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Comparing Character Assumptions in Case Law Among Sentenced Juvenile Homicide Offenders: An Arizona Case Study

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Abstract: Debates in case law over the relevance of character change among juvenile homicide offenders (JHOs) is a key concern affecting policy decisions about the incapacitation and future release of JHOs. Yet, research exploring the character maturation of JHOs is an understudied area in criminal justice-related sentencing and correctional polices. Using a case study approach, the present study explores associations between sentence status (i.e., indeterminate life vs. natural life) and indicators of continued criminality to compare serious prison infraction trajectories on a representative sample of Arizona's JHOs. The results of this study raise several concerns about determining potential character trajectories during the initial sentencing phase of the criminal justice process, implications for policy and future research are discussed.

Keywords: Irreparable Corruption, Life Sentences, Character Maturation, JLWOP sentences, Juvenile Homicide Offenders

Introduction

The U.S. Supreme Court introduced its children are different jurisprudence to prohibit a sentence of death for juvenile homicide offenders in *Roper v. Simmons* (2005). This decision reflected the Court's acceptance of scientific evidence demonstrating important differences between the moral blameworthiness of juvenile and adult offenders (Scott & Steinberg 2003; Steinberg & Cauffman, 1996). In *Roper v. Simmons* (2005), the Supreme Court addressed concerns about the brutality of a crime overwhelming juror consideration of mitigation arguments germane to the diminished culpability of juvenile homicide offenders (Feld, 2017). This decision also included assumptions that

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were grounds for a line of subsequent decisions that ruled against punishing juveniles as harshly as adult offenders (see *Graham v. Florida*, 2010; *Miller v. Alabama*, 2012; *Montgomery v. Louisiana,* 2016).

The *Roper v. Simmons* (2005) decision relied on key developmental differences between juveniles and adults (Grisso & Kavanaugh, 2016). One of these differences involved assumptions about the potential of a child's character to change. The Court wrote, "a child's character is not as 'well formed' as an adult's, his traits are 'less fixed' and his actions are less likely to be 'evidence of irretrievabl[e] deprav [ity]" (Roper v. Simmons, 2005, p. 570). These assumptions represented a key predicate underlying the *Miller v. Alabama* (2012) decision, which mandates the requirement for individualized determinations of whether homicide offenses by juveniles reflects transient immaturity or irreparable corruption. The irreparable corruption standard in *Miller v. Alabama* (2012) has underlying assumptions that align with representative theories of character (Sendor, 1996; Tadros, 2007), lay dispositionism (Ross & Nesbitt, 1991) implicit theories of character and personality (Chiu, Hong & Dweck, 1997; Dweck, Hong, and Chiu, 1995); and developmental and life course theories of criminal propensities for persistent criminality (Laub & Sampson, 2003; Moffit, 1993; Sampson & Laub, 2017).

The U.S Supreme Court introduced its dispositional assumption about the character of juveniles in *Miller v. Alabama* (2012), which reserved natural life sentences or juvenile life sentences without the opportunity for parole (JLWOP) for juvenile homicide offenders (JHOs) whose crimes reflected their irreparably depraved characters. The Court in *Montgomery v. Louisiana* (2016) held that this *Miller* (2012) standard retroactively applied to juveniles previously given natural life sentences, and the *Jones v. Mississippi* (2021) decision affirmed the principle in *Montgomery* (2016) that judges did not have to make a specific finding of irreparable corruption in these sentencing procedures. After the *Jones* (2021) decision, prosecutors in Maricopa County, Arizona started challenging petitions for resentencing by juveniles sentenced prior to *Miller* (2012) because the defense would not produce any new evidence from juvenile psychology and neurology not previously heard by the trial judge at sentencing (see, *State of Arizona v. Conley*, 2021). The Arizona Supreme Court ruled similarly prior to the *Montgomery* (2016) decision in *State of Arizona v. Amaral* (2016).

Arizona has long history of harsh punishment (Lynch, 2009). Atiq and Miller (2018) also contend that it is a state with a history of adhering to restrictive interpretations of mitigation evidence (Ashford, Puzauskas & Dormady, 2022). in capital cases (see, *McKinney v. Ryan*, 2015). The Fair Punishment Project's (2016) study of mitigation evidence, in cases on appeal from Maricopa County, Arizona to the Arizona Supreme Court, comes to a similar conclusion about Arizona punishment practices. Nonetheless, restrictive interpretations of mitigation evidence can also extend to interpretations of the *Miller v. Alabama* (2012) sentencing factors (Ashford, Puzauskas, & Dormady, 2022; *State*

of Arizona v. Valencia, 2016). Consequently, we assume that Arizona represents an ideal institutional field for examining the effects of a harsh sentencing culture on the top-down-character pronouncements in the *Miller v. Alabama* (2012) decision (Ulmer, 2019).

Current Study

The inhabited institutions perspective in sociology assumes that it is important to understand what produces uniformity and variations in sentencing practices by not treating departures from top-down court rules as a "nuisance", but instead, as a source for policy feedback and learning (Ulmer, 2019, p. 483). With this aim in mind, this study examines whether differentially sentenced groups of Arizona pre-*Miller v. Alabama* (2012) juvenile lifers reflect survival trajectories of serious criminality consistent with character assumptions in the social sciences and in the *Miller v. Alabama* (2012) decision. If the Arizona judges limit the imposition of JWLOP sentences to juveniles with irreparably corrupt characters as envisioned in the *Miller* (2012) decision, then one would expect differences in the survival distributions of differentially sentencing JHOs and associations between types of life sentences and the timing to the JHOs last criminal conviction. Moreover, juveniles serving JLWOP sentences should have higher rates of a last criminal conviction while in prison than JHOs serving JLWP sentences at points in time when juvenile lifers are most likely to reach maturity.

Associate Justice White contends in *Furman v. Georgia* (1972) that sentencing schemes for capital offenses (homicides) ought to meaningfully distinguish cases for which the death penalty is imposed from cases that it is not (Steele, 2021). Consequently, the purpose of this exploratory study is to examine whether the sentenced cases of death by prison in Arizona meaningfully differ on a timing indicator of continued criminality from the cases that are not, at times when maturity is hypothesized to have an increased effect on continued criminal corruption.

Literature Review

The juvenile justice system adopted what Scott and Steinberg (2003) referred to as an excuse-based approach to sentencing juvenile offenders during the period when the rehabilitation ideal dominated criminal justice policies. The full responsibility approach replaced the excuse-based approach for the sentencing of serious and violent juvenile offenders during the "get tough on crime" period of our society's juvenile justice policies (Scott & Steinberg, 2003). When juveniles engaged in adult-like offenses during this period, they received the same sentences as adults for the same crimes. Scott and Steinberg (2003) rejected how the excuse-based and full-responsibility approaches in juvenile jurisprudence evaluated the blameworthiness of juvenile offenders and proposed in their stead the adoption of a mitigation approach.

The Scott and Steinberg (2003) approach was adopted by the U.S Supreme Court in a subsequent line of decisions that affected the sentencing of serious and violent juvenile offenders (*Roper v. Simmons*, 2005*; Graham v. Florida,* 2010*; Miller v. Alabama*, 2012*; and Montgomery v. Louisiana*, 2016). Each of these decisions affirmed important constitutional differences in the culpability of juveniles from adult offenders. However, some of the assumptions that served as a basis for these landmark decisions have not been without controversy among the Justices, especially, assumptions about the role of character in the sentencing of juvenile homicide offenders. Insofar as the U.S. Supreme Court in *Miller v. Alabama* (2012) banned mandatory juvenile life sentences without the possibility of parole (JLWOP) for JHOs, the Court did not categorically ban juvenile life without the opportunity for parole (JLWOP) sentences (Feld, 2017; Grisso & Kavanaugh, 2016). However, states lacking mandatory JLWOP sentences did not assume that the *Miller* (2012) standards retroactively applied to juvenile homicide offenders sentenced prior to the *Miller* (2012) decision.

The Arizona Supreme Court, for instance, rejected the post-conviction claims of its juveniles serving JLWOP sentences after *Miller* (2012) because the state had individualized sentencing procedures that required judges to consider the juvenile's age in selecting an appropriate punishment. Arizona, unlike Alabama, did not have mandatory JLWOP sentences. Trial court judges in Arizona were able to select a natural life (JLWOP) sentence based on the brutality of the crime without considering the standards prescribed in *Miller v. Alabama*. (2012). The Court addressed in *Montgomery v. Louisiana* (2016) whether the *Miller (2012)* decision required retroactive application in Arizona and other states with discretionary sentencing frameworks.

After *Montgomery v. Louisiana* (2016), Associate Justices Bolick and Pelander of the Arizona Supreme Court questioned the predicates in *Miller* (2012) and in *Montgomery* (2016) for assuming that JLWOP sentences should be uncommon because most of the murders committed by juvenile offenders will reflect their transient immaturity. These Justices wrote: "[by] announcing in advance that most murders committed by juveniles 'reflect' the transient immaturity of youth', the Court trivializes the killers' actions and culpability "(*State v. Valencia*, 2016 p. 398). The dissenting justices in *Montgomery* (2016) also disagreed with the reasoning in the majority Court's opinions in *Miller* (2012) and *Montgomery* (2016) on a number of other grounds. Justice Alito, for instance, rejected the assumption in *Miller* (2012) and *Montgomery* (2016) that the crimes of most JHOs reflects their transient immaturity based on a dispositional argument. He argued in his dissenting opinion in *Montgomery* (2016) that the legislature's prescription to send killers to life in prison reflects the electorate's view that these offenders will kill again. Consequently, he argues that legislatures in states with mandatory sentences rightly are "taking the position that the risk that these offenders will kill again outweigh any

countervailing considerations, including reduced culpability due to immaturity or the possibility of rehabilitation" (*Montgomery v. Louisiana*, 2016 p. 2490).

Competing Theories of Character. The mitigation approach of Scott and Steinberg (2003) relied heavily on assumptions about development, character, and culpability central to the Court's assumptions about an offender's potential for change. Their approach departed from classical principles of punishment and reaffirmed the value of individualized sentencing consistent with neo-classical principles of punishment (Ashford, 2013; Vold, Bernard, & Snipes, 2002). The neo-classical approach to punishment introduced the value of considering mitigating factors when evaluating both the harm (offense) and the offender's "character" in selecting an appropriate punishment (van Stokkom, 2013). Furthermore, Scott and Steinberg (2003, p. 15) contend that "[t]he criminal choice of the typical adolescent cannot be evaluated by comparing it to his previously established good character, because his personal identity and his character have not yet stabilized" (Scott and Steinberg, 2003, p. 15). Their contention assumed that the moral character of an adolescent develops and changes as the adolescent matures. While the members of the majority Court also concluded that juveniles were more likely to grow out of their earlier traits, the dissenting Justices in the *Miller* (2012) decision assumed that these traits were fixed and unchangeable.

The literature in social psychology vigorously disputes conceptions of character that have overlooked the power of circumstances (DeSteno and Valdesolo 2011; Doris 2005). Doris wrote, for instance, "[t]o put things crudely, people typically lack character" (Doris 2005: p. 2). Her viewpoint reflected the longstanding findings of the situation tradition in experimental social psychology (Doris 2005). This tradition has shown that human behavior was highly sensitive to variations in circumstances. Consequently, this tradition has questioned notions about the stability of character and personality subscribed to by entity theories of moral character in philosophy and in psychology (Chiu, Hong, & Dweck, 2009). Moreover, theorists from this tradition have assumed that situational considerations were better predictors of behavior than either personality or character (DeSteno & Valdesolo, 2011)

Roberts and Caspi (2001a) were surprised to find a range of opinions in the personality development literature that repositioned the person-situation debate in social psychology within personality development. They (2001) argued that situationists in the developmental personality literature were ignoring established evidence of continuity in temperament and in personality traits from childhood to adulthood (Blonigen, Hicks, Krueger, Patrick; & Iacono, 2006; Caspi, 2000; Caspi, Roberts, & Shiner, 2005). Conversely, Lewis (2001) adopted a different position about the evidence supporting the continuity of personality traits from the position of Roberts and Caspi (2001) in the same special issue of *Psychological Inquiry* on continuity and change in

personality. Lewis (2001, p. 67) opined "the data suggest that individual characteristics, especially in children, are not consistent over context and time, and that earlier events do not predict later ones". Moreover, Lewis (2001) questioned the results of longitudinal studies reviewed by Roberts and Caspi (2001) that showed continuity in traits and temperament. In particular, he had concerns about the reliability of measures of trait continuity and about the low variability explained by the correlations putatively measuring continuity of personality traits and temperament over time in the studies identified by Caspi and Roberts (2001).

While Lewis (2001) disputes how personality is measured and the mechanisms influencing changes in personality, he does not question the treatment of personality as a developmental construct. In fact, none of the contributors to the special issue on continuity and change disputed treating personality as developmental constructs. However, there were significant differences in opinions in this special issue about the mechanisms contributing to continuity and change in personality. Indeed, most scholars studying personality development have agreed about personalities changing, but had debates about the extent of continuity and change and what aspects of personalities change in adulthood (Roberts, Wood, & Caspi, 2008).

However, an area in psychology where scholars have been skeptical about change in personality during adulthood is in the treatment literature on psychopathic personalities (Ashford, Sales, & Reid, 2001; Hemphill & Hart, 2002; Olver, 2016; Reid & Gacono, 2000). This literature has contended that psychopathic offenders were "untreatable, unmotivated and unlikely to change" (Hemphill & Hart, 2002, p.). This conventional wisdom about non-change in psychopathic personalities has overlooked change noted in some dimensions of psychopathic traits in studies of continuity and change in psychopathy over the life course (Harpur & Hare, 1994). Blonginen and collegues (2006) found, for instance, that impulsive antisocial (social deviance) traits declined over time, but not the interaction-affective dimension of psychopathy in the two-factor model of psychopathy (Harpur & Hare, 1994). They concluded from the results of their study that psychopathic traits follow different developmental pathways. To some extent, this conclusion mirrored the arguments of the majority Court in *Miller v Alabama* (2012) that a small number of offenders can have crimes that reflect an unlikelihood of changing due to irreparable corruption.

On the other hand, the dissenting Justices in *Miller v. Alabama* (2012) adopted a position that assumed that a homicide offender's behavior reflected their personality or disposition consistent with what Ross and Nesbit (1991) referred to as lay dispositionism. In effect, the dissenting justices assumed what Caspi and Roberts (2001) characterize as an "absolute continuity" in the behavior of homicide offenders (Caspi and Roberts, 2001). Psychologists examined this type of continuity in personality using growth curve

modeling, but found minimal evidence of mean-level changes in personality traits during adulthood (Caspi & Roberts, 2001).

Laub and Sampson (2003) depart from some of the assumptions in the developmental literature that treat the propensity towards continued criminality as either a stable or a changeable underlying attribute of a person's character without specifying what causes change in the within-individual attributes (Laub & Sampson, 2003). Nonetheless, there are developmental accounts that attribute changes in criminal propensities to maturation and aging processes (Glueck & Glueck, 1974; Scott & Steinberg 2003; Steinberg & Cauffman, 1996). Moreover, Moffit (1993) provides a developmental account of differences in criminal persistence, which some researchers contend is one of the most influential models for categorizing types of offenders (Piquero & Chung, 2001). Her research identifies two distinct categories of individual difference ---- life course persistent and adolescent limited offenders (Laub & Sampson, 2003). These types or groups of offenders have different natural histories of criminal behavior with links to different causal processes. However, Laub and Sampson (2003) question whether these types reflect what is causing changes in persistence or desistance from crime because of their over focus on early individual differences without giving sufficient consideration of other exogenous factors contributing to changes in dispositional propensities towards persistent criminality. Their position overlaps with situationists' theories of character in social psychology that recognize the contributions of situational factors exogenous to the dispositional propensities of a person's character.

Johnson and Leigey (2020) advance a life course approach for understanding the maturation and development of juvenile lifers when assessing a juvenile homicide offender's suitability for release pursuant to *Miller* (2012) standards. Furthermore, Johnson (2017) contends that while the Court in *Graham v. Florida* (2010) classifies murder as a marker of depravity the research on homicide offenders (Leigey, 2015; Marquart & Sorensen, 1988; Miethe & Regoeczi, 2004; Sorensen, Winkle & Guitierrez, 1998) shows that homicides are heavily dependent on situational factors. These situational and contextual considerations in Johnson's (2017) opinion explain why the moral trajectories of homicide offenders change and why homicide does not represent a marker of stable depravity for juveniles as the Court assumes in the *Graham v. Florida,* (2010*).* Thus far, the life course approach for understanding the maturation of JHOs is an understudied area in the legal, youth justice, and the criminal justice literature.

Method

Design

This study employs a retrospective observational design to model the timing to the last serious criminal infraction committed by juveniles serving JLWP (25 to life sentence)

and JLWOP (natural life sentences). Retrospective observational studies enable researchers in a natural experiment to compare outcomes of interests among sentenced juveniles naturally assigned to different lifer groups (Craig, Katikireddi, Leyland, & Popham, 2017). Archival information from court files obtained by the Arizona Justice Project, a post-conviction clinic that advocates for the rights of offenders, was used to identify the population of juveniles serving life (25 to life) and natural life sentences in Arizona (N=104). Demographic and prison infraction information (i.e., race/ethnicity, infraction histories, and admission dates) was obtained from the web-based searchable-inmate-database maintained by the Arizona Department of Correction, Rehabilitation and Reentry (ADCRR).

Sample

The study examined a sample (n=101) from the Arizona population (N=104) of male-juvenile lifers sentenced prior to the *Montgomery v. Louisiana* (2016) decision. The sampling frame was limited to juvenile lifers sentenced prior to the *Montgomery v. Louisiana* decision because after the *Miller v. Alabama* (2012) decision, Arizona did not change its sentencing practices until the *Montgomery v. Louisiana* (2016) decision. The racial/ethnic breakdown of the study's sample displayed in Table I was Hispanic (46%); White (24%), African American (22%), Native American (5%); and Asian (4%). Fifty-nine percent of the study's participants were serving sentences of 25 to life (N=60); and

Table 1: Characteristics of the Population

	Total Population (n=101)	*JLWP (n=60)*	*JLWOP (n=41)*
Average Days in Prison	5834.41 (SD =2010.40)	5366.72 (SD=1953.17)	6518.83 (SD=1915.48)
Average Age at Time of Offense	16.27 (SD=.79)	16.37 (SD =.78)	16.12 (SD=.78)
	Frequency (%)	Frequency (%)	Frequency (%)
Racial Background			
Hispanic	46 (45.4%)	26(43.3%)	20 (48.8%)
Caucasian	24 (23.8%)	9 (15%)	15(36.6%)
African American	22 (21.8%)	16 (26.7%)	6 (14.6%)
Native American	5 (5%)	5 (8.3%)	0
Asian	4 (4%)	4 (6.7%)	0

40 percent were given JLWOP sentence (N=41). The average age of the participants at the time of their offense was 16.27, with a minimum age of 14 and a maximum of 17. The average number of days in prison was 5,834 (15.98 years) with a minimum number of 1,358 (3.72 years in prison) and a maximum number of days of 10,913 (29.89 years in prison) and the median number of days of 6068 (16.62 years in prison).

Measures

Outcomes. The irreparable corruption variable is operationalized as survival from the terminal event measuring the timing of an offender's last serious criminal offense at points when maturity is likely to be present. The study assumes that a person with a fixed character of depravity is unlikely to change at points in time during imprisonment when desistance from serious criminality is most likely to occur. This measure recognizes some of the limitations identified by Laub and Sampson (2003) when examining continued character dispositions towards continued criminality (see, Laub and Sampson, 2003; Sampson & Laub, 2017). Frequencies, for instance, can reflect high rates of infractions in the early phases of a youth's imprisonment (Laub & Sampson, 2003), which is unlikely to capture critical evidence of desistance from criminality at points in time when a youth's character is most likely to change. After maturation occurs, we would expect lower rates of survival and desistance from committing a serious criminal infraction in prison by inmates serving JLWOP sentences. We employ prison infractions to measure evidence of survival and withdrawal from crime at these points because this measure addresses an unfounded assumption in the literature identified by Delisi (2003) that offenders have a lag in offending while in prison. Moreover, the study assumes that the commission of a crime while in prison is the only way to examine an unchanged criminal character for juveniles serving JLWOP sentences.

We use the definitions from the Arizona Department of Corrections Manual on Inmate Disciplinary Procedures (Arizona Department of Corrections, 2012) in the coding of the terminal events. The manual groups inmate infractions as A, B, and C violation classes. These classes "mirror the state's criminal code to the greatest extent possible." (Arizona Department of Corrections, 2012, p.1). Classes A and B violations are consistent with felonies as defined by Arizona Statutes. Class C violations refer to misdemeanors rather than felonies. The study only includes violations with a finding of guilt for Class A and B violations classified as major infractions because minor infractions include conduct associated with misdemeanor offenses and conduct associated with the effective operation of the system. The study does not report independent results for the last violent infractions because of its low frequencies of occurrence and it is one of the types of infractions included in the study's serious/major infraction measure.

Withdrawals. The study also examines the number of offenders who do not (yet) experience a last serious infraction during the study's follow-up periods (withdrawals before the event occurs during the follow-up time intervals). This number captures aspects of desistance from propensities at different points in time, but it is important to note that it also captures individuals who leave the follow-up for other reasons such as death or because of missing data.

Timing variables. We measure the timing to the terminal events (serious infractions) in five- year intervals (5, 10, 15, 20, and 25 years). We measure 5-year intervals for the timing variables because parole and other releasing authorities tend to give significant weight to the last 5 years of an inmate's infraction history (Glasser, 1985; Maguire, Pinter &Collis 1984). Five-year intervals also allow for easier interpretations of specific points in time when states and countries deem juvenile lifers eligible for consideration for release, which ranges from 15 to 25 years (Rovner, 2022). They also enable the study to control for the effect of maturity on when occurrences of major/ serious infractions are most likely to occur.

We assumed in this study that juveniles who completed 15 years of imprisonment overlaps with relevant age-levels in the psychological literature about personality maturation occurring around age 30 (Caspi & Roberts, 2001; Costa & McCrae, 1988; Costa & McCrae, 1994). We also assumed that 20 years in prison (age 35) is another appropriate marker of maturity because research shows that offenders with antisocial personality disorders often change between 35 and 40 (American Psychiatric Association, 2013; Black, 2015; Robins, 1966). Thus, we combine the variable years in prison with the average age of the study's participants (16) to serve as a reasonable proxy for the points at which maturity is most likely to occur (15 and 20 years in prison).

Comparison groups. The study's comparison groups are the differentially sentenced groups of juveniles serving life sentences. The study codes the two types of lifer sentences in Arizona as JLWP=1 (25 to life) and JLWOP=2 (Natural life).

Analytical Strategies

To compare timing to last criminal infractions among juvenile lifers, our study employs survival analysis. Survival analysis is a set of statistical analyses (i.e., Life tables, Kaplan Myer, Cox Regression) that analyze time elapses between events (Etikan, Bukirova, & Yuvali, 2018). Although survival analysis has been more extensively used in medical research (e.g., survival time for cancer patients undergoing specific treatments), survival analysis is also a statistical method widely used in research where the focus is on survival from future criminal behavior following prison and other correctional interventions (Kleck, Tark, & Bellows, 2006). Survival analysis allows for an examination of time to

failure after assignment to a specific intervention (sentencing decisions), as well as an examination of the cases that do not fail (survive). It also does not treat censored data as missing when estimating survival probabilities. Censored data occurs when the analysis lacks data on the timing of specific events (e.g., cases loss to follow-up at specific points in time or cases that did not fail prior to the end of the study). It is also useful for comparing survival curves.

Thus, the first stage of the analysis plan involves constructing a life table for the study's event of interests (timing to the last serious infraction). Data is classified in life-table analysis as either events or censored. Events are the actual occurrences of a determined survival outcome, while censored reflects the number of observations that do not occur for a survival outcome. We use the Wilcoxon Gehan test to examine differences in the survival distributions of the juvenile lifers with sentences of death by prison and without a sentence of death by prison. The Wilcoxon Gehan test is a non-parametric test for comparing survival curves.

A life table also contains relevant descriptive information (number of withdrawals, proportions of terminating events, survival and cumulative survival proportions). The second phase of the data analysis employs Chi square tests of statistical independence to test associations between the sentences imposed and the study's outcomes and Fisher's Exact tests when the expected cell count is at or under 5 (Altman, Machin, Bryant, Gardner, 2000). We also use MedCalc Software Ltd. Version 20.113 (2022) to compare differences in survival and cumulative survival proportions, which employs N-1 Chi Square tests of significance for small sample sizes recommended by Campbell (2007) and Richardson (2011).

Results

Table 2 described the number of terminal events for serious prison infractions, number of withdrawals, survival proportions, and the cumulative survival proportions for the last serious prison infraction. The descriptive data in Table 2 indicated that 60 of the JHOs exposed to a 25 to life (JLWP) sentence had 33 terminal events (serious infractions); whereas, the 41 JHOs exposed to a natural life (JLWOP) sentence had 24 serious infraction as terminal events. Table 2 also described the number of withdrawals from the serious infractions for the differentially sentenced groups of JHOs. The JHOs with 25 to life (JLWP) sentences had 32 withdrawals and the JHOs with natural life (JLWOP) sentences had 17 withdrawals. For this life table analysis, there was no statistically significant differences in median survival times (Wilcoxon [Gehan]= 2,296, $p > .05$) between the JLWOP (7,808 days) and the JLWP inmates (7,048 days). This finding suggests that the survival curve does not reflect differences over time in the moral or character trajectory of the differentially sentenced JHOs.

Table 2: Juvenile Lifer Survival Times for Serious Infractions

		Interval Start	*Number Entering*	*Number Withdrawing*	*Number Exposed to Risk*	*Terminal Events*	*Proportion Terminating*	*Proportion Surviving*	*Cumulative Proportion Surviving*	*SE*
Lifers	25 to Life	-	65	3	63.5	0	0	1.00	1.00	0
		5 Years	62	4	60.00	5	.08	.92	.92	.04
		10 Years	53	7	49.50	13	.26	.74	.68	.06
		15 Years	33	13	26.50	8	.30	.70	.47	.07
		20 Years	12	5	9.50	7	.74	.26	.12	.07
	Natural Life	-	41	0	41.00	0	0	1.00	1.00	0
		5 Years	41	1	40.50	2	.05	.95	.95	.03
		10 Years	38	6	35.00	4	.11	.89	.84	.06
		15 Years	28	6	25.00	6	.24	.76	.64	.08
		20 Years	16	4	14.00	11	.79	.21	.14	.07
		25 Years	1	0	1.00	1	1.00	.00	.00	.00

Table 3 presents the results of the tests for the hypothesized associations between the imposed life sentences and the study's outcome measures (serious infractions and withdraws) at different points in time. The results show no statistically significant associations at the .05 level of significance for the hypothesized relationship between infractions and types of sentences across time intervals. Consequently, we were unable to reject the null-hypothesis of differences between the sentences imposed at specific points in time. Additionally, the data shows that we could not reject the null-hypothesis for tests of association between the sentences imposed and the number of withdrawals at different periods of imprisonment for JHOs. Namely, the JHOs serving JLWP sentences do not have higher rates of desistance from serious infractions from the juveniles serving JLWOP sentence at points in time when maturation is most likely to occur. Moreover, there are no differences on these measures at points when maturity is most likely to occur.

Table 3: Tests of Statistical Independence for Sentence Type, Serious Infractions and Withdrawals

	10 Years			*15 Years*			*20 Years*		
Outcomes	*Yes*	*No*	*p*	*Yes*	*No*	*p*	*Yes*	*No*	*p*
Serious Infractions									
25 to life	13	37	.100	8	19	.647	7	3	.999
Natural life	4	31		6	19		11	3	
Serious Withdrawals									
25 to life	7	46	.729	13	20	.777	5	7	.431
Natural life	6	32		6	9		4	12	

Table 4 describes the results of the statistical comparisons for the survival and cumulative survival proportions for the study's irreparable corruption timing outcomes at specific points in time. The results in this table show no differences for either the survival or the cumulative survival proportions for the differentially sentenced groups during relevant periods of imprisonment when change in character is most likely. Consequently, we could not reject the null hypotheses for differences in the survival proportions of JHOs exposed to different types of life sentences at different periods of imprisonment.

Table 4: Comparing Differences of Survival Proportions

	10 Years				*15 Years*				*20 Years*			
Outcomes	*%*	*N*	*Difference*	*p*	*%*	*N*	*Difference*	*p*	*%*	*N*	*Difference*	*p*
Serious Survival												
25 to life	74	50	15%	.09	70	27	6%	.63	26	10	5%	.78
Natural life	89	35			76	25			21	14		
Cumulative Serious Survival												
25 to life	68	50	16%	.10	47	27	17%	.22	12	10	2%	.89
Natural life	84	35			64	25			14	14		

Discussion

We were not able to reject the null-hypothesis asserting differences in the median survival trajectories of the differentially sentenced Arizona JHOs. Additionally, the results showed that the sentences of JHOs in pre-*Miller* (2012) cases lacked associations with the inmates' last serious prison infractions, rates of withdrawal, and differences in the survival proportions at 15 and 20 years of imprisonment. These results introduced a number of questions about the use of the irreparable corruption sentencing factor as a potential legal limit on the imposition of JLWOP sentences in a state with harsh punishment practices.

Clearly, the percentage (41%) of Arizona JHOs given natural life or JLWOP sentences in pre-*Miller* (2012) cases departs from the principle in *Miller v. Alabama* (2012) of limiting the sentences to the rare few juveniles whose corruption is most likely permanent. The Court in *Miller v. Alabama* (2012) concludes that juveniles differ from adults in their moral culpability because of their youth and because their characters are more likely to change than the characters of adult homicide offenders. However, the sentences in pre-*Miller* (2012) cases in Arizona do not reflect any differences in the moral trajectory of the differentially sentenced JHOs. This finding suggests a lack of correspondence between the sentences imposed and the competing character assumptions in the *Miller* (2012) decision. It also suggests that the sentences are reflecting either the brutality or heinousness of the offense or other considerations besides a youth's irreparable corruption. However, future research will need to confirm this possibility because this study was not examining the factors influencing the sentencing decisions of Arizona judges in pre-*Miller* (2012) cases.

Even though survival proportions and the distributions of survival probabilities do not differ at the .05 level of significance, there is a noteworthy trend in the study's measures of survival. The juveniles with natural life sentences (JLWOP) had a slightly higher median rate of survival than the 25 to life (JLWP) inmates. This trend in the prior measure and the lack of associations between sentence types and timing measures suggest that the sentences did not reflect valid judgments about the moral trajectories of the differentially sentenced JHOs. The lack of differences on these measures also occurs at points when releasing authorities would examine an inmate's suitability for release. An important predicate during these release-decision processes is whether the JHO committed a major/serious criminal infraction during the last 5 years of their imprisonment. An offense within this period is an indicator of whether the offender's criminal propensities have changed or not.

Implications for Policy

The prior finding makes a preliminary case for either deferring these decisions about irreparable corruption to releasing rather than sentencing authorities, or selecting life

sentencing lengths based on other principles that recognize culpability differences between juvenile and adult homicide offenders. The former option is potentially consistent with the Model Penal Codes Sentencing section 11.02 Modification of Long-Term Prison Sentences, Principles for Legislation (American Law Institute, 2017). The modifications of life sentences under this provision would require a judicial panel or other judicial decision maker to inquiry into a modification of the sentence after the lifer achieves eligibility in a back-end decision process that is tantamount to a resentencing hearing. This provision authorizes judges, rather than paroling authorities, to decide whether the amount of imprisonment completed serves the purposes of punishment (Reitz & Klingele, 2019). The latter option will require, however, further moral and empirical scrutiny by policy makers as to how to establish meaningful differences in the diminished culpability of JHOs besides the preventive objective of irreparable corruption.

Some scholars contend that the primary objectives of sentencing are retributive and preventive (Keijser, Roberts, & Ryberg, 2020). The *Miller* (2021) sentencing scheme for JHOs combines these two objectives. Judges in Arizona and in other states with JLWOP sentences have the discretion to consider the preventive objective when imposing the offender's sentence. However, the results of this study provide some preliminary feedback to policy makers about the potential benefits of deferring these decisions to backend rather than to front-end decision-making processes. Clearly, if policy makers want to maintain preventive objectives when sentencing JHOs, then it is worth considering a sentencing scheme that allows for evaluations of character based on evidence of actual character change while in prison rather than based on estimates of potential for change in character at sentencing.

Limitations of the Study

The study's measure of irreparable corruption is limited to the timing of the occurrence of a last serious criminal infraction. While this measure ignores other objective indicators of an offender's irreparably corrupt character while incarcerated, it does fill an important gap in the literature about whether differentially sentencing JHOs differ in the timing of their continued criminal corruption when maturity is possible. Nonetheless, the irreparably corrupt sentencing factor remains a vague construct for sentencing JHOs. For this reason, there is a need for additional studies of different definitions and measures of this construct in states with both harsh and non-harsh sentencing cultures.

This study includes a representative sample of Arizona juvenile lifers that allows for generalizations within the state about the survival and withdrawal of the differentially sentence JHOs. The study's sample does not allow, however, for generalizations beyond

Arizona about juvenile lifers from other states with harsh or non-harsh sentencing practices. It allows instead for generalizations about how a harsh sentencing state implemented a top-down Supreme Court policy for limiting the imposition of JLWOP sentences. Additionally, the study's design neither allows for determining the factors actually influencing the differential sentencing of JHOs nor the factors influencing the prison infractions of JHOs. These are important topics for additional research on pre-*Miller* (2012) and post-*Jones* (2021) sentencing practices.

Conclusions

The sentences of JHOs in pre-*Miller* (2012) cases did not reflect hypothesized associations and differences in the timing of an inmate's last serious criminal infractions at points when juveniles are likely to achieve maturity. Differences were expected because the *Miller* (2012) decision promulgated the proposition that life sentences should reflect differences in an offender's capacity for character change. However, the findings of the study indicated that the Arizona pre-*Miller* (2012) sentences did not produce hypothesized differences in continued criminality for the cases in which a sentence of death by prison was imposed from the cases for which it was not. The survival trajectories of the differentially sentenced JHOs also did not reflect any of the competing character assumptions in the *Miller* (2012) decision. Moreover, the study found no differences on an indicator of change in continued criminality at points in time when the JLWOP sentenced group of JHOs should have had higher rates of non-desistance from continued criminality than the JLWP sentenced group of JHOs. This lack of differences indicated that the type of life sentence was not associated with actual evidence of continued corruption when lifers would be eligible for consideration for release in states that abolished natural life sentences for JHOs.

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