question has not yet been tested). Rather, we note that there is a measurable—and measured—difference in culpability when such crimes are committed by a juvenile than when they are committed by an adult. Moreover, the amenability to rehabilitation is greater for these youth. Accordingly, even the commission of heinous crimes does not mean that the individual is irretrievably depraved or beyond redemption. The low rate of recidivism among those previously sentenced to juvenile LWOP supports this notion. Continued interdisciplinary collaborations between researchers and policy makers can help build evidence-based legal practices that balance a just legal system with the safety of the public.

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## CONFLICT OF INTEREST STATEMENT

The authors have no competing interests to declare that are relevant to the content of this article.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## DISCLOSURE

The manuscript has been approved by all authors and has not been published or reviewed for publication elsewhere. A Privacy Certificate issued by the Department of Justice protects participants' identities and responses from subpoenas, court orders, or any other type of involuntary disclosure. We are grateful to the many individuals responsible for the data collection and preparation.

## CONSENT

Youth assent was obtained from all participants, and informed consent was obtained from participants' parents or legal guardians.

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