



**PHILADELPHIA
LAWYERS *for*
SOCIAL EQUITY**

Life Without Parole for
Second-Degree Murder
in Pennsylvania

AN OBJECTIVE ASSESSMENT OF RACE



Andrea Lindsay, MSW
Clara Rawlings, BS

April 2021

Funded by a Grant from The Heinz Endowments

Contents

Introduction.....	1
Methodology and Terminology	2
Racial Demographics	3
Figure 1: Racial Demographics of Second-Degree Murder Population	4
Figure 2: Racial Demographics of Second-Degree, DOC, and State Populations.....	5
Key Findings	5
Analysis	6
1. Black and Hispanic/Latinx people were significantly younger than White people at the time of the offense; and while youth is predictive of having co-defendants, being White is predictive of <i>not</i> having co-defendants.	6
Figure 3: Racial Demographics of Age at the Time of Offense	7
Figure 4: Age at the Time of Offense Distribution and Frequency by Racial Group	7
Figure 5: Racial Composition as Percent of Age Groups at the Time of Offense	8
Figure 7: Eighteen- to Twenty-Year-Olds at the Time of Offense as Percent of Racial Group	9
Table 1: Impact of Age at Time of Offense and Race on Presence of Co-Defendants (Regression Analysis).....	10
2. Black people comprise the majority of those prosecuted in groups in which two or more people were convicted of second-degree murder for involvement in the same offense.	12
Figure 8: Racial Composition of Individuals with Co-Defendants Also Convicted of Second-Degree Murder	12
Figure 9: Racial Composition of Groups of Two or More People Convicted of Second-Degree Murder	13
3. Compared to Black and Hispanic/Latinx people, White people convicted of second-degree murder were more often involved in arson, burglary, kidnapping, and/or sexual offenses, and less often involved in robbery.	14
Figure 10: Context Felony Conviction Type	14
Figure 11: Percent of Racial Group with Context Felony Conviction	15
4. White people pleaded guilty with significantly greater frequency than other racial groups.	16
Table 2: Impact of Age at Time of Offense and Race on Plea vs. Trial Choice (Regression Analysis)	17
Figure 12: Plea Bargaining by Race and Felony Conviction Type	18
Figure 13: Percent of Racial Group that Pledaded Guilty with Robbery Conviction -- Subset	19
Conclusion	20
Appendix	22
Endnotes	23

Life Without Parole for Second-Degree Murder in Pennsylvania: An Objective Assessment of Race

Andrea Lindsay, MSW and Clara Rawlings, BS¹

Introduction

There are 8,242 people serving life without parole or virtual life sentences of 50 or more years in Pennsylvania, the second highest number not only in the country, but in the world.² Over 1,100 of them have been sentenced to life without parole under the state's second-degree murder – sometimes called “felony murder” – statute. That statute requires judges to impose a mandatory life sentence on anyone convicted of participating in a felony that related to someone's death, including those who did not directly cause the death of the victim and/or had no intention to kill.³ In turn, the Pennsylvania parole code excludes those sentenced to life from parole eligibility,⁴ limiting all opportunities for future release to either exoneration (having the conviction overturned) or commutation (reducing the sentence) by the Governor upon unanimous recommendation of the Board of Pardons.⁵

In November 2019, Pennsylvania's Lieutenant Governor John Fetterman, who chairs the Board of Pardons, commissioned Philadelphia Lawyers for Social Equity (“PLSE”) to conduct an audit of the 1,166 people who were serving life sentences for second-degree murder in the state as of September 2019.⁶ The results of PLSE's audit were published in February 2021 in *Life Without Parole for Second-Degree Murder in Pennsylvania: An Objective Assessment of Sentencing* (“PLSE's first report”).⁷ This was the first time that this particular population (hereafter shortened to “second-degree population”) had ever been studied to this detail, despite taxpayers spending, conservatively, over \$54 million per year incarcerating them.⁸

PLSE's first report found that nearly three-quarters (73.3%) of the second-degree population were 25 or younger at the time of offense; their mean current age as of September 2020 was 49 years old; and they had served, on average, 22 years in prison each – thus far. Four out of five people (79.4%) convicted of second-degree murder in Pennsylvania are people of color, and seven out of ten (69.9%) are Black.

Black people comprise 12.0% of Pennsylvania's population,⁹ yet 47.0% of the state prison population.¹⁰ For the over 5,000 people sentenced to life without parole in the state, the racial disparity is even greater: 65.4% of the people sentenced to life without parole are Black, and for those sentenced under the second-degree murder statute, that number rises to 69.9%.¹¹

These figures are important in and of themselves. Disaggregated and analyzed by race, however, several key disparities in the second-degree population are just as striking – especially age at the time of offense, presence of co-defendants, and plea bargaining rates. This report furthers that analysis and directly examines the role of race in the sentencing of second-degree murder in Pennsylvania.

Methodology and Terminology

This report analyzes demographic characteristics and data collected from public court dockets of those convicted of, and currently serving sentences for, second-degree murder, which is defined in Pennsylvania as a “criminal homicide...committed while [the] defendant was engaged as a principal or an accomplice in the perpetration of a felony.”¹² This analysis uses the same dataset as PLSE’s first report, and the original methodology is repeated here as an appendix.

In addition to the occasional absence of data on public court dockets, this analysis was constrained by terms and racial schema that lack consistent definitions, especially between the courts and the Department of Corrections (“DOC”). By way of example, PLSE compiled racial data from court summaries on co-defendants who were not themselves in the second-degree population, where race had been codified and was provided by the DOC. Comparing the two sources, the courts recorded as “White” or “Black” all the individuals who the DOC recorded as “Hispanic.” Due to the discrepancies, this analysis utilizes only the racial classifications provided by the DOC for consistency, limiting the analysis of race of co-defendants to those who were also in the second-degree population themselves.

As noted in the first report, PLSE was also unable to determine who among the second-degree population were principals versus accomplices in the felony and/or the death, and relatedly, who committed the crime alone versus in a group. While presence of co-defendants on court dockets provides some insight into the circumstances of the event and how the prosecutor tried the case, absence of co-defendants is not by itself conclusive of sole involvement. Others involved in the same event may have been prosecuted separately, received immunity for cooperation with prosecution, or have never been arrested in the first place. These possibilities further reduce the total number of co-defendants available for analysis overall, which could have a bearing on relationships in the data.

Given the complexity and porousness of racial categories in the U.S., even the DOC classifications are themselves imprecise. For example, “Hispanic” defines a very large, heterogeneous group; as such, it could have been assigned as a result of language or surname rather than heritage. Nor were there more precise definitions available from the DOC of their categories “Asian” and “Other,” a deficiency that warrants revision. Furthermore, there were so few individuals identified by the DOC as “Asian” (9), “Other” (3), and “American Indian” (“Native American”) (1) – together comprising just 1.1% of the second-degree population overall – that no statistically-significant relationships could be identified related to these groups. Consequently, this report primarily makes comparisons between groups classified by the DOC as “White,” “Hispanic” (“Hispanic/Latinx”), and “Black,” with occasional reference to the category of “Non-White” or “people of color” to refer together to all groups excluding those identified by the DOC as “White.”

Finally, this analysis describes the second-degree population as a whole and does not make distinctions according to assigned sex. 96.6% (1,126 people) of the second-degree population were identified by the DOC as male, while 3.4% (40 people) were identified as female. The sample size for women is thus too small to identify statistically significant relationships compared to men, and racial groups are therefore analyzed with no distinction as to identified sex.

Racial Demographics

Black people in Pennsylvania have been sentenced to life without parole at a rate that is 18 times higher than White people in the state.¹³ When limited to those convicted of second-degree murder, that rate increases to 21.2 times higher.¹⁴

To further ground the subsequent analyses, this section describes the racial composition of the second-degree population as of September 2019. Of the 1,166 people incarcerated for second-degree murder in Pennsylvania:

- 69.9% (815) are Black
- 20.6% (240) are White
- 8.4% (98) are Hispanic/Latinx
- 1.1% (13) are Asian, Native American, or another race

Second-Degree Murder Population as of September 25, 2019

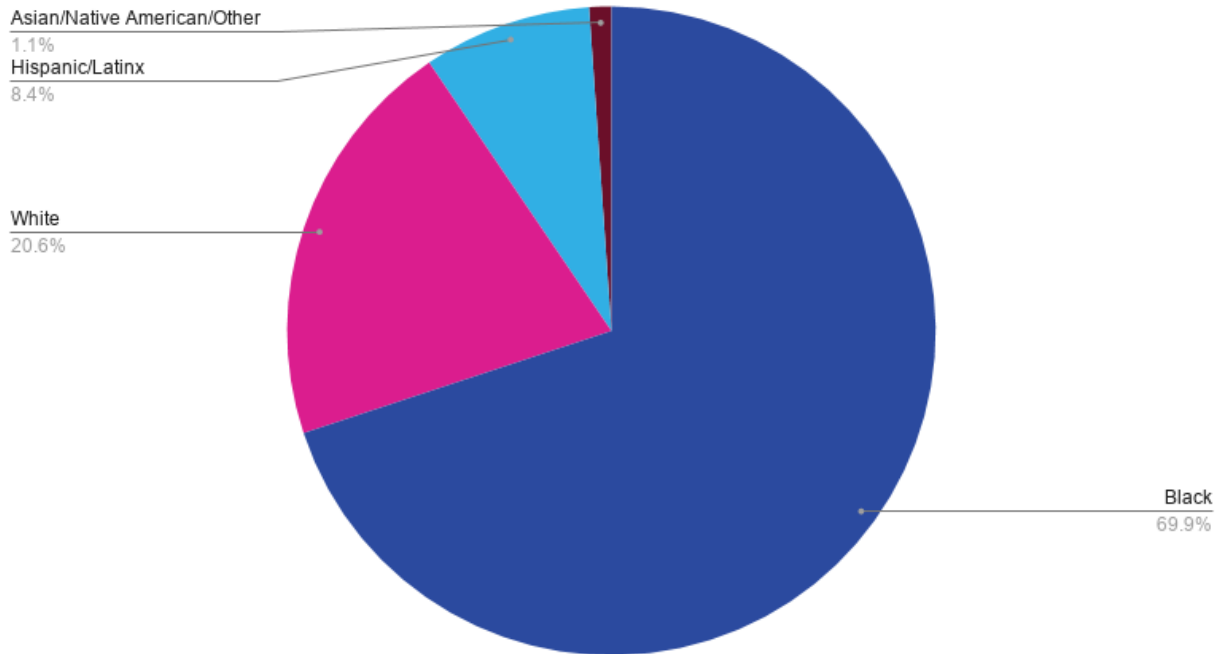


Figure 1: Racial Demographics of Second-Degree Murder Population

This means that Black people are:

- 5.8 times overrepresented compared to their percentage of the state population¹⁵
- 2.0 times overrepresented from Philadelphia County (from which half of the second-degree murder convictions in the state originate)¹⁶
- 6.2 times overrepresented from Allegheny County (which includes Pittsburgh)¹⁷
- 6.6 times overrepresented from the remaining 65 counties^{18,19}

Hispanic/Latinx people are also overrepresented in the second-degree population, though by less substantial numbers. They comprise 8.4% of the second-degree population, compared to 7.8% of the state population.²⁰

The data also show that White people are significantly *underrepresented* in the second-degree population, even in areas with large White populations. White people are:

- 3.7 times underrepresented compared to their percentage of the state population²¹
- 6.0 times underrepresented from Philadelphia County²²
- 4.9 times underrepresented from Allegheny County²³
- 2.0 times underrepresented from the remaining 65 counties²⁴

These disparities are also pronounced in direct comparison to the rest of the DOC population, excluding those incarcerated for second-degree murder. Black people are 1.5 times overrepresented in the second-degree population compared to the DOC population,²⁵ whereas White people are 2.1 times underrepresented.²⁶ Hispanic/Latinx people are overrepresented in the DOC population overall, but rates are comparable between the second-degree population (8.4%) and the rest of the DOC population (9.3%).²⁷

Racial Demographics of Second-Degree, DOC, and State Populations

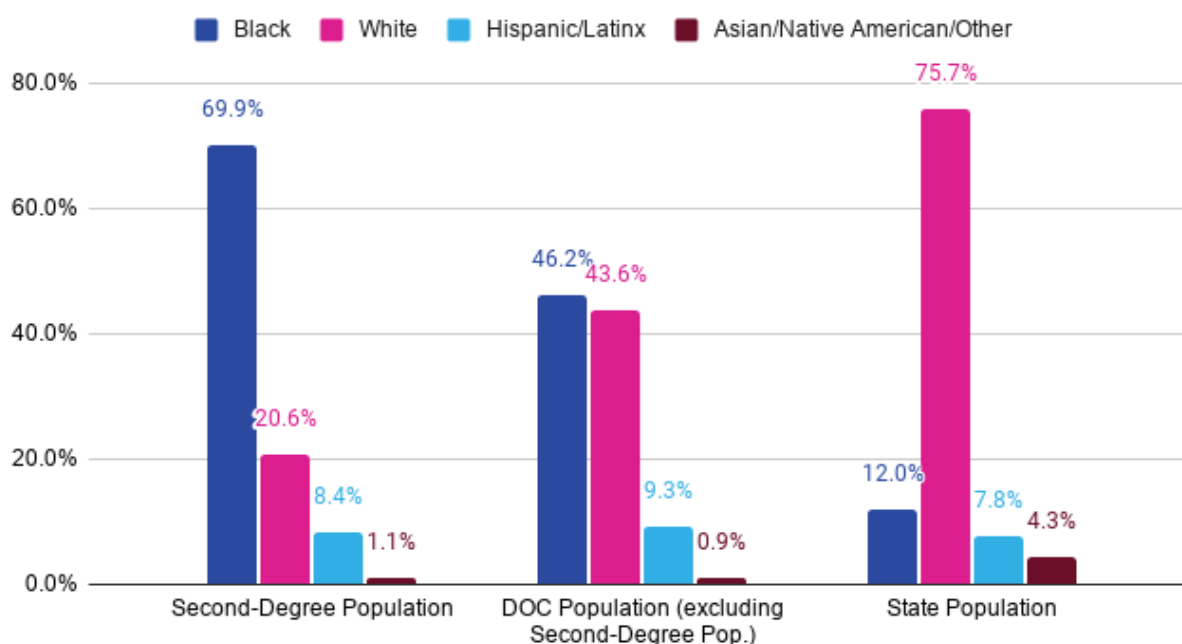


Figure 2: Racial Demographics of Second-Degree, DOC, and State Populations

Key Findings

Disaggregating the data and analyzing them by race reveals significant disparities in the second-degree population beyond disproportionality:

- Black and Hispanic/Latinx people were significantly younger than White people at the time of the offense; and while youth is predictive of having co-defendants, being White is predictive of *not* having co-defendants.**

- 2. Black people comprise the majority of those prosecuted in groups in which two or more people were convicted of second-degree murder for involvement in the same offense.**
- 3. Compared to Black and Hispanic/Latinx people, White people convicted of second-degree murder were more often involved in arson, burglary, kidnapping, and/or sexual offenses,²⁸ and less often involved in robbery.**
- 4. White people pleaded guilty with significantly greater frequency than other racial groups.**

Analysis

1. Black and Hispanic/Latinx people were significantly younger than White people at the time of the offense; and while youth is predictive of having co-defendants, being White is predictive of *not* having co-defendants.

The average (mean) age of an individual in the second-degree population at the time of their offense was 23.4 years old.²⁹ Analyzed by racial group, Black people were 2.9 years younger (22.8) and Hispanic/Latinx people 1.9 years younger (23.8) than White people (25.7) at the time of offense.ⁱ The most common ages (mode) of Black and Hispanic/Latinx people at the time of offense were 19 and 18 years old respectively, again younger than White people, whose mode was 20 years old. “White” was also the only racial denotation significantly correlated with older age at the time of offense.ⁱⁱ

ⁱ These differences in age at the time of offense (utilizing mean) were also indicated using independent samples t-tests. When comparing Black people with White people: $t = -4.597^{**}$, $p < 0.001$; when comparing Hispanic/Latinx people with White people: $t = -1.995^{*}$, $p = 0.047$. This indicates older age at the time of offense among White people.

ⁱⁱ $R = 0.156^{**}$, $p < 0.001$.

Age at Time of Offense

<i>N=Where Offense Date is Known</i>	<i>Percentage of Pop. Where Offense Date is Known</i>	Percentage of Pop. 25 and Under at Time of Offense	Percentage of Pop. 21 and Under at Time of Offense	Mean Age at Time of Offense	Median	Mode
Black (N=749)	91.9%	77.3%	54.2%	22.8	21	19
White (N=179)	74.6%	60.3%	36.3%	25.7	24	20
Hispanic/Latinx (N=93)	94.9%	66.7%	53.7%	23.8	20	18
Asian/Native American/Other (N=13)	100.0%	61.5%	38.5%	26.2	23	21

Figure 3: Racial Demographics of Age at the Time of Offense

Almost three-quarters of the second-degree population (73.3%) were 25 or younger at the time of their offense, meaning that they were not yet developmentally or neurologically mature.³⁰ While most people in each racial group were 25 or younger at the time of offense, Figure 3 shows that the percentages are greater for Black and Hispanic/Latinx people than for White people. Six out of ten (60.7%) White people were 25 or younger, compared to two-thirds (66.7%) of Hispanic/Latinx people, and over three-quarters (77.6%) of Black people.

Age at the Time of Offense Distribution by Racial Category

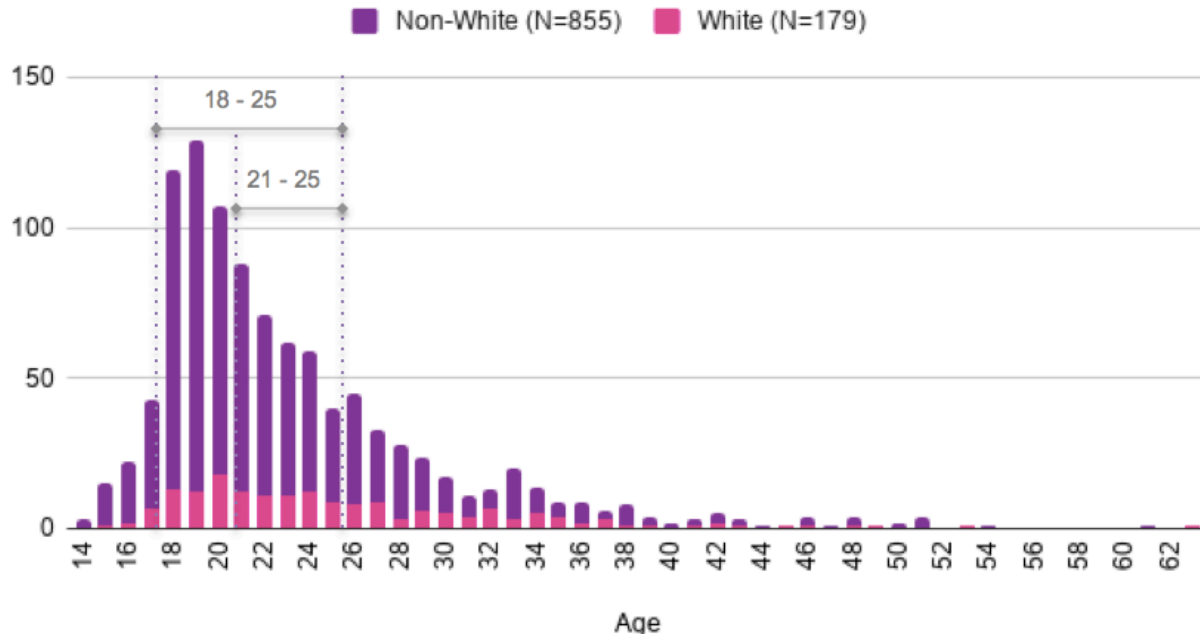


Figure 4: Age at the Time of Offense Distribution and Frequency by Racial Group

Furthermore, people of color comprise 87.9% of 18- to 20-year-olds, 82.8% of 21- to 25-year-olds, and 85.5% of all 18- to 25-year-olds at the time of offense in the second-degree population.

Racial Composition of Age Groups at the Time of Offense

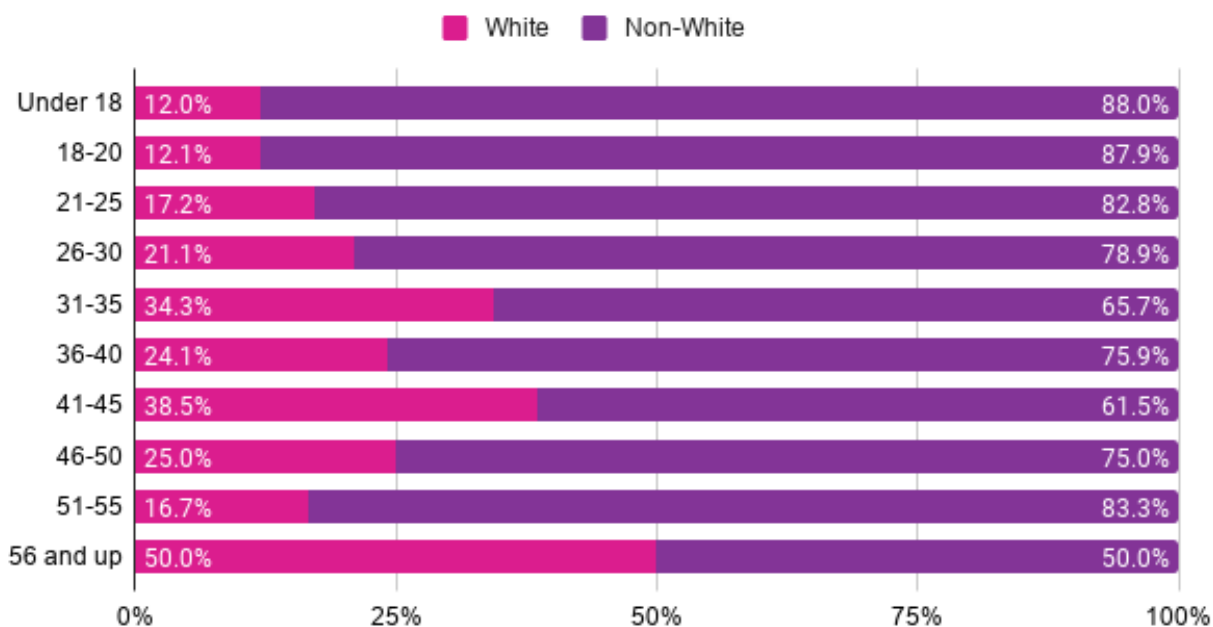


Figure 5: Racial Composition as Percent of Age Groups at the Time of Offense

Over one-third (34.3%) of the second-degree population falls into the age group of 18 to 20 years old at the time of offense.³¹ Of them, three-quarters (75.2%) are Black.

Eighteen- to Twenty-Year-Olds at the Time of Offense by Race

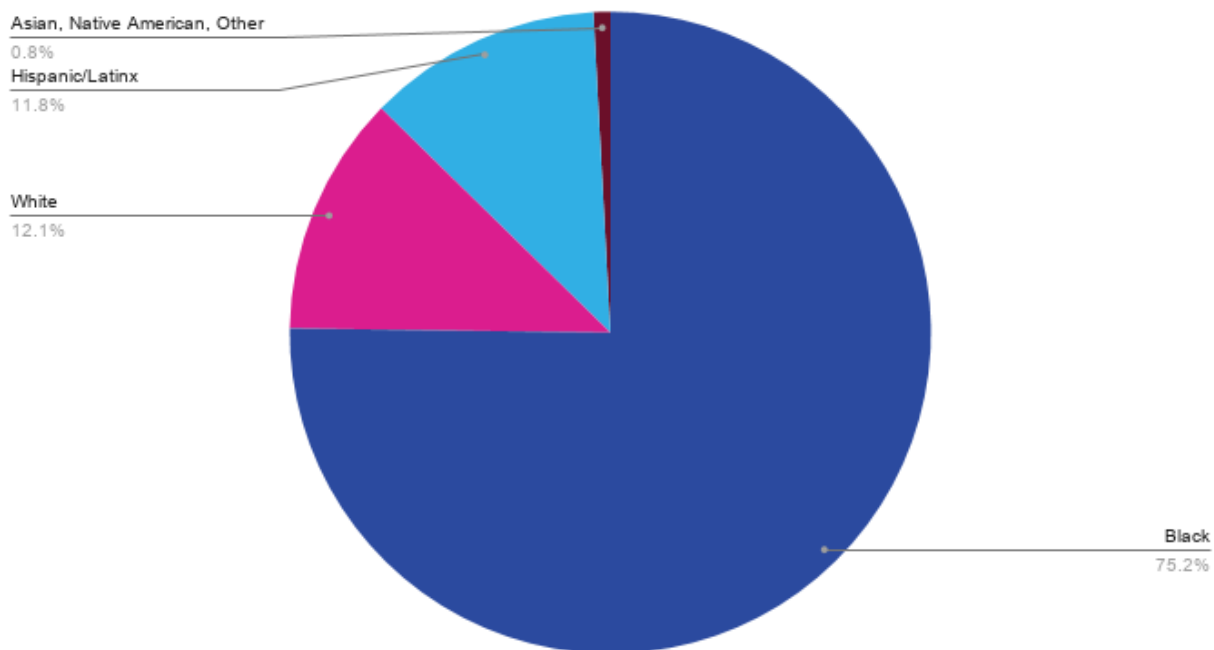


Figure 6: Eighteen- to Twenty-Year-Olds at the Time of Offense by Race

Analyzed as a percentage of each racial group, 18- to 20-year-olds comprised nearly half (45.2%) of the Hispanic/Latinx population, over one-third (35.6%) of the Black population, and one-fourth (24.0%) of the White population.

Eighteen- to Twenty-Year-Olds as Percent of Racial Group

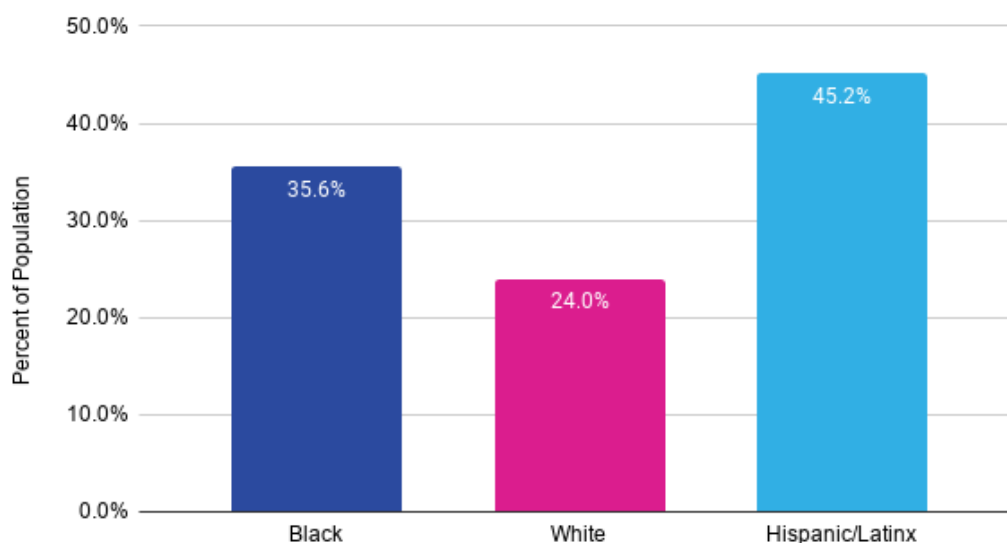


Figure 7: Eighteen- to Twenty-Year-Olds at the Time of Offense as Percent of Racial Group

These data are important because the 18- to 25-year-old age group is gaining increasing recognition by researchers, lawmakers, and the courts as a distinct developmental phase described as emerging adulthood.³² As noted in PLSE's first report, the prefrontal cortex of the brain, which processes prediction of future consequences and allows rational analysis to outweigh emotive or reactive conduct, does not fully mature until approximately age 25.³³ Recognizing this science, legislatures across the country have begun to take action. One prominent example is Washington D.C.'s Second Look Amendment Act of 2019, which will allow judges to review long prison sentences after 15 years for those whose offense was committed prior to their 25th birthday.³⁴

Meanwhile, the courts emphasized age-related reasoning as a chief factor in sentencing with the U.S. Supreme Court's 2005 decision in *Roper v. Simmons*,³⁵ which eliminated the death penalty for those under 18, and followed with *Miller v. Alabama* (2012),³⁶ which eliminated mandatory life without parole for that same age group. While more recent research has confirmed that the factors that characterize youth do not disappear on one's 18th birthday but persist until approximately age 25,³⁷ courts have thus far been slower to recognize and apply research on developmental and neurological maturity to those over the age of 18. Notably, a March 2021 decision by the Washington State Supreme Court held that mandatory life without parole sentences for those under the age of 21 were unconstitutional.³⁸

Another important dimension of age at the time of offense in the second-degree population is its relationship to the presence of co-defendants. Neuroscience data cited by the Supreme Court in *Roper* and *Miller* noted that an important characteristic of youth is that they are more susceptible to peer pressure than older adults.³⁹ This may be particularly relevant in Pennsylvania, where accomplice liability is included within the second-degree murder statute – that is, that all participants in the felony related to someone’s death may receive the mandatory life sentence for homicide regardless of their role in the crime if they are charged and convicted of second-degree murder.

In the second-degree population, the relationship between age at the time of offense and presence of at least one co-defendant has statistical significance: the younger someone was, the more likely they were to have had a co-defendant.ⁱⁱⁱ As shown in Table 1 below using a regression model with race and presence of co-defendants, age at the time of offense was a strong predictor overall, indicating that younger ages at the time of offense were significantly predictive of having at least one co-defendant.

Table: Impact of age at time of offense and race on the whether an individual had a co-defendant (regression analysis)		
Predictors	<i>t</i>	Signif.
Age at time of offense	-4.118	< 0.001**
Race		
White	-5.665	< 0.001**
Hispanic/Latinx	-1.317	0.188
** <i>p</i> < 0.01 non-significance for the denotation of “Black” is implied by categorical dummy coding		

Table 1: Impact of Age at Time of Offense and Race on Presence of Co-Defendants (Regression Analysis)

ⁱⁱⁱ Correlation for age and having at least one co-defendant: $R = -0.152^{**}$, $p < 0.001$. Significance was also demonstrated in a regression analysis (results of which are presented in Table 1), which shows that the relationship between age and having a co-defendant remains strong even when analyzed alongside other variables' influence.

Furthermore, being coded as “White” was also a significant *negative* predictor of co-defendants – so much so that “White” had a more extreme t-value (-5.665) than even age at the time of offense (-4.118). This means that categorization as “White” is the most powerful variable in this model, reliably predicting that a White person in the second-degree population would not have any co-defendants. Being “Hispanic” or “Black” was not significantly predictive of co-defendants in either the positive or negative direction, indicating that there was no tendency among those racial groupings to either have or not have co-defendants because of their race alone. Instead, the fact that they more frequently had co-defendants is attributable to their younger age.

Conclusion: Differences in age at the time of offense have important implications on neurological development and thus intentionality and resulting culpability in the crime. A large number of people in the second-degree population – Black, Hispanic/Latinx, and White – fall slightly above the age of 18 at which the Supreme Court has ruled that mandatory life sentences are unconstitutional.⁴⁰ The very recent (March 2021) decision by the Washington Supreme Court, citing more recent neuroscience and “evolving standards of decency,”⁴¹ provides good cause to consider differently those under the age of 21, and for the Board of Pardons to consider them differently than others applying for commutations of their sentences.

Because they were younger at the time of the offense – and many just past their 18th birthdays – Black and Latinx/Hispanic people in the second-degree population are more likely to be adversely impacted by restricting the Supreme Court’s decisions to those under the age of 18. Assuming life expectancy is the same across races, they will also spend a greater proportion of their lives in prison. On the other hand, these data indicate that factors associated with youthful age in contextualizing the offense apply to a smaller proportion of the White second-degree population, which may in turn contribute to other differences in group characteristics by race.

Indeed, for White people, race was more powerful in predicting the absence of a co-defendant than was older age at the time of the offense. Whether someone had a co-defendant or not is important because it suggests there may be differences by racial group in the nature of the offense (e.g., whether some individuals were more disposed to act alone or in a group), the style of the prosecution (e.g., whether a prosecutor was more likely to pursue second-degree murder charges against certain groups of people), or both.

2. Black people comprise the majority of those prosecuted in groups in which two or more people were convicted of second-degree murder for involvement in the same offense.

In the second-degree population, 39.8% of Black people and 32.3% of Hispanic/Latinx people were prosecuted with at least one co-defendant, compared to 14.8% of White people.⁴² 508 unique co-defendants were identified from the dockets of those in the second-degree population, and roughly one-third (32.5%, or 165 people) were also in the second-degree population. Of these 165 co-defendants, 134 (81.2%) were Black, 14 (8.5%) were Hispanic/Latinx, 12 (7.3%) were White, and 5 (3.0%) were Asian.

Individuals with Co-Defendants also Convicted of Second-Degree Murder

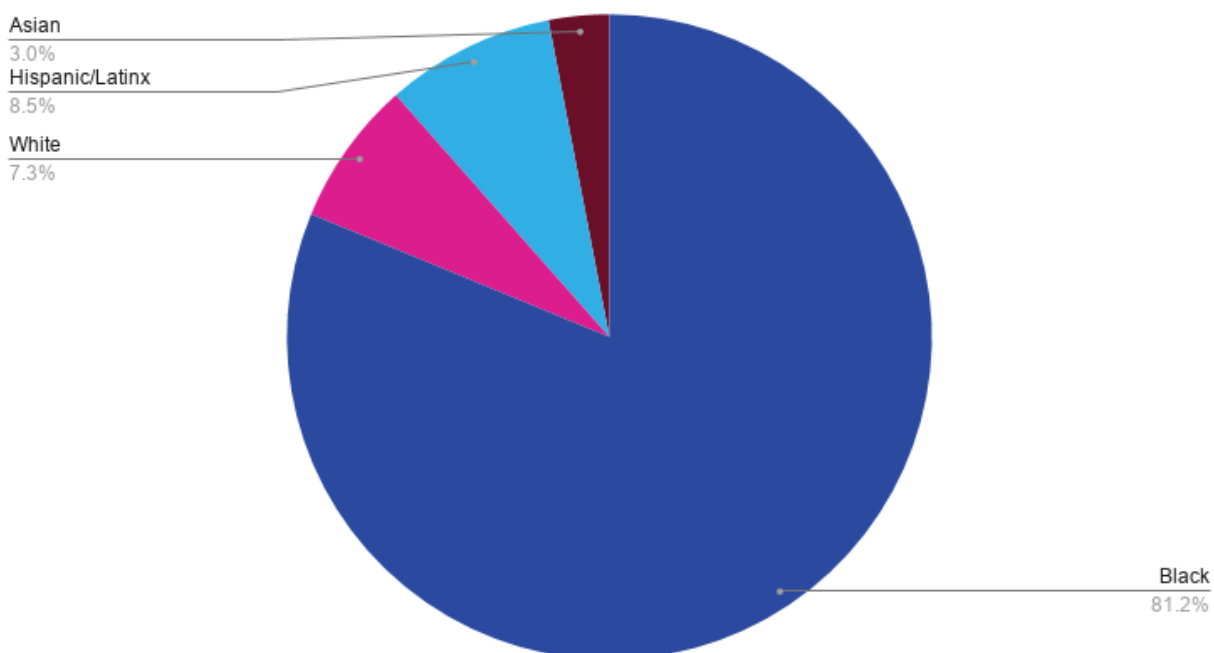


Figure 8: Racial Composition of Individuals with Co-Defendants Also Convicted of Second-Degree Murder

The racial disparities of these individuals exceed those in the second-degree population overall, especially for Black people – 81.2% compared to 69.9%. This suggests that the statute’s broad application to both principals and accomplices to a felony related to someone’s death has a greater net-widening effect on Black people overall.

Another way to analyze these data is through the racial composition of the groups of two or more people both convicted of second-degree murder. The 165 co-defendants who were also in the second-degree population comprised 80 unique groups, 92.5% (74) of which were racially homogeneous. Of these 74 racially homogeneous groups, 83.8% (62) were all Black, six were all White, five were all Hispanic/Latinx, and one was all Asian. Of the six heterogeneous groups, all six included at least one Black person, and only one included a White person.

The following chart shows the racial composition of the groups in which two or more people were convicted of second-degree murder.

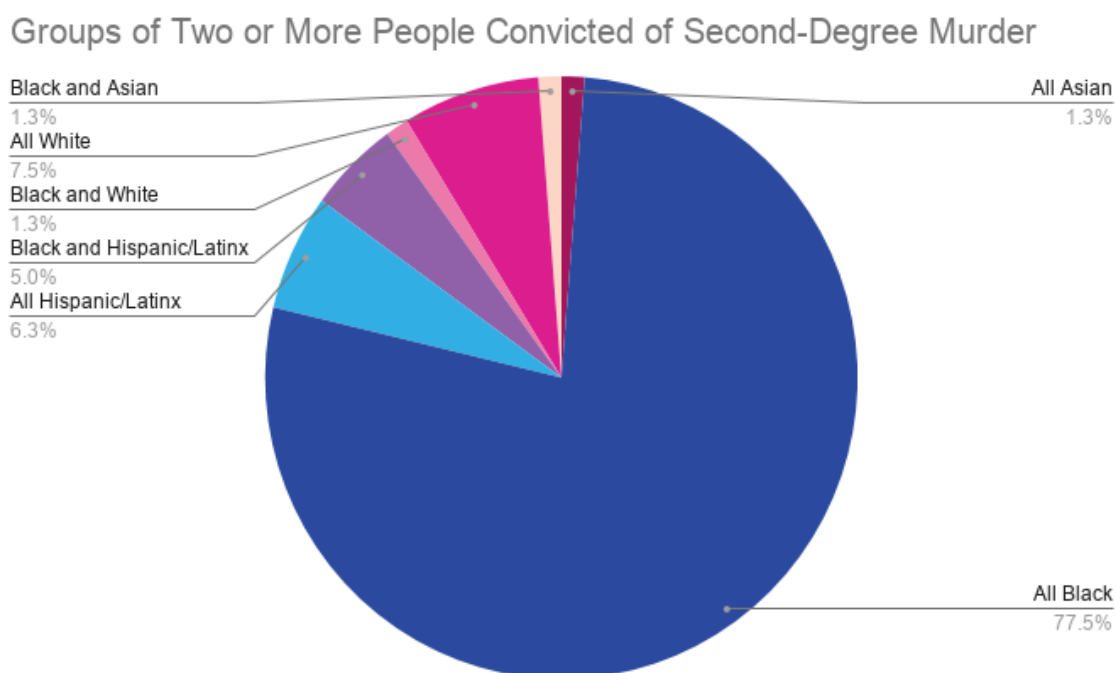


Figure 9: Racial Composition of Groups of Two or More People Convicted of Second-Degree Murder

Taken together, groups of two of more Black people were convicted of second-degree murder for involvement in the same felony more often than any other racial group. The disparity is especially great compared to White people. Put simply, the number of Black people in the second-degree population is not equal to the number of events during which a death occurred, increasing the likelihood that the proportion of accomplices compared to principals may be greater for the Black population than other racial groups.

Conclusion: The broad definition of the second-degree murder statute ensures that co-defendants with any level of involvement in the felony, however slight or tangential, can find themselves facing and serving a life sentence as a result of mandatory sentencing. Whether due to more frequent group involvement, prosecutorial charging decisions, or both, this disproportionately affects Black people, and increases the racial disparities in the second-degree population overall.

The above analysis relies only on co-defendants located on the public court dockets, making it possible that there are other unrecorded individuals who were involved in the same event. Even so, in the prosecution of second-degree murder in Pennsylvania, Black people were less often prosecuted alone than White people, and most often prosecuted in groups where multiple people were convicted of second-degree murder.⁴³

3. Compared to Black and Hispanic/Latinx people, White people convicted of second-degree murder were more often involved in arson, burglary, kidnapping, and/or sexual offenses,⁴⁴ and less often involved in robbery.

Second-degree murder is defined as when someone dies during a particular kind of felony – an act of robbery, burglary, kidnapping, arson, or certain sexual offenses⁴⁵ – whether committing, attempting to commit, or fleeing from it.⁴⁶ Qualifying felony convictions were listed on the dockets of 765 individuals (65.6%) in the second-degree population, and of them, 136 (17.8% of the 765) listed more than one type of qualifying felony conviction. This, too, varies by race. 28.4% of White people had multiple felony types, compared to 15.9% of Black people and 20.8% of Hispanic/Latinx people.⁴⁷

Overall, robbery was by far the most common felony type underlying a second-degree murder conviction for all racial groups; it was present in 86.0% of the court dockets which listed a qualifying felony conviction.⁴⁸ However, a deeper examination of felony conviction type reveals significant differences by race, both with regard to robbery and more generally. Although still comprising most of all felony conviction types, the percentage of the second-degree population convicted of robbery was dramatically lower for White people (65.3%) than for Black (89.3%) and Hispanic/Latinx (86.1%) people. While White people were least convicted of robbery among these racial groups, they were most convicted of every other felony type – burglary (28.4%), arson (16.8%), kidnapping (12.6%), and sexual offenses (7.4%).

Context Felony Conviction Type

	<i>Percent of Pop. Known</i>	Robbery	Burglary	Kidnapping	Arson	Sexual
Total (N=765)	65.6%	86.0%	19.6%	5.2%	5.1%	2.4%
Black (N=591)	72.5%	89.3%	17.6%	4.4%	3.4%	1.5%
White (N=95)	39.6%	65.3%	28.4%	12.6%	16.8%	7.4%
Hispanic/Latinx (N=72)	73.5%	86.1%	26.4%	2.8%	2.8%	2.8%
Asian/Native American/Other (N=7)	53.9%	85.7%	N/A	N/A	14.3%	N/A

Figure 10: Context Felony Conviction Type

Percent of Racial Group with Context Felony Conviction

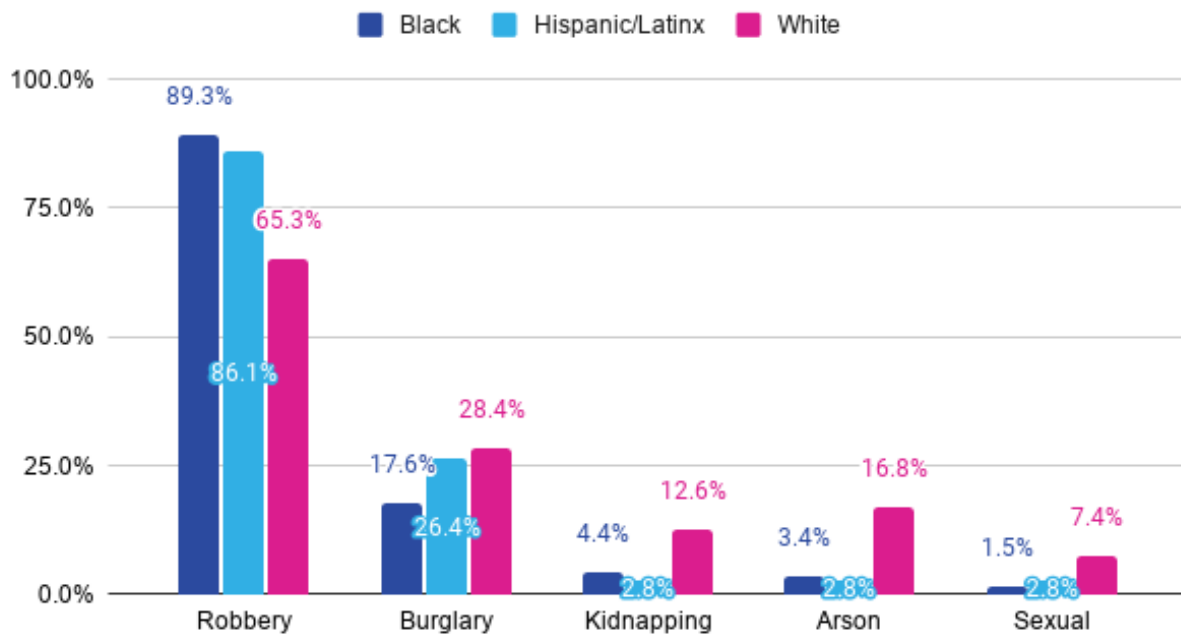


Figure 11: Percent of Racial Group with Context Felony Conviction

Many of the relationships between race and felony conviction type also have statistical significance. Being Black was positively correlated with having a robbery context conviction,^{iv} but being White was *negatively* correlated with having a robbery conviction.^v On the other hand, being White was *positively* correlated with burglary, kidnapping, arson, and sexual context convictions,^{vi} while being Black was negatively correlated with these felony types.^{vii}

The data also reveal marked differences in felony conviction type when considering whether an individual had co-defendants. For White people, the only context conviction that was positively correlated with having co-defendants was kidnapping.^{viii} For Black people, the only context conviction that was positively correlated with co-defendants was robbery.^{ix} No significant correlations were found between context convictions and presence of co-defendants for the Hispanic/Latinx population.

^{iv} $R = 0.180^{**}$, $p < 0.001$

^v $R = -0.227^{**}$, $p < 0.001$

^{vi} Burglary: $R = 0.083^{*}$, $p = 0.022$; Kidnapping: $R = 0.125^{**}$, $p = 0.001$; Arson: $R = 0.205^{**}$, $p < 0.001$; Sexual: $R = 0.124^{**}$, $p = 0.001$

^{vii} Burglary: $R = -0.106^{**}$, $p = 0.004$; Kidnapping: $R = -0.074^{*}$, $p = 0.042$; Arson: $R = -0.140^{**}$, $p < 0.001$; Sexual: $R = -0.105^{**}$, $p = 0.004$

^{viii} $R = 0.303^{**}$, $p = 0.003$

^{ix} $R = 0.139^{**}$, $p = 0.001$

Given the broadness and potential overlap in the first-, second-, and third-degree murder statutes, it is possible that these differences may once again reflect differential charging decisions of prosecutors. For example, some crimes whose circumstances could meet common applications of the first-degree murder statute (defined as “an intentional killing”)⁴⁹ for Black and Hispanic/Latinx people may more often be prosecuted for White people under the second-degree murder statute (defined as a death that occurs while “engaged as a principal or an accomplice in the perpetration of a felony”),⁵⁰ and vice versa.

On the other hand, the third-degree murder statute (defined as “all other kinds of murder”)⁵¹ is the only one of the three that allows for a discretionary sentence rather than mandatory life without parole. The third-degree murder statute may therefore be used as a tool to encourage cooperation with the prosecution and/or plea bargaining by those whose crimes meet very similar circumstances to those found in both the first- and second-degree populations, which could increase racial disparities in the life-sentenced population overall.⁵²

Conclusion: Differences in felony conviction type by race may indicate underlying differences in the circumstances related to the offense, including their prosecution. While most second-degree murder convictions in the state relate to an act of robbery, this applies to almost nine out of ten (89.3%) Black people, yet only 65.3% of White people. Although comparatively infrequent overall, differences in felony conviction type are particularly apparent between the White population and the Black and Hispanic/Latinx populations in rates of kidnapping (of which White people were convicted as much as 4.5 times as often), arson (up to 6.0 times as often), and sexual offenses (up to 4.9 times as often).

Another possibility is that the style of prosecution is different for White defendants than Black and Hispanic/Latinx defendants, which could be reflected in charging decisions among the murder statutes as well as in plea offers. The relationship between felony conviction type, plea bargaining, and race is explored further in the following section.

4. White people pleaded guilty with significantly greater frequency than other racial groups.

As discussed in detail in the first report,⁵³ statewide, White people pleaded guilty twice as often as Hispanic/Latinx people (36.3% versus 17.8%), and over three times as often as Black people (36.3% versus 11.4%). Across each county-level jurisdiction analyzed, White people pleaded guilty as much as 4.7 times more often (in Allegheny County), and at least 1.6 times more often (in the 65 counties excluding Philadelphia and Allegheny counties) than Black or Hispanic/Latinx people.⁵⁴

Beyond the numbers, there are also statistically significant relationships in plea bargaining rates by race.^x In a regression model looking for predictors of plea versus trial choices in general, race proved to be a significant predictor, indicating that variance in plea versus trial choices can be attributed in part to trends particular to racial groups. In this case, being “White” was predictive of taking a plea deal, whereas “Black” and “Hispanic” had greater variation in favor of going to trial.

Table: Impact of age at time of offense and race on plea vs. trial choice (regression analysis)		
Predictors	<i>t</i>	Signif.
Age at time of offense	1.351	0.177
Race		
Black	-7.138	< 0.001**
Hispanic/Latinx	-3.401	0.001**
** <i>p</i> < 0.01 significance for the denotation of “White” is implied by categorical dummy coding		

Table 2: Impact of Age at Time of Offense and Race on Plea vs. Trial Choice (Regression Analysis)

One hypothesis for the higher rate of plea bargaining among White people is related to the finding that White people were more likely to not have had co-defendants, which in turn is correlated with a higher incidence of taking a plea without factoring in race.^{xi} Even then, however, White people without co-defendants pleaded guilty 38.1% of the time, compared to Black people without co-defendants who pleaded guilty only 12.1% of the time.

The difference is almost as great when considering the plea rates for White and Black people who had co-defendants, which were 29.6% and 10.5% respectively. Regression analysis indicates that being White had a greater bearing on whether someone pleaded guilty than did being prosecuted alone.^{xii}

^x Plea rates among those identified as Black were statistically lower than the rest of the population ($\chi^2 = 116.718^{**}$, $p < 0.001$), while plea rates among those identified as White were statistically higher than the rest of the population ($\chi^2 = 79.058^{**}$, $p < 0.001$).

^{xi} Correlation for plea and co-defendants: $R = -0.095^{**}$, $p = 0.003$

^{xii} In a regression model with race and group status, being “White” was significantly predictive of taking a plea deal ($t = 7.396$, $p < 0.001$), while group involvement was not significantly predictive in either direction.

Another way of analyzing plea bargaining data and race is through differences that arise due to the felony conviction type, as summarized in the table below. While the plea bargaining rate across felony conviction type appears relatively consistent overall – roughly between 10 and 11% except for arson (23.1%) – the plea bargaining rates by conviction type in fact vary by race.⁵⁵

Plea Bargaining by Race and Felony Conviction Type

<i>N=Where Context Felony Conviction Known</i>	Total (N=765)	Black (N=591)	White (N=95)	Hispanic/Latinx (N=72)
Percent with Robbery Conviction	86.0%	89.3%	65.3%	86.1%
Percent who Pledaded Guilty	10.6%	7.8%	33.9%	12.9%
Percent with Burglary Conviction	19.6%	17.6%	28.4%	26.4%
Percent who Pledaded Guilty	10.0%	3.8%	22.2%	26.3%
Percent with Kidnapping Conviction	5.2%	4.4%	12.6%	4.2%
Percent who Pledaded Guilty	10.0%	11.5%	8.3%	0.0%
Percent with Arson Conviction	5.1%	3.4%	16.8%	2.7%
Percent who Pledaded Guilty	23.1%	25.0%	18.8%	50.0%
Percent with Sexual Conviction	2.4%	1.5%	7.4%	2.8%
Percent who Pledaded Guilty	11.1%	14.3%	N/A	N/A

Figure 12: Plea Bargaining by Race and Felony Conviction Type

For example, as shown in Figure 12 above, where the underlying offense was robbery – the most frequent contextual felony and thus comprising the largest sample sizes – the overall rate of plea bargaining was 10.6%. However, when analyzed by race, 33.9% of White people in the second-degree population who were convicted of robbery pleaded guilty. This is 4.3 times more often than Black people (7.8%) and 2.6 times more often than Hispanic/Latinx people (12.9%) convicted of robbery.

Percent of Racial Group that Pleaded Guilty with Robbery Conviction

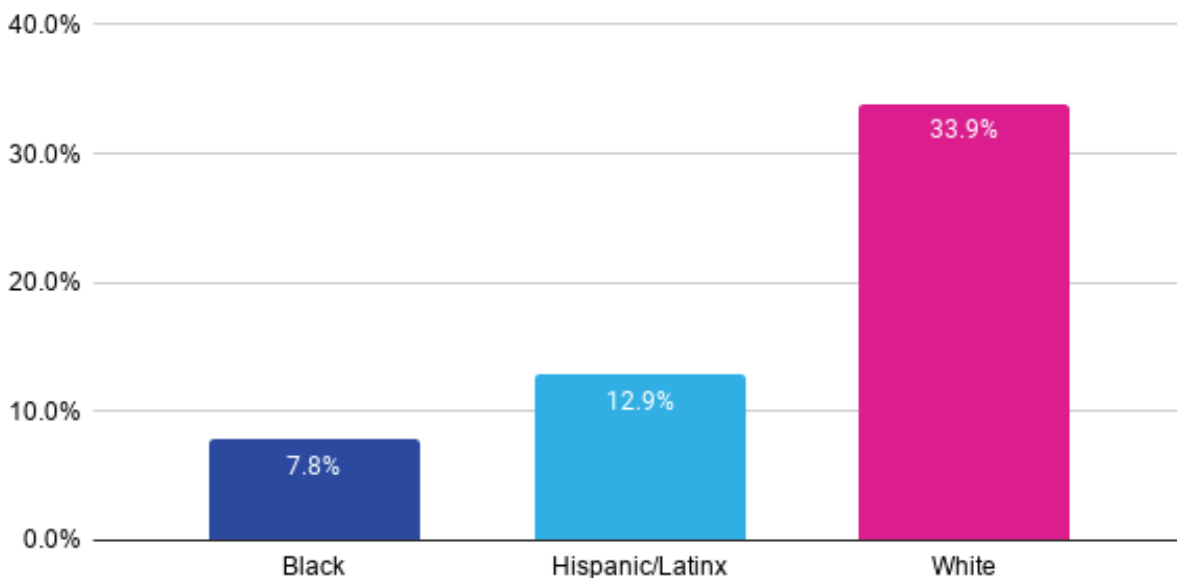


Figure 13: Percent of Racial Group that Pleaded Guilty with Robbery Conviction -- Subset

Conclusion: White people pleaded guilty with the greatest frequency overall, and that is also particularly true for robbery, the most common underlying felony. As suggested in PLSE's first report, racial differences in the plea bargaining rate could result from underlying differences in the nature of involvement. Further, the absence of co-defendants among White people could indicate they may have been more likely to be principals who acted alone. In turn, this could influence the decision to plead guilty due to increased likelihood of being convicted of first-degree murder at trial and thus potentially subject to the death penalty.⁵⁶

The fact that felony conviction type also yielded differences in the rate of plea bargaining by race also suggests the role that prosecutorial discretion may play in racial disparities in the second-degree population. Possible explanations are that prosecutors less often offered pleas to Black defendants, and/or that the terms offered were an insufficient incentive to pleading guilty when balanced against perceived probability of conviction at trial.⁵⁷

Conclusion

In PLSE's first report on the population of people convicted of second-degree murder in Pennsylvania, several factors emerged that should be of importance to the Board of Pardons and Governor in evaluating applications for clemency, as well as to the legislature, which enacted the second-degree murder statute and made life without parole its mandatory sentence.

Those initial factors included: (1) the age of 25 or younger at the time of offense due to relative neurological and developmental immaturity; (2) the number of years served, using 20 years as a benchmark for comparable penalties for co-defendants who received discretionary sentences; (3) age at the time of release, using the age of 40 as a minimum for aging out of crime and 50 as a conservative indicator of posing little risk of recidivism; and (4) the jurisdiction where the penalty was imposed.

This follow-up analysis highlights the racial disparities, sometimes quite stark, in the second-degree murder population. While little research exists nationwide on internal characteristics of racial disparities and the felony murder rule – the theoretical underpinning of Pennsylvania's second-degree murder statute⁵⁸ – this analysis documents that racial differences in Pennsylvania's second-degree population extend beyond sheer disproportionality and comprise fundamental disparities.

In particular, this report finds that: (1) Black and Hispanic/Latinx people were significantly younger than White people at the time of offense; and while youth is predictive of having co-defendants, being White is predictive of not having co-defendants; (2) Black people comprise the majority of those prosecuted in groups in which two or more people were convicted of second-degree murder; (3) White people were least involved in robbery and most involved in every other felony conviction type; and (4) White people pleaded guilty with significantly greater frequency than other racial groups.

Documentation of the nature of individual involvement (e.g., principal versus accomplice) and the role of prosecutorial discretion (e.g., charging decisions and plea offers) would refine these findings. Even without them, however, the data are clear that the second-degree murder statute – along with its mandatory life without parole sentence – contributes to racial disparities, particularly for young people of color.

These data also demonstrate that using age 18 instead of 21 – much less 25 – as the age at which the court imposes adult culpability has a disproportionate impact on Black and Hispanic/Latinx people in the second-degree population. The well-documented characteristics of youth – including, but not limited to, the power of peer pressure, influence of group behavior, tendency to act recklessly, and underdeveloped capacity to consider consequences before acting – apply to a significantly larger percentage of the Black and Hispanic/Latinx second-degree populations compared to the White population. While that same immaturity undoubtedly affects decision-making throughout the court process, it also promises the human capacity to change and suitability for parole.

This report has analyzed objective data relating to 1,166 people serving life sentences for second-degree murder in Pennsylvania. The data demonstrate that the state's second-degree murder statute has had a markedly disparate impact based on race, highlighting the need for the Board of Pardons and the General Assembly to attend to these factors as they continue making important strides to achieve equal justice under law.

Appendix

This report includes a review of data from the public court records of each individual in the second-degree population, along with basic demographic data provided to the Board of Pardons (“BOP”) by the DOC. Data were collected using the public electronic database maintained by the Administrative Office of the Pennsylvania Courts (“AOPC”).⁵⁹ To verify that the docket was for the second-degree murder conviction for which the individual is currently incarcerated, court dockets located on the AOPC web portal were matched by four factors – name, date of birth, county in which the underlying felony occurred (“committing county”), and sentence date.⁶⁰ Court dockets were unable to be analyzed for 127 individuals (10.9%) in the second-degree population due to either errors in the AOPC database or because the records were so old that they were not included in the AOPC database.⁶¹

Court dockets were obtained and reviewed for 89.1% (1,039) of the second-degree population. Of those, 35.0% (364) included at least one joined co-defendant, comprising a secondary co-defendant population of 508 unique individuals and 603 co-defendants included in this analysis overall.

Coded data were analyzed using SPSS Statistics software and sorted by committing county, race, sex, and geographic parameters.⁶² Frequencies, cross tabulations, and measures of central tendency were calculated from both the DOC data and that which was in the AOPC public records. Descriptive, correlational, and regression analyses were performed to identify possible trends in the data.

Additionally, supplementary data were collected for co-defendants who were formally linked on the second-degree docket as a related case. Individuals possibly involved in the same offense (e.g., two individuals in the second-degree population with the same offense date and similar charges) were coded as co-defendants only if they were officially joined on the docket(s). This distinction is important because there is a high probability of others involved in the same offense who were excluded from this analysis, either because they were not recorded on the original docket as a linked case or they were not prosecuted (e.g., an individual whose charges were dropped for offering witness testimony to aid in prosecution).

Sample sizes vary based on the availability of located dockets and the completeness of a particular data point on each located docket due to original coding by the courts and/or migrated data. When variable, data tables include a comparison between the overall second-degree population and the percentage of located dockets where a specific variable is known to evaluate the completeness of the data.⁶³

Endnotes

¹ Andrea Lindsay is Lead Researcher and Mitigation Specialist for PLSE and is the author of *Life Without Parole for Second-Degree Murder in Pennsylvania: An Objective Assessment of Sentencing*. Clara Rawlings is Data Analyst for PLSE. PLSE wishes to acknowledge and thank the Pennsylvania Board of Pardons and its Secretary Brandon Flood for providing the data needed to conduct this research, as well as The Heinz Endowments for its grant to PLSE to fund this report.

² Nellis, A. (2021). No End in Sight: America's Enduring Reliance on Life Imprisonment. *The Sentencing Project*. This number includes both those sentenced to life without parole (5,375), virtual life (2,807; sentences of 50 years or more before the opportunity of parole), and life with parole (60).

³ 18 Pa.C.S. § 2502(b).

⁴ 61 Pa. C.S. § 6137(a).

⁵ Pa. Const. art. IV, § 9(a). The pardon power was originally granted to William Penn by King James II in the original Charter of March 4, 1681; and it appeared in the first Constitution (then called the "Frame of Government") of Pennsylvania adopted on September 28, 1776. The Board of Pardons was added by constitutional amendment in 1872. Since then, amendments have been adopted that changed its composition and size. Of relevance to this report, the constitution was amended in 1997 to require unanimous votes in cases of commuting sentences of death or life in prison.

⁶ Data provided to the BOP by the DOC.

⁷ The report is accessible at: <https://www.plsephilly.org/wp-content/uploads/2021/01/PLSE-Second-Degree-Murder-Audit-Jan-19-2021.pdf>.

⁸ Population size as of September 25, 2019. Cost calculated using the average annual cost of \$46,767 per person provided by the DOC to the Secretary of the BOP. Medication costs alone for those over the age of 50 – 47.1% of the second-degree population – are estimated to be an additional \$3,630.75 per person annually.

⁹ State and county population data are 2019 estimates from the U.S. Census Bureau QuickFacts, accessible at <https://www.census.gov/quickfacts/PA>.

¹⁰ Data from Pennsylvania Department of Corrections Monthly Institutional Profile as of January 31, 2021. It is well-documented that a substantial proportion of racial disparities in U.S. prisons and jails result from factors other than offending patterns. Common explanations for these factors include policies and practices; implicit bias in decision-making; and structural factors that contribute to high levels of violence and policing in non-White neighborhoods, such as underfunded schools, concentrated poverty, and lack of housing and employment opportunities. See Nellis, A. (2016). *The Color of Justice: Racial and Ethnic Disparity in State Prisons. The Sentencing Project*.

¹¹ 64.7% of those convicted of first-degree murder are Black, compared to 69.9% of those convicted of second-degree murder. In contrast, 25.2% of those convicted of first-degree murder in Pennsylvania are White, compared to 20.6% of those convicted of second-degree murder.

¹² 18 Pa.C.S. § 2502(b).

¹³ Cozzens, Q. & Grote, B. (2018). *A Way Out: Abolishing Death By Incarceration in Pennsylvania. Abolitionist Law Center*.

¹⁴ Per capita rate of sentencing of second-degree murder in Pennsylvania is 53.1 per 100,000 Black people, compared to 2.5 per 100,000 White people.

¹⁵ 12.0% of the state population, 69.9% of the state's second-degree population

¹⁶ 43.6% of the county population, 85.6% of the county's second-degree population

¹⁷ 13.4% of the county population, 82.9% of the county's second-degree population

¹⁸ 6.8% of the total population, 45.1% of those counties' second-degree populations

¹⁹ 16 counties had 0 people convicted of second-degree murder: Crawford, Jefferson, Greene, Columbia, Tioga, Somerset, Clinton, Perry, Potter, Juniata, Snyder, Susquehanna, Fulton, Montour, Sullivan, and Cameron.

²⁰ State population data are from 2019 estimates from the U.S. Census Bureau QuickFacts, accessible at <https://www.census.gov/quickfacts/PA>.

²¹ 75.7% of the state population, 20.6% of the second-degree population

²² 34.3% of the county population, 5.7% of the county's second-degree population

-
- ²³ 78.1% of the county population, 15.8% of the county's second-degree population
- ²⁴ 82.0% of the total population, 42.0% of those counties' second-degree populations. 16 counties had 0 people convicted of second-degree murder: Crawford, Jefferson, Greene, Columbia, Tioga, Somerset, Clinton, Perry, Potter, Juniata, Snyder, Susquehanna, Fulton, Montour, Sullivan, and Cameron.
- ²⁵ 46.2% of the state prison population according to the Pennsylvania Department of Corrections Monthly Institutional Profile as of January 31, 2021; 69.9% of the state's second-degree population
- ²⁶ 43.6% of the state prison population according to the Pennsylvania Department of Corrections Monthly Institutional Profile as of January 31, 2021; 20.6% of the state's second-degree population
- ²⁷ Pennsylvania Department of Corrections Monthly Institutional Profile as of January 31, 2021.
- ²⁸ Deviate sexual intercourse by force or threat of force and/or rape.
- ²⁹ See PLSE's first report *Figure 2*, at p. 13.
- ³⁰ Age at the time of offense was known for 88.7% (1,034 people) of the second-degree population.
- ³¹ 355 people out of the 1,034 people whose offense dates were known.
- ³² See Lindell, K., & Goodjoint, K. (2020). Rethinking Justice for Emerging Adults: Spotlight on the Great Lakes Region. *Juvenile Law Center*. <https://jlc.org/sites/default/files/attachments/2020-09/JLC-Emerging-Adults-9-2.pdf>.
- ³³ Steinberg, L. (2008). A Social Neuroscience Perspective on Adolescent Risk-taking. *Developmental Review* 28(1), 78-106. <https://doi.org/10.1016/j.dr.2007.08.002>; Arain, M., Haque, M., Johal, L., Mathur, P., Nel, W., Rais, A., Sandhu, R. & Sharma, S. (2012). Maturation of the Adolescent Brain. *Neuropsychiatric Disease and Treatment*. 9, 449-61. <https://doi.org/10.2147/NDT.S39776>
- ³⁴ DC B23-0127. Second Look Amendment Act of 2019. <https://lims.dccouncil.us/Legislation/B23-0127>
- ³⁵ *Roper v. Simmons*, 543 U.S. 551 (2005).
- ³⁶ *Miller v. Alabama*, 567 U.S. 460 (2012).
- ³⁷ Cohen, A., Breiner, K., Steinberg, L., Bonnie, R., Scott, E., Taylor-Thompson, K., Rudolph, M., Chein, J., Richeson, J., Heller, A., Silverman, M., Dellarco, D., Fair, D., Galván, A., & Casey, B. (2016). When Is an Adolescent an Adult? Assessing Cognitive Control in Emotional and Nonemotional Contexts. *Psychological Science* 27(4), 549-62. doi: 10.1177/0956797615627625.; Cohen, A. & Casey, B. (2014). Rewiring Juvenile Justice: The Intersection of Developmental Neuroscience and Legal Policy. *Trends in Cognitive Sciences*, 18, 63–65. <https://doi.org/10.1016/j.tics.2013.11.002>
- ³⁸ On March 11, 2021, the Washington State Supreme Court overturned mandatory life without parole sentences for 18- to 20-year-olds on the grounds that it constituted cruel and unusual punishment, citing developments in neuroscience and “evolving standards of decency.” See *In re Pers. Restraint of Monschke*, 96772-5 (Wash. 2021). Their ruling requires individuated sentencing, as the U.S. Supreme Court held in its decisions prohibiting mandatory life without parole for those younger than 18. See also PLSE's first report at p. 17.
- ³⁹ See Brief for the American Psychological Association, American Psychiatric Association, and National Association of Social Workers as Amici Curiae in Support of Petitioners, *Miller v. Alabama*, 567 U.S. 460 (2012). & *Jackson v. Hobbs*, 181 L.Ed 2d 395 (2011) (Nos. 10-9646, 10-9647), <https://www.apa.org/about/offices/ogc/amicus/miller-hobbs.pdf>.
- ⁴⁰ *Miller v. Alabama*, 567 U.S. 460 (2012).
- ⁴¹ Steinberg, L. (2008). A Social Neuroscience Perspective on Adolescent Risk-taking. *Developmental Review* 28(1), 78-106. <https://doi.org/10.1016/j.dr.2007.08.002>; Arain, M., Haque, M., Johal, L., Mathur, P., Nel, W., Rais, A., Sandhu, R. & Sharma, S. (2012). Maturation of the Adolescent Brain. *Neuropsychiatric Disease and Treatment*. 9, 449-61. <https://doi.org/10.2147/NDT.S39776>
- ⁴² See PLSE's first report *Figure 6*, at p. 16.
- ⁴³ One unexplored implication from this finding is the role that being prosecuted in a group may have on the court process, such as the influence on plea bargaining decisions and whether the likelihood of conviction changes based on group prosecution.
- ⁴⁴ Deviate sexual intercourse by force or threat of force and/or rape.
- ⁴⁵ 18 Pa.C.S. § 2502(b).
- ⁴⁶ 18 Pa.C.S. § 2502(d).
- ⁴⁷ 94 out of the 591 dockets for Black people and 15 out of the 72 dockets for Hispanic/Latinx people listed multiple qualifying felony conviction types, compared to 27 out of the 95 dockets for White people.

⁴⁸ The availability of qualifying felonies varies based on the availability of located dockets and the completeness of a particular data point on each located docket due to original record-keeping by the courts and/or migrated data. See Appendix at p. 21.

⁴⁹ 18 Pa.C.S. § 2502(a).

⁵⁰ 18 Pa.C.S. § 2502(b).

⁵¹ 18 Pa.C.S. § 2502(c).

⁵² For a summary of previous research on racial disparities related to the felony murder rule and the death penalty, see Albrecht, K. (2020). Data Transparency & The Disparate Impact of the Felony Murder Rule. *Duke Center for Firearms Law Blog*. This source notes that previous research has suggested that Black people are much more likely to be charged with felony murder if the victim is White.

⁵³ See *supra* at n. 7, at pp. 34.

⁵⁴ It is worth noting that the data from Allegheny County is less complete (74.0%) than for Philadelphia (96.7%) and is known for even fewer White people (56.5%) within that population, raising the possibility that this finding is less representative of the population overall.

⁵⁵ Plea bargaining rates for Hispanic/Latinx people convicted of arson, kidnapping, and sexual offenses are for a sample size of two people each and may therefore not be representative.

⁵⁶ For a deeper discussion on the role of the death penalty and plea bargaining, see PLSE's first report, *supra* at n. 7, at pp. 41.

⁵⁷ See Yan, S. (2020). What Exactly Is the Bargain? The Sensitivity of Plea Discount Estimates. *Justice Quarterly*, doi: 10.1080/07418825.2019.1707856.

⁵⁸ For one example, see Albrecht, K. (2020). Data Transparency & The Disparate Impact of the Felony Murder Rule. *Duke Center for Firearms Law Blog*. Available at: <https://firearmslaw.duke.edu/2020/08/data-transparency-the-disparate-impact-of-the-felony-murder-rule/> (Accessed March 10, 2021).

⁵⁹ <https://ujportal.pacourts.us/>

⁶⁰ The AOPC website maintains Pennsylvania's Unified Judicial System, a free website that allows the public to access court dockets, court summaries, and other information related to the court process. Some information from these dockets may be either partially or fully migrated, archived, sealed, or otherwise expunged, yielding somewhat different sample sizes based on analyzed metrics. Matched court dockets needed to include at least one murder conviction but did not need to specify "murder of the second degree" due to inconsistencies in charging of second-degree murder and coding by court clerks by jurisdiction over time.

⁶¹ The AOPC website lists general statistics on migrated data by county:

<https://ujportal.pacourts.us/RefDocuments/CPCMSCaseLoad.pdf>.

⁶² The full data collected and reviewed by the audit include the following categories of information: date of birth; committing county; race; assigned sex; sentence date; reception date; information from dockets from Court of Common Pleas, including offense date, arrest date, number of charges, each murder charge and result, contextual felonies, whether the conviction was by trial or plea agreement; and linked co-defendant(s) docket information, including any murder charge(s) and result(s), their highest penalty for a murder conviction if applicable or the highest penalty for a non-murder-conviction, and whether the conviction was by trial or plea agreement. Murder charges were coded for the following statutes: 18 § 2501 §§ A, 18 § 2502 §§ A, 18 § 2502 §§ B, 18 § 2502 §§ C, 18 § 2503 §§ A1, and 18 § 2504 §§ A. Notably, 18 § 2504 §§ A, voluntary manslaughter, does not constitute a crime of violence under 37 Pa. Code § 81.202. Felonies were recorded and coded for the following statutes: Robbery (18 § 3701 §§ A1 I-IV, 18 § 3701 §§ A2, and 18 § 3702 §§ A); Burglary (18 § 3502 §§ A); Homicide (18 § 2503 §§ A1, 18 § 2504 §§ A, 18 § 2603 §§ A); Sexual Offenses (18 § 3121 §§ A1, 18 § 3121 §§ A3, 18 § 3121, 18 § 3121 §§ 2, 18 § 3121 §§ 6, 18 § 3122.1, 18 § 3123, 18 § 3123 §§ 1, 18 § 3123 §§ 2, 18 § 3123 §§ 5, 18 § 3123 §§ A6, 18 § 3124.1, 18 § 3125 §§ 1); Kidnapping (18 § 2901, 18 § 2901 §§ A1-3); and Arson (18 § 3301, 18 § 3301 §§ A11-II, 18 § 3301 §§ A2).

⁶³ I.e., If there is a large difference between the percentage of the population where a variable is known and the total subsection of that population, then conclusions drawn from the data may be less likely to be representative of the population overall.