Age, Criminal Punishment, and Accountability: What the Public Recommends for Guilty Defendants

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Abstract

This paper assesses the effect of a defendant's age on public perceptions of recommended punishment, accountability, and the likelihood of reoffending. We use an experimental vignette design which describes a robbery and varies the robber's age from 15 to 25. Respondents were asked to recommend a prison sentence and a restitution amount, the accountability of the robber, and the likelihood of reoffending. Overall, there was no significant effect of age on recommended prison sentence but a significant increase in recommended restitution as age increased. Female respondents recommended significantly longer prison sentences while male respondents recommended significantly higher restitution amounts for older defendants. Results were not significant for accountability or likelihood of reoffending. Implications and suggestions for future work are discussed.

Keywords: Age-crime curve, Juvenile justice, Restorative justice, Public opinion, Age of majority

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1 Introduction

Since the turn of the century, there have been several prominent changes in the criminal justice system that have reduced the severity of penalties for youth convicted of crimes. In 2005, the United States Supreme Court ruled in the Roper v. Simmons case that the death penalty given to people who committed a crime when they were under 18 years of age was unconstitutional (Greenhouse, 2005; Bravin, 2005; Lane, 2005). In the ensuing 15 years, a number of state and federal laws and Supreme Court decisions have loosened the penalties for criminal offending for those who were juveniles at the time they committed a crime (Chabria, 2020; Cohen & Casey, 2014; Justice Policy Institute, 2017). As a result of the 2010 Graham v. Florida Supreme Court case, life in prison without the possibility of parole was deemed an unconstitutional punishment for juveniles found guilty of all crimes except for homicide; in 2012, the homicide exception was removed due to the Miller v. Alabama court decision. Along with these judicial changes, several states have raised the age of criminal majority to age 18 (Justice Policy Institute, 2017; Loeffler & Chalfin, 2017; Loeffler & Grunwald, 2015). Before these new policies were enacted, 16- and 17-year-old defendants in those states were automatically tried as adults for certain crimes; with the implementation of the new policies, these offenders are now typically tried as juveniles and are only transferred to adult court when they are charged with a serious offense or have been processed in adult court previously (Teigen, 2020).[1]

These judicial decisions and legislative changes are important because they affect the age range which accounts for a disproportionately large share of criminal offenders (Farrington, 1986; Hirschi & Gottfredson, 1983; Moffitt, 1993). Although precise estimates differ, the relationship between age and crime - formally known as the age-crime curve - shows that the number of crimes people commit begins to spike in early adolescence, peaks in the late teenage years, and then declines sharply shortly thereafter (Farrington, 1986; Hirschi & Gottfredson, 1983; Moffitt, 1993). The age-crime curve is a core pillar of the field and has been studied extensively across crime categories (Klausen et al., 2016; Zhong, 2005), personal characteristics (Shulman et al., 2013; Stolzenberg & D'Alessio, 2008), and in a number of countries outside of the United States (Matthews & Minton, 2018; McVie et al., 2005; Steffensmeier et al., 2017; Wikström, 1990). In fact, criminologists have recognized the relationship between age and crime since the 1800s (Quetelet, 1831).

There are several mechanisms that are thought to drive the shape of the age-crime curve and explain why teenagers commit more crime than children and adults. There are social, psychological, and environmental changes that occur as individuals mature from childhood to adolescence, which can affect involvement

in certain behaviors, including crime (Moffitt, 1993; Steinberg & Monahan, 2007; Thornberry & Krohn, 2001). One such change is that teenagers have more freedom than ever before and form closer bonds with their peers than younger children do which allows them to have more time to commit crimes as well as be peer-pressured into engaging in risky behavior (Costello & Laub, 2020; Hirschi, 2002; Laub et al., 2017). When individuals get older, graduate high school, or move away from home around age 18, they establish new peer networks, learn from previous mistakes, and focus more on future goals which contributes to their desistance from criminal behaviors (Laub & Sampson, 2001; Sampson & Laub, 1992; Sweeten et al., 2013).

Another reason why young people commit crime at higher rates than older people is because their brains are still developing, and therefore, they do not have full planning and decision-making capacity (Chabria, 2020; Harty, 2017; Smith, 2017). Although juveniles have a basic sense of right and wrong, they are vulnerable to coercive influences that can impair their decision-making (Steinberg & Scott, 2003). In fact, research shows that the prefrontal cortex - the part of the brain responsible for planning and decision-making - does not fully mature until the mid-20s (Cohen & Casey, 2014; Cohen et al., 2016; Ortiz, 2003; Steinberg, 2017). Consequently, it may be more difficult for young people to plan ahead and control their impulses especially when they are emotionally aroused (Bala & Hyden, 2020; Steinberg & Scott, 2003). Due to the fact that they have under developed brains, young people also exhibit an increased susceptibility to peer pressure, increased sensitivity to social evaluation, and increased sensitivity to rewards (e.g., peer approval, monetary rewards, etc.) compared to older adults (Albert et al., 2013; Brown, 2011; Brown & Larson, 2009; Scott & Steinberg, 2008; Somerville, 2013). After the prefrontal cortex reaches maturity in early adulthood, the urge to partake in risk taking and stimulating behavior typically subsides and the capacity for emotional and cognitive control increases (Ritter, 2007).

While brain development might increase youth proclivity to offend, it cannot explain the shape of the age-crime curve by itself. While the brain does not reach full maturity until around age 25 (Cohen & Casey, 2014; Cohen et al., 2016; Ortiz, 2003; Steinberg, 2017), crime peaks in the late teenage years (Farrington, 1986; Hirschi & Gottfredson, 1983; Moffitt, 1993). One partial explanation is that the level of maturation during the early 20s may be sufficient to cause people to reduce their propensity for offending, even as their brain continues to develop. Another reason why people start to desist from crime before their brain is fully matured is because they often experience life changes such as graduating from high school and moving away from home which causes them to develop new peer networks and shift their priorities away from crime (Laub & Sampson, 2001; Sampson & Laub, 1992; Sweeten et al., 2013). Even though crime

declines around this time, young adults in their late teens and early to mid-20s still have limited planning and decision-making capacity and are more prone to criminogenic influences than older adults. Knowledge of the brain's incomplete development - and that the brain will fully develop within the next decade - has been influential in changing laws across the United States to reduce the penalties for young offenders.

While policy changes and empirical research regarding the age-crime curve and neurological development are important when considering the best ways to approach young people who commit crime, it is unclear what the public believes regarding the punishment and responsibility of young offenders. Overall, people are uninformed about the nature of the criminal justice system (Pickett, 2019), so the public might not have the same views as lawmakers and researchers on this topic. The results of past studies suggest that, in general, people believe that younger offenders are less deserving of harsh punishments than older offenders (Warling & Peterson-Badali, 2003; Scott et al., 2006; Walker & Woody, 2011; Ellis et al., 2018). However, other studies find that age does not predict punishment recommendations (Semple & Woody, 2011; Camilletti & Scullin, 2012). One limitation with past research is that age is not continuous or inclusive. Instead, age is often broken down into a few years – for example, 12, 15, and 20 – which makes it difficult to explore if people think offenders become more criminally responsible or deserving of harsher punishments at a specific age. Furthermore, these studies rarely ask about punishments for offenders in their mid-20s, who have greater decision-making capacities than their younger peers. Lastly, past research only asks about punishment recommendations broadly and does not ask participants to recommend specific punishments. The current study addresses these gaps by randomly assigning the age of a defendant for a violent robbery to be 15 through 25 (inclusive) and assessing public perceptions of recommended punishment, accountability, and the likelihood of reoffending.

1.1 Past Research Regarding Age and Public Perceptions of Criminal Responsibility and Punishment

Past research has found that the age of young defendants plays an important role in public perceptions of criminal responsibility and punishment recommendations, with younger defendants deemed less responsible – and deserving of more lenient penalties - than older defendants for the same crime (Ellis et al., 2018; Gongola et al., 2017; Scott et al., 2006; Steinberg & Piquero, 2010). Scott et al. (2006) asked respondents to make recommendations for criminal punishments after watching a video clip that depicted an armed robbery. Defendant age in this study was randomized as 12, 15, or 20. Results found that participants endorsed the view

that juvenile defendants should be treated differently than adult defendants and that the younger a defendant's age, the less likely it was that he should be tried in adult court because younger individuals are more developmentally immature than older individuals. Similarly, Steinberg & Piquero (2010) found that their sample of 2,282 American adults supported juveniles being tried as adults significantly more if the juveniles were older, committed a more serious offense (rape over theft), and were repeat offenders compared to a similarly-situated comparison group. Gongola et al. (2017) assessed the degree of support for a sentence of life in prison without the possibility of parole (LWOP) for 12- and 16-year-olds who were found guilty of homicide. They found that a greater percentage of participants endorsed LWOP for the 16-year-old than for the 12-year-old but did not approve of this sentence for juveniles overall.[2] Ellis et al. (2018) examined the results of 72 interviews and 502 survey responses from adults in Australia responding to an aggravated robbery case and found that respondents recommended less punitive punishments for defendants who were depicted as being younger and who had no prior criminal record. Further, participants were significantly more likely to recommend harsher sentences for defendants if they were carrying a weapon on their person at the time of their arrest.

Past research has also found that jury members' and jury-eligible populations' decisions are also influenced by the age of young defendants (Camilletti & Scullin, 2012; Semple & Woody, 2011; Walker & Woody, 2011; Warling & Peterson-Badali, 2003). Warling & Peterson-Badali (2003) recruited two samples of adults eligible to serve on a jury in Toronto, Canada - one university sample and one public sample - to serve as mock jurors. These study participants read copies of a trial in which the defendant was accused of committing second-degree murder and was written as being 13, 17, or 25 years old. The results of the study indicate that defendant age did not have a statistically significant effect on verdict decisions but did have a significant effect on sentencing decisions: younger defendants were given shorter sentences than older defendants. Similarly, Walker & Woody (2011) recruited over 300 U.S. undergraduate psychology students to serve as mock jurors. These mock jurors were presented with facts from criminal cases against persons and property and were instructed to come up with a verdict and sentencing decision for a 24-year-old adult defendant and 14-year-old juvenile defendant being tried as an adult. Results show that the defendant's age did not affect jurors' verdicts, but jurors were more likely to recommended longer sentences for the 24-year-old defendant than for the 14-year-old defendant. Another study done by Semple & Woody (2011) is similar in nature to the last two studies but yielded different results. Here, 308 undergraduate psychology students were randomly separated into four groups and read the same summary of a trial for a second-degree murder, but the defendant's age differed and was presented as 13, 15, 17, or 21 years old. The students acted as mock jurors and were asked

to present their verdicts and, if guilty, to suggest sentences for the person accused of committing the offense. Results found that although 13- and 15-year-old defendants were convicted less often than the two older groups of defendants, defendant age did not significantly affect sentencing suggestions. Camilletti & Scullin (2012) found that a sample of 30 attorneys and 47 undergraduate students who served as mock jurors believed that a juvenile offender's young appearance would reduce jurors' ratings of criminal culpability. However, when they asked another sample of 193 undergraduate students to decide a verdict based on defendant appearance, they found that verdicts were not affected by a juvenile's youthful appearance.

While past studies are able to provide insight about public perceptions of young offenders and the punishments they deserve broadly, there are a few important limitations to mention. First, these studies randomize age to be one of only a few select years rather than a continuous set of years. This makes it impossible to evaluate if people think offenders become more criminally responsible or deserving of harsher punishments at a specific age, say 16, 18, or 21. As policies on the age of criminal majority are based on discrete cutoffs, though with exceptions for particular offenders, being able to determine if the public believes that there is a certain age of increased responsibility for a crime would be a contribution to knowledge on this topic. Additionally, these studies rarely ask about punishments for offenders through their mid-20s when the prefrontal cortex fully develops. Though modern juvenile justice legislation often considers people to be adults around 18, research in neuroscience indicates that people do not have full decision-making capacities until about age 25 (Cohen & Casey, 2014; Cohen et al., 2016; Ortiz, 2003; Steinberg, 2017). A third limitation of past studies on this topic is that they often do not ask respondents to recommend a certain punishment for the accused criminal, such as time in prison or restitution amounts. Instead, participants are asked to recommend one of several broad punishments for the offender, such as a community sanction or prison sentence. This limits the precision of people's beliefs on these outcomes and may mask subtle differences that people could make in recommended punishment if given the opportunity.

One more factor to consider regarding public recommendations of punishment in particular is that, on average, men are more punitive than women (Moon et al., 2000; Gault & Sabini, 2000; Carll, 2017; Ellis et al., 2018), especially when focusing on young offenders (Sprott, 1999). To the authors' knowledge, only one study assessing public perceptions on punishment by offender age finds that results are significant by respondent gender (Scott et al., 2006). Most previous studies on this topic do not assess gender differences in recommended punishment (Walker & Woody, 2011; Camilletti & Scullin, 2012; Gongola et al., 2017; Ellis et al., 2018) With this in mind, and given that men are more punitive than women overall, the

current study examines if public perceptions of punishment by defendant age differs by respondent gender.

1.2 Current Study

The current study expands on past research and addresses gaps in the literature regarding the effect of defendant age on public perceptions of sentencing by examining two possible mechanisms. In particular, we evaluate how defendant age affects respondent perceptions of how accountable the individual is and how likely he is to commit another crime in the future. If respondents believe that people are both more responsible and more likely to commit similar crimes in the future, that could explain why past research has found that older individuals are recommended harsher sanctions. Past research on public opinion on punishment has found that men are generally more punitive than women, especially when it comes to older defendants (Sprott, 1999; Moon et al., 2000; Gault & Sabini, 2000; Carll, 2017) so we also examine recommended punishment outcomes for male and female respondents separately.[3]

This paper uses an experimental vignette survey to evaluate public perceptions of the accountability and desired punishment of defendants – randomly assigned to an age from 15 through 25 (inclusive) – who were found guilty of committing a robbery. We use this age group because it includes the ages at which the age-crime curve would suggest criminal behavior peaks (approximately 15-19 years old) as well as the ages at which the brain fully develops (through approximately age 25). Respondents in our study were asked to recommend a prison sentence (in years) and restitution amount (in dollars) for the defendant. Based on previous research which finds that young people are seen as less culpable and less deserving of harsh penalties, we have three hypotheses.

1. Participants will recommend stricter penalties for older defendants and deem them more accountable than younger defendants.
2. Male respondents will be more punitive than female respondents.
3. Participants will think that younger defendants are more likely to recidivate than older defendants.

2 Method

This study used an experimental vignette design which provided each respondent with a written depiction of a violent robbery, varying only the age of the robber. Robbery is a serious violent crime that leads to a prison sentence in most cases, thus making it a suitable choice for the vignette (Reaves, 2013). The vignette was

a modified version of a vignette designed by Mendelsohn & Sewell (2004). In the modified vignette, a man named Bob is walking to his car when he is approached by a young man who begins insulting him.[4] The young man takes out a knife, drags Bob into an empty alley, and threatens to kill Bob unless he gives up his phone and wallet. The robber then flees the alley but is quickly arrested and convicted of robbery. The age of the robber was provided in the vignette and was randomly assigned to an age between 15 and 25 (inclusive). No other text was changed among the different vignettes, which allowed for an analysis of the effect of defendant age, keeping all else constant. While past studies have included descriptions of the defendant's physical appearance or other indicators of the individual's perceived maturity (Scott et al., 2006), we preferred to only include the person's age (describing him only as an "[AGE]-year-old male") so we could evaluate the average effect of an individual's age without having respondents consider physical appearance. Therefore, the results of this study should be interpreted as the average effect of age, with other important factors such as apparent physical or emotional maturity not included, but likely relevant for actual decisions when people recommend punishments. Given past research that has found that the wording of surveys about criminal justice topics can affect results (Steinberg & Piquero, 2010), we provide the complete text of the vignette used below:

> Bob is walking to his car after running some errands. He is approached by a[AGE]-year-old male, named Matt, who begins verbally insulting him. Bob walks quickly toward a busy intersection but Matt catches up with him. Matt suddenly pulls out a knife and roughly pushes Bob into a deserted alley. Matt shoves Bob up against a wall, holds the knife to Bob's throat, and threatens to kill him if he does not hand over his wallet and phone. Bob can feel the blade of the knife pressing against his skin as he reaches for his wallet and phone and gives them to Matt. After grabbing the possessions, Matt pushes Bob to the ground and runs off. Then Bob runs to a nearby convenience store and uses the phone to call the police. The police locate Matt a few blocks away from the alley, who is still holding Bob's possessions, and arrest him. A few months later, Matt is found guilty of robbery by a court of law.

Following the vignette, respondents were told that they are members of the jury which convicted the robber and must make a recommendation to the judge for the appropriate punishment. There were two questions relating to punishment. First, they were asked how many years they recommend the defendant be sentenced to prison for, with a limit of between 0 and 99 (inclusive) years. The second question stated that "in addition to time in prison, the defendant can also be forced to pay restitution, which is money

paid to the victim of the crime to 'right the wrong' of the crime." To avoid the potential of extreme outliers, answers were restricted to between $0 and $99,999 (inclusive). For each question we used OLS regression to examine the effect of defendant age on the outcome. While our experimental methods reduced the impact of any variable other than the randomized defendant age from affecting results, we included a vector of respondent demographics as control variables to increase precision (Angrist & Pischke, 2008; Imbens, 2010).

While the questions on punishment evaluated what effect - if any - defendant age had on the recommended penalty for the crime, they did not provide insight into why a defendant's age affects respondent's desired punishment. To examine two potential mechanisms, we asked two questions on how accountable the defendant is and how likely he is to reoffend. Specifically, we asked how "accountable do you think the defendant is for the crime?" with the options: Very unaccountable, Somewhat unaccountable, Somewhat accountable, and Very accountable. To examine whether respondents believed that likelihood of reoffending differs by defendant age, we asked how likely it is that the defendant will "commit a similar crime in the future?" The possible choices are: Extremely unlikely, Somewhat unlikely, Neither likely nor unlikely, Somewhat likely, and Extremely likely. We used ordinal logistic regression to analyze how defendant age affects the likelihood of choosing each answer.[5]

2.1 Participants

Respondents for this study were recruited from Amazon's Mechanical Turk, a website where people can take surveys in exchange for small amounts of money. Mechanical Turk is becoming a popular platform for academic research and is increasingly being used in social science research, including criminology research (Herzog, 2003; Berryessa et al., 2016; Buckley et al., 2016; Berryessa, 2017, 2018; Kaplan et al., 2020; Ling et al., 2020; Kaplan & Chalfin, 2020; Barnum et al., n.d.). MTurk samples generally produce consistent and reliable results that are similar to national samples (Paolacci et al., 2010; Berinsky et al., 2012; Goodman et al., 2013; Paolacci & Chandler, 2014; Bartneck et al., 2015; Buhrmester et al., 2016) - though in some cases these results differ in the magnitude of effect sizes compared to nationally-representative samples (Thompson & Pickett, 2019). However, these samples often differ in some key demographic groups. MTurk samples are generally Whiter, better educated, poorer, and more female than the general public (Paolacci et al., 2010; Heen et al., 2014; Dunbar & Kubrin, 2018).

The survey used in this study was approved by the university's Institutional Review Board and all respondents read a description of the study and consented to participate. The survey collection began

on May 31st and ran continuously until June 19th, 2020. As the survey was active continuously over the collection period, respondents could only do the survey once.[6] On average, respondents took approximately five minutes to complete the survey. Respondents were required to answer every question. We limited our sample to people age 18 or older who live in the United States.

In total, 2,189 people completed the survey. To ensure that respondents were reading the questions before responding, we used two attention checks and excluded anyone who failed either check. First, respondents were informed of the purpose of the study on the first page after they consented to be part of the study, and then were asked what that purpose was.[7] If a respondent chose any answer other than "Punishment for a crime" they were considered to have failed the attention check.[8] One hundred fifty-three respondents failed this attention check. After this question respondents were shown the vignette, which described a robbery and stated explicitly that the defendant in the scenario was convicted of robbery. They were then asked which crime the defendant was charged with and were determined to have failed the attention check if they choose an answer other than "Robbery."[9] One hundred eighteen respondents failed this second attention check.[10] In total, 271 respondents - or about 12.4% of the original sample - failed attention checks and were removed from the study, leaving 1,918 respondents in the sample.

For each demographic variable included in this study, Table 1 shows the number of respondents for that group and what percent of the sample that group makes up. Respondent demographics were relatively similar to that of the United States at-large. Respondents were, on average, 36.74 years old (median = 34). Respondents were more likely to be female (59.49%) than male (40.41%) or a gender other than female or male (0.10%) and our sample had more female respondents than in the general population (50.8%).[11] Respondents were primarily non-Hispanic White (72.42%) with 10.11% identified as non-Hispanic Asian or Pacific Islander, and 9.80% identifying as non-Hispanic Black. The remaining respondents identified as "Other" race (3.28%), two or more races (3.13%), or American Indian or Alaska Native (1.25%). 12.46% of respondents identified as Hispanic while the remaining 87.54% identified as non-Hispanic. Relative to the U.S. population at-large, respondents in this sample were more likely to be non-Hispanic White (60.0% in U.S.), less likely to be Hispanic (18.4% in U.S.), more likely to be non-Hispanic Asian or Pacific Islander (5.6% in U.S.), and less likely to be non-Hispanic Black (12.4% in U.S.)[12] Our sample had slightly more high school graduates than the U.S. population with 90.62% of respondents having a high school education or higher (88.0% of the U.S. as a whole). The present sample had a much larger percent of college graduates than the U.S. as a whole with 59.23% of the sample having a four-year college degree or higher compared

to 32.1% of the U.S. population. Respondents are similar in household income to the United States as a whole, which in 2019 had a median household income of slightly over $62,000. In the current sample, 54% of respondents had a household income of under $60,000 while 46% had a household income of over $60,000.

3 Results

3.1 Descriptive Statistics

Figure 1 shows the average recommended prison sentence (Panel A) and recommended restitution amount (Panel B) for each defendant age included in the study. The horizontal line shows the average recommended sentence while the error bars show the 95% confidence interval. The youngest age in our sample - age 15 - had the lowest recommended years of prison at less than six years. As the defendant's age increased, respondents recommended increasingly long prison sentences until about eight years of prison time was recommended in the early 20s. The 95% confidence intervals show that while this trend continued upward as age increased, all ages were within the confidence interval of other ages, suggesting that the difference was not statistically significant. As shown in Panel B, the youngest respondent age had the lowest recommended restitution at about $8,000 with the overall trend being an increase in recommended restitution as defendant age increases until peaking at age 23 and declining for ages 24 and 25. As with recommended prison sentence, this trend, though increasing overall, showed each age within the confidence interval of other ages, suggesting that the difference between ages was not statistically significant.

To examine these trends in more detail, Table 2 shows the mean, median, and modal response for these two outcomes at every respondent age. Column 1 shows the defendant age while columns 2-4 show the mean, median, and model response, respectively. Panel A shows the recommended prison sentence and for every year the most common recommended prison sentence is five years. The median response is also five years for all ages except for the youngest age, 15, suggesting that age does not affect the median recommended prison sentence for ages 16 and up. The mean results, which are also shown in Figure 1, indicates a slight increase in recommended prison sentence as the defendant's age increases. The median restitution amount, as seen in Panel B, increases from a low of $1,200 for 15-year-olds to a high of $5,000 at age 20 and remains at $5,000 for every subsequent age. Unlike Panel A, the modal amount is relatively inconsistent but suggests that people are more consistently recommending higher restitution amounts

for older defendants than younger ones.[13] For five of the six earliest ages, the modal restitution amount was $1,000 or lower; after age 20, the modal restitution amount was $5,000 or $10,000.[14]

3.2 Regression Results

To examine if the descriptive findings are statistically significant or if there are differences by respondent gender, Table 3 shows the results of an OLS regression that estimated the effect of defendant age on recommended prison sentence (Panel A) and restitution amount (Panel B), controlling for respondent demographics. For each panel, column two shows results for all respondents, column three shows results for female respondents, and column four shows results for male respondents. Row two of each panel gives the robust standard errors of $\hat{\beta}$ while row three shows the 95% confidence intervals and row 4 shows the p-value. The final row indicates the average number of recommended years in prison (Panel A) and dollars of restitution fees (Panel B) for each group.

In row one of Panel A, the coefficient $\hat{\beta}$, shows the recommended increase in years in prison for each additional year of defendant age. This coefficient has a value of 0.164, indicating that for each additional year of defendant age respondents recommended an additional 0.164 years (1.97 months; 95% CI = [-0.008, 0.335] in years) of prison sentence. This result was not statistically significant for the overall sample (p = 0.062). Given the mean prison years of 7.51, each additional year of defendant age was related to a 2.18% increase in time in prison. When considering the 11-year difference between our youngest age (15) and our oldest age (25), the effect is relatively large, an additional 1.804 years of prison or 24.02% more time incarcerated. Columns three and four of Table 1 show the results broken down by female and male respondents, respectively. There were differences in recommended sentences by respondents' gender, with female respondents recommending a statistically significant (p-value = 0.001) additional 0.270 years (3.24 months; 95% CI [0.099, 0.441] in years) in prison for each additional year of defendant age, while males recommend a non-significant 0.023 years (0.28 months) of prison.

Panel B shows the effect of each additional year of defendant age on the recommended amount of restitution. The coefficient in column two, row one of Panel B has a value of 389.706, indicating that for each additional year of defendant age respondents recommended an additional $389.706 dollars (95% CI = [55.730, 723.682]) of restitution. This result was statistically significant (p = 0.022). Given the mean restitution amount of $11,410.57, each additional year of defendant age was related to a 3.42% increase in restitution. When considering the 11-year difference between our youngest age (15) and our oldest age (25),

the effect is relatively large, an additional $4,286.77 of restitution or a 37.57% increase. Similar to Panel A, columns three and four of Panel B show the results based on respondents' gender. There are differences in recommended restitution by gender, with male respondents recommending a statistically significant (p = 0.017) additional $499.860 (95% CI [89.968, 909.752]) in restitution for each additional year of defendant age and females recommending a non-significant $367.912 of restitution. These results suggest that the significant restitution-related findings from the complete sample were driven by male respondents.

To evaluate two possible mechanisms of why age would affect recommended sanctions, we used an ordinal logistic regression to estimate the effect of defendant age on perceptions of accountability and the likelihood that the defendant would commit a similar crime in the future. Table 4 shows the results of these regressions. Row three of this table shows the exponentiated $\hat{\beta}$ coefficient, or the odds ratio (OR) which is the odds of choosing a higher category relative to a lower one for each one unit increase in defendant age. For these analyses, a higher category corresponds to saying the defendant is more accountable or more likely to reoffend while a lower category is less accountable or less likely to reoffend. Column two shows the effect for defendant accountability and shows that each additional year of defendant age is related to a 1% decrease in the odds of choosing a higher category than a lower category, though this result is not statistically significant (OR = 0.990, p-value = 0.532).[15] Column three shows the result for how likely the defendant will reoffend and shows that each additional year of defendant age has a non-significant 0.005% increase in the odds of choosing a higher category relative to a lower one (OR = 1.0005, p-value = 0.968).[16] When subsetting by respondent gender, results remained non-significant (results not shown).

4 Discussion

The findings of the current study reveal that age is not significantly related to perceptions of defendants' accountability or their likelihood of reoffending. Additionally, respondents' gender influenced the extent to which defendant age was associated with punishment decisions. In contrast to prior studies, we do not find support that younger defendants are perceived as less accountable than older defendants (Ghetti & Redlich, 2001; Scott et al., 2006). This suggests that the respondents believe that 15- to 25-year-olds are generally able to understand right from wrong and can recognize wrongful behavior, and thus should be held responsible for their actions. However, this finding may also be due to characteristics of the vignette itself, as the defendant was described as being proactive committing the crime (e.g., approaching the victim, pushing the victim into

deserted alley, using a knife, etc.) and these characteristics did not vary by vignette. Thus, respondents may be attributing levels of accountability based on characteristics of the crime itself rather than the defendant's age. Given the nature of the crime depicted - a violent robbery - it is unclear if respondents would judge defendant accountability differently in the case of a less serious offense. Future studies should examine this question using less serious crimes and different case circumstances, such as varying defendant race, ethnicity, and gender.

Using the total sample, the relationship between defendant age and punishment severity was somewhat inconsistent, with non-significant effects for recommended prison time and a significant increase in recommended restitution. This could suggest that although respondents believe defendants should be held responsible for their actions, they still recognize that sanctions should be developmentally appropriate. The inconsistent finding may, in part, be due to the gender difference that emerged from the results on recommended punishment. Specifically, female respondents recommended a longer sentence for older defendants while there was no significant effect of defendant age on sentence length for male respondents.[17] On the other hand, male respondents recommended higher restitution amounts for older defendants while female respondents did not recommend a significantly different restitution amount based on defendant age.[18]

The differences between genders for recommended punishments might be related to gender-related perceptions of vulnerability. Specifically, studies have suggested that women are more likely to feel vulnerable, which could lead them to be more punitive (Hurwitz & Smithey, 1998; Mills, 1980; Pierce & Harris, 1993). Female respondents in past research have reported greater fear - and taken more precautions to reduce their likelihood of victimization - than male respondents, even though women are victimized less than men, possibly due to belief among female respondents that rape could co-occur alongside any other crime (Dobbs et al., 2009; Jennings et al., 2007; LaGrange & Ferraro, 1989; Charles & Meeker, 2003; Pain, 1991).[19]

However, the current findings do not support past research on gender differences in the public's desires and recommendations for punishment (Ellis et al., 2018; Hough et al., 2013). While female respondents recommended longer prison, and thus more punitive sentences in this study, prior studies find that females are generally less punitive than males (Moon et al., 2000; Gault & Sabini, 2000; Carll, 2017; Ellis et al., 2018). Furthermore, past research regarding how defendant age influenced jury decisions did not find significant effects by respondent gender (Semple & Woody, 2011; Warling & Peterson-Badali, 2003). The gender differences found in the current study could have been due to the fact that participants were only asked about how long prison sentences should be, and not about other options for punishment such as probation, community service, or diversion programs. Female respondents might be more likely

than male respondents to recommend longer prison sentences as a reflection of their fear of victimization because people in prison cannot commit crimes against people who are not in prison. However, female respondents might not be as likely to recommend extensive probation conditions or community service hours because those punishments will not promise protection against victimization as people sentenced to these punishments are still active and free to move about their respective communities. Whether these gender differences still exist for probation or community service as outcomes should be explored in later research.

Additionally, this study evaluated punishment as the length of time that the defendant should be incarcerated for and how much restitution the defendant should pay. However, these questions limit the possible outcomes for a person convicted of a crime. In the current United States criminal justice system, there are other outcomes that individuals can face, such as mandatory mental health programs (e.g. anger management) and forms of restorative justice with the victim, which can still hold individuals accountable while using less punitive sanctions (Sered, 2011).[20] Future research should expand the possible sentence outcomes they ask of respondents beyond merely incarceration time and restitution to evaluate perceptions on a broad range of possible sentencing decisions. Furthermore, while the current study was specifically interested in the effect of offender age on punishment outcomes, there are other relevant factors, such as prior record, that could influence the sentence that is given to an offender. As such, future studies should consider varying legal and extralegal factors independently and in combination to determine how these elements affect punishment outcomes.

Moreover, it is unclear how much the possibility of collateral consequences for the defendant was considered when making their sanctions choices, if at all. If respondents believed that older people already had a criminal history and thus would not be impacted as much by collateral consequences, it could lead them to recommend stricter sanctions for older people who they believe would not get the added penalty of new collateral consequences. As this study did not evaluate knowledge or consideration of collateral consequences directly, future studies should evaluate how defendant age affects how likely respondents are to recommend these kinds of sanctions, and how knowledge of collateral consequences affect decisions.

Although our results provide some insight into current public perceptions related to sentencing outcomes based on defendant's age, we do not know how age-related sentencing policies drive public opinion. Research has found that the environment can, in part, influence people's opinions (Bickhard, 1992; Moussaïd et al., 2013). One possible explanation is that because there has been an established juvenile justice system since the 19th century, people may assume that younger defendants should be given less serious penalties than older defendants without providing a reason for their opinions (Ferdinand, 1991; Pratt, 1986). It

is also unclear whether research on the age of brain maturation affects people's perceptions of punishment, and if this age - around the mid-20s - is an important milestone in perceptions of sanctions. It could be that most people are not aware of this research and therefore, do not know that the brain continues to mature past the teenage years.

In general, the American public is not well informed about that nature of the criminal justice system nor do they hold accurate perceptions of crime trends (Pickett, 2019; Gramlich, 2016, 2020). One way in which the public gets its information about crime is through the media and the way in which the media depicts the criminal justice system influences public opinion (Sasson, 1995). The media can create a false sense of reality by distorting, exaggerating, and even flat out lying about a criminal justice related event (Green, 2009). This, in turn, influences the way people think about the system and shapes their opinions on crime and punishment.

There are some limitations of the study that should be acknowledged. Our sample was collected from Amazon's Mechanical Turk and is not representative of the United States population as a whole. Indeed, our sample is more female, better educated, and Whiter than the general public. While we did control for demographics in the analyses, this study's results may partially be due to the non-representative sample that we surveyed. Given past research that has found that the magnitude of effect sizes, though not the relationship direction, may differ in MTurk studies compared to nationally-representative studies (Thompson & Pickett, 2019), we caution against interpreting the precise effect sizes presented in this study as the absolute truth rather than as the likely trends. Future research should endeavor to use a more representative sample, as well as survey specific groups of respondents such as victims of crime, police officers, prosecutors, and defense attorneys. This would give a clearer understanding both of how the United States public as a whole feel about the age of a defendant, and how particular members of the criminal justice system feel. Longitudinal research on this topic would also provide more guidance into how - and why - public opinion on this topic changes over time.

Another limitation of this study is that it limited the age range from 15 to 25. This age range was chosen because it captured the ages at which the age-crime curve would suggest criminal behavior peaks (approximately 15-19 years old) as well as the ages at which the brain fully develops (through approximately age 25). However, studies should extend the ages examined to provide a more comprehensive understanding of how sentencing outcomes relate to age across the lifespan. Prior research has also suggested that the effect of offender age on punishment outcomes is likely not linear (Steffensmeier et al., 1995). In the context of the current study, a one-year increase in offender age may not have an equal effect across all ages, though Figure 1 suggests a relatively linear trend in the present study.

5 Conclusion

The purpose of this study was to examine if the age of a defendant found guilty of committing a violent robbery affects public perceptions of recommended punishment, accountability, and the likelihood of reoffending. We found that respondents did not recommend longer prison sentences for older defendants but did recommend higher restitution amounts for older defendants. There are gender differences in how defendant age affects perceptions with female respondents recommending significantly more prison time and male respondents recommending significantly more restitution for older defendants than for younger defendants. Additionally, we do not find that younger defendants are perceived as less accountable for their crime than older defendants. Lastly, our findings indicate that defendant age does not affect public perceptions of recidivism. Taken together, these results suggest that the public believes that older defendants are more deserving of punishments than younger defendants - though the type of punishment depends on the respondent gender - and that these results are not due to perceptions that older defendants are more accountable or more likely to recidivate than younger defendants.

Notes

[1]Internationally, the United Nations recommends that countries set the age of criminal majority be set at age 18 and prosecute all people under that age - and who are above the minimum age of criminal responsibility (the UN recommends age 14) - in the juvenile justice system rather than the adult justice system. However, not all countries follow this guidance (UN Committee on the Rights of the Child CRC, 2007). Brazil, for example, is considering lowering it age at which juveniles can be tried as adults from age 18 to age 16 (Alves, 2019).

[2]Respondents were 599 United States residents who completed a survey via Amazon's Mechanical Turk platform.

[3]While we do allow respondents to choose a gender other than male or female, this group is too small to analyze separately.

[4]The young man's name, "Matt," is nearly always held by a Caucasian person (Tzioumis, 2018), meaning that this study may not be generalizable to perceptions of other races. Future research should examine if this study's effects are consistent across different defendant races.

[5]These analyses also use respondent demographics as control variables.

[6]MTurk prevents users from taking the same survey twice by restricting access to the survey once per IP address.

[7]In full, the purpose of the study read "During this study, you will be asked to imagine that a crime has taken place and that the suspect has been apprehended and found guilty. You will be presented with facts about this case and then asked to recommend a punishment."

[8]The full set of choices are: Veterinary practices, Punishment for a crime, Mental health, Drunk drinking, and Child protective services. These answers were presented to respondents in a random order.

[9]The choices for this question are: Robbery, Rape, Murder, and Cybercrime. All answers are presented in random order.

[10]Respondents who failed the first check were removed from the data before we checked answers to the second attention check so this group of the subset of respondents who answered the first attention check correctly.

[11]Census data are from the U.S. Census Bureau QuickFacts website which estimates U.S. population for 2019. The Census data provides education data only for respondents over the age of 25. The link to that site is here: https://www.census.gov/quickfacts/fact/table/US/PST045219

[12]Census race and ethnicity data come from the 'Hispanic or Latino Origin by Race' table available on the United States Census Bureau website for the 2019 American Community Survey (https://data.census.gov/cedsci/table?q=hispanic %20or%20latino%20origin%20by%20racetid=ACSDP1Y2019.DP05hidePreview=false). The data is from the 2018 American Community Survey (ACS).

[13]Interestingly, though respondents can choose any number from 0 to 99,999 for a restitution amount, they are highly likely to choose a multiple of 1,000.

[14]For age 19 a recommended restitution of $1,000 and $10,000 were chosen an equal number of times.

[15]The vast majority of respondents believed that the defendant is accountable for the crime, with 1,431 respondents (75%) saying that the defendant is very accountable and 251 saying they are somewhat accountable (13%). Among those who say the defendant is unaccountable, 78 say they are somewhat unaccountable (4%) and 159 say they are very unaccountable (8%).

[16]The majority of respondents believed that the defendant would commit a similar crime in the future, with 495 respondents (26%) saying that the defendant is extremely likely and 911 (47%) saying they are somewhat likely to commit a similar crime in the future. Among those who say the defendant is unlikely, 138 (7%) say they are somewhat unlikely and 38 (2%) say they are extremely unlikely. Three hundred thirty-sex respondents (18%) considered the defendant neither likely nor unlikely.

[17]For female respondents only: for every 1-year increase in the defendant's age, the recommended prison sentence increased by .27 years, which translates to approximately 3.25 months.

[18]For male respondents only: for every 1-year increase in the defendant's age, the recommended restitution increased by $499.86.

[19]For a good overview of this hypothesis, called the "shadow of sexual assault", please see Charles & Meeker (2003)

[20]Given that the primary goal of the juvenile justice system is rehabilitation, these sentencing outcomes may be more common for youth defendants than for adult defendants.

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Table 1: Participants (n = 1,918) demographics

Variable	Description	N	Percent
Gender	Female	1,141	59.49
	Male	775	40.41
	Other	2	0.10
Race	White	1,389	72.42
	Asian/Pacific Islander	194	10.11
	Black	188	9.80
	Other	63	3.28
	Two or more races	60	3.13
	American Indian or Alaska Native	24	1.25
Ethnicity	Not Hispanic	1,679	87.54
	Hispanic	239	12.46
Income	Less than $20,000	234	12.20
	$20,000 - $39,999	392	20.44
	$40,000 - $59,999	414	21.58
	$60,000 - $79,999	347	18.09
	$80,000 - $99,999	210	10.95
	More than $100,000	321	16.74
Education	Less Than High School	11	0.57
	High School Graduate	180	9.38
	Some College	418	21.79
	2 Year Degree	173	9.02
	4 Year Degree	735	38.32
	Master's Degree	299	15.59
	Professional Degree	65	3.39
	Doctorate	37	1.93

Table 2: Mean, median, and mode values for recommended prison sentence (in years) and recommended restitution amount (in dollars) by offender age and overall

Defendant Age	Mean	Median	Mode
15	5.50	3	5
16	7.87	5	5
17	8.01	5	5
18	6.76	5	5
19	7.12	5	5
20	7.15	5	5
21	7.58	5	5
22	8.03	5	5
23	8.63	5	5
24	7.70	5	5
25	8.22	5	5
Total	7.51	5	5

(a) **Recommended Prison Sentence (in Years)**

Defendant Age	Mean	Median	Mode
15	7,461	1,200	1,000
16	12,078	2,750	0
17	9,203	3,250	5,000
18	10,478	2,000	1,000
19	11,615	3,500	1,000, 10,000
20	10,179	5,000	1,000
21	13,049	5,000	10,000
22	12,882	5,000	5,000
23	14,975	5,000	5,000
24	11,617	5,000	5,000
25	11,863	5,000	10,000
Total	11,411	5,000	5,000

(b) **Recommended Restitution Amount (in Dollars)**

Table 3: OLS regression results for the effect of defendant age on recommended punishment

	Complete Sample	Female Respondents	Male Respondents
$\hat{\beta}$	0.164	0.270**	0.0226
Se($\hat{\beta}$)	0.087	0.081	0.169
[CI]	[-0.008, 0.335]	[0.099, 0.441]	[-0.309, 0.354]
P-value	0.062	0.002	0.893
N	1918	1,141	775
Mean(y)	7.51	6.56	8.92

(a) Panel A: Recommended Prison Sentence (in Years)

	Complete Sample	Female Respondents	Male Respondents
$\hat{\beta}$	389.706*	367.912	499.860*
Se($\hat{\beta}$)	170.290	252.127	208.797
[CI]	[55.730, 723.682]	[-126.781, 862.605]	[89.968, 909.752]
P-value	0.022	0.145	0.017
N	1,918	1,141	775
Mean(y)	11,410.57	11,154.23	11,814.83

(b) Panel B: Recommended Amount of Restitution (in Dollars)

Note: All models include the following respondent demographic control variables: age, gender, race, ethnicity, education status, and their household income. The N for female and male respondents does not add up to the complete sample N because two respondents identified as a gender other than female or male.
*p<0.05 **p<0.01

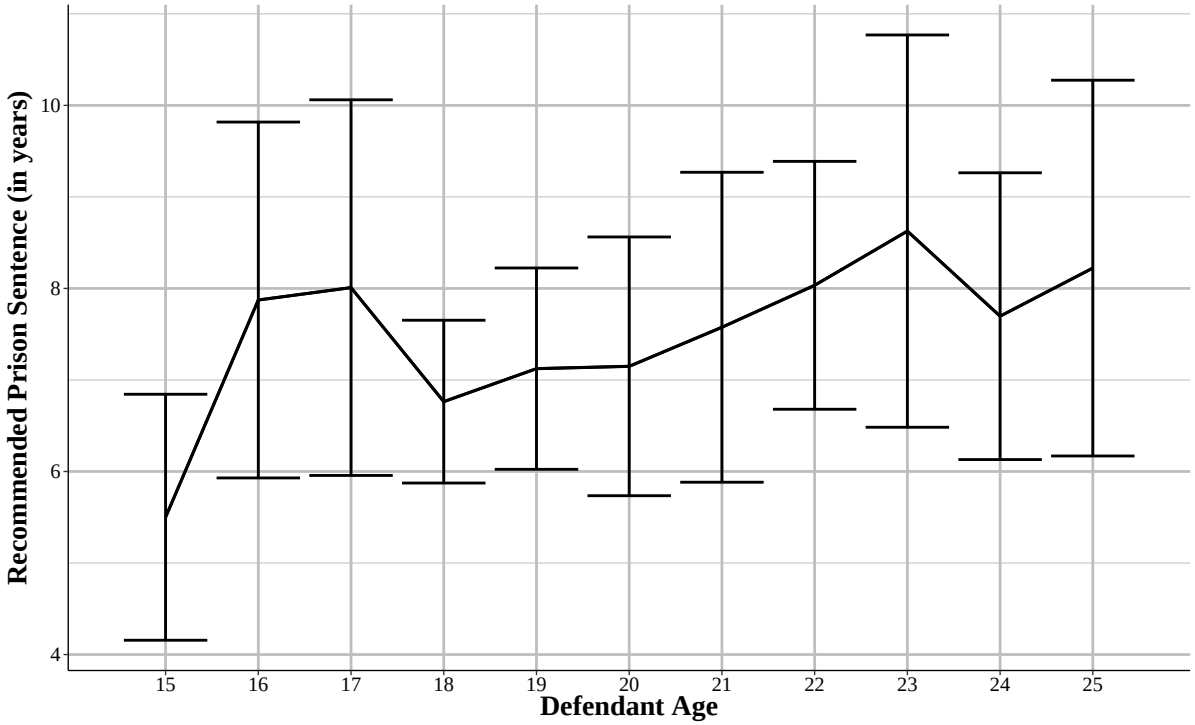
Table 4: Ordinal logistic regression results for the effect of defendant age on perceptions of accountability and likelihood of committing a similar crime in the future

	How accountable the defendant is	How likely the defendant will reoffend
$\hat{\beta}$	-0.010	0.0005
Se($\hat{\beta}$)	0.0167	0.0135
exp($\hat{\beta}$)	0.990	1.0005
[CI]	[0.958, 1.022]	[0.974, 1.027]
P-value	0.532	0.968

Note: Each regression includes the following respondent demographic control variables: age, gender, race, ethnicity, education status, and their household income. For the first question, respondents were asked 'How accountable do you think the defendant is for the crime?' with the possible answers being: Very unaccountable, Somewhat unaccountable, Somewhat accountable, and Very accountable. For the second question, respondents were asked 'How likely do you think it is that the defendant will commit a similar crime in the future?' with the possible answers being: Extremely unlikely, Somewhat unlikely, Neither likely nor unlikely, Somewhat likely, and Extremely likely. *p<0.05 **p<0.01

Figure 1: Respondent Recommended for Punishments for Each Defendant Age (Randomized from 15-25, 95% confidence intervals shown in error bars)

A: Average Recommended Prison Sentence (in Years) by Defendant Age



B: Average Restitution to the Victim (in Dollars) by Defendant Age