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Patterns and Trends in Elder Homicide Across Race and Ethnicity, 1985-2009

Ben Feldmeyer[1] and **Darrell Steffensmeier**[2]

[1]University of Tennessee, Knoxville, TN, USA

[2]Pennsylvania State University, University Park, PA, USA

Abstract

In this report, we assess total and race/ethnicity-disaggregated patterns and temporal trends in elderly homicide (age 55-74) compared with younger age groups for the 1985-to-2009 period. To do this, we use California arrest statistics that provide annual homicide figures by race and ethnicity (including a Hispanic identifier) and by age. Major aims of our analysis are to establish whether (a) elderly homicide rates are different/similar across race/ethnic comparisons; (b) the elderly share of homicide and age-homicide distributions more generally differ across race/ethnicity; and (c) elderly rates of homicide and the share of elderly homicide relative to younger age groups is similar or different now as compared with 20 to 30 years ago. Our analysis is important and timely because some commentators have suggested that elderly homicide levels have been rising over the past one to two decades and because there is a virtual absence of research of any sort on elderly homicide trends that involve comparisons by race and ethnicity. Key findings are that elderly shares of homicide offending relative to younger ages have not increased (or decreased), that elder homicides continue to account for a small fraction of all homicides, and that these patterns persist across race/ethnicity comparisons.

Keywords

elderly; ethnicity; homicide; race; trends

Recent decades have witnessed two major trends in the U.S. population that have garnered substantial attention from both the scholarly and policy communities, including some homicide researchers and practitioners. The first trend is the aging or “graying” of the U.S. population. As the baby-boom generation has grown older, the U.S. population has gradually shifted toward an older age distribution and has experienced marked growth in the elderly. Those aged 55 and above have grown from a population of approximately 50

Corresponding Author: Ben Feldmeyer, Department of Sociology, University of Tennessee, 901 McClung Tower, Knoxville, TN 37996, USA. bfeldmey@utk.edu.

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million (about 20% of the population) in 1980 to more than 75 million by 2009 (25% of the population). Furthermore, demographic projections suggest this trend will continue and that persons aged 55 and above will surpass 135 million people and account for more than 30% of the U.S. population by the year 2050 (Addington, 2011; U.S. Census Bureau, 2010). The second notable demographic trend is the growth in Asian and Hispanic populations. The Asian population in the United States has more than quadrupled between 1980 and 2009, growing from 3.8 million to 16 million residents. Similarly, the Hispanic population has more than tripled over the past 30 years, from 15 million in 1980 to more than 48 million in 2009, causing Hispanics to become the largest racial/ethnic minority group in the country.

In response to these dramatic demographic changes, scholars have produced a sizable body of research exploring the various ways that growth in both population groupings (i.e., the U.S. elder and the U.S. minority populations) have shaped health care, family, politics, labor and work, the economy, and other prominent social institutions (e.g., Cutler & Hendricks, 2006; O'Rand, 2001). So too in law/criminology, though far from abundant, there has been some growth in research that has focused on elderly homicide patterns. The research includes, first, a number of studies that provide rich descriptions of homicides committed by older offenders and their unique characteristics and covariates, such as weaponry (Wilbanks & Murphy, 1984), substance abuse (Arndt, Turvey, & Flaum, 2002; Curtice, Parker, Schembri-Wismayer, & Tomison, 2003), and relationships between offenders and victims (Aday, 2003; Barak, Perry, & Elizur, 1995; Bridges & Riedel, 2011). In general, this literature indicates that elderly homicide offending patterns often differ from those of more youthful offending due to the routine activities of older populations. Compared with younger offenders, homicides involving elderly offenders are more likely to occur in private homes than public spaces and are less likely to stem from other felony offenses. In addition, elderly homicide offending more often involves victims who are female, family members or acquaintances (rather than strangers), and elderly themselves (Aday 2003; Kratcoski & Walker, 1988; Kuhlmann & Ruddell, 2005; Sacco, 2004; Wilbanks & Murphy, 1984). The second line of research, which emerged partly in response to claims about a "geriatric crime wave," sought to determine whether, relative to other age groups and to their elders in prior decades, the elderly were committing more crimes (including homicide) than in the past. These analyses rejected the claims of rising levels of elderly crime and homicide (e.g., Cullen, Wozniak, & Frank, 1984; Feldmeyer & Steffensmeier, 2007; Steffensmeier, 1987), though the time frame covered in these reports is now somewhat outdated.

There also has been in criminology a growth in studies examining the race/ethnicity–crime relationship and Hispanic crime, in particular. This research shows, first, that there is considerable overlap in major covariates of crime and especially homicide across racial and ethnic groups and that indicators of structural disadvantage are robust predictors of violence rates for Whites, Blacks, and Hispanics (see reviews in Feldmeyer, 2009, 2010; Steffensmeier, Ulmer, Feldmeyer, & Harris, 2010). Second, although the debate continues about the precise size of race/ethnic gaps in violent offending, the general finding is that Blacks are overrepresented among offenders for serious violent offenses and "street crimes," such as homicide and robbery, followed by Hispanics and then Whites (Feldmeyer & Steffensmeier, 2009; Martinez, 2002; Steffensmeier et al., 2010; Steffensmeier, Feldmeyer, Harris, & Ulmer, 2011). Though there is far less research on other race/ethnic groups, the

general finding is that Asian populations are underrepresented for homicide (and most offenses), whereas Native Americans are overrepresented for some offenses (alcohol violations) but have fairly low rates for homicide and other violent crimes—that is, their rates are somewhat higher than White or Asian rates but are lower than Black or Hispanic rates (McNulty & Bellair, 2003; Painter-Davis, 2010; Walker, Spohn, & DeLone, 2000).

The present study brings together these two strands of research (on elderly crime and on race/ethnic–crime relationships) to address an important gap in the extant research on elderly homicide—assessment of patterns of elderly homicide offending both *over time* and across *race/ethnic populations* (White, Black, Asian, Native American, and Hispanic comparisons). In addition to examining arrest rates, the current study pays particular attention to whether elderly *shares* of homicide arrests relative to those of younger age groups differ across race/ethnicity and over time. A major focus of our analysis concerns whether the dominance of youthful homicide offending has shifted at all toward older age groups for some race/ethnic groups in recent decades. We accomplish this by applying a variety of methods and by using homicide arrest statistics from California (CAL) that are particularly well suited for the assessment—First, because the CAL database is composed of individual records in which each arrestee's age and his or her race or Hispanic ethnicity is simultaneously coded. In contrast, prior homicide studies have relied heavily on UCR arrest statistics, which include a code for "race" (White, Black [non-White], Asian, Native American) but do not collect data by "ethnicity" or include a "Hispanic" identifier. Second, because of the state's large size and population diversity—it is home to sizable numbers of Whites and Blacks, while also having the largest Asian and Hispanic populations in the country and the third largest Native-American population (U.S. Census Bureau, 2010). Third, the CAL data are recent and also cover a long-enough time frame (1985-2009) to study patterns of elderly homicide both overall and by race/ethnicity.

Significance

Their comparatively low levels of homicide notwithstanding, the topic of elderly homicide trends and their intersection with race/ethnicity is an important and timely issue which cross-cuts a variety of social science and policy arenas. First, identifying whether elderly homicide has declined or increased over time is important for assessing concerns about the social well-being of the aging U.S. population and for assessing whether today's growing senior citizen population faces better or worse prospects and social circumstances than in prior decades. Scholars and practitioners interested in various aspects of aging and social change are likely to be concerned about the possible effects of recent social and economic developments on the elderly population—including whether those effects might be reflected in higher or lower rates of criminality among the elderly. Compared with prior generations, today's senior citizens are enjoying greater health, prosperity, more active lifestyles, and longer lives. Yet this improved well-being and prosperity is not experienced by all older Americans. There also exists a sizable share of the elderly population that lives in poverty, deprivation, and isolation and that faces considerable social and economic strains (Federal Interagency Forum on Aging-Related Statistics, 2005), such as the growing population of homeless elderly persons (Burt, Laudan, Aron, & Valente, 2001; Cohen & Sokolovsky, 1989).

Second, social scientists, correctional officials, and policy makers have experienced increasing concerns about the impact of the aging U.S. population and growing number of elderly inmates on the jail and prison systems. Recent studies reveal an increase in elderly inmates in state and federal prisons over the past couple of decades. However, it is unclear whether the growing number of elderly inmates is due to an increased level of criminality and violence among older Americans, as some commentators suggest (Evans, 1998; Marquart, Merianos, & Doucet, 2000) or whether it reflects "tough on crime" policies that have widened the net of the criminal justice system to capture greater numbers of older Americans, often for the first time in their lives (Aday, 2003). Alternatively, the growing elderly prison population may simply reflect shifts in penal policies (e.g., mandatory-minimum sentences, three-strikes laws) whereby many prison inmates are serving longer terms and are simply growing old (Kuhlmann & Ruddell, 2005). Regardless of the specific source of this shift, having larger populations of elderly inmates is a source of considerable concern due to their greater health care needs and expenses, their greater vulnerability to victimization and self-harm, and their need for special accommodations and care both in jails/prisons and in community social service and health care agencies upon release (Aday, 2003; Kuhlmann & Ruddell, 2005; Marquart et al., 2000).

Third, criminologists and life-course scholars will be interested in the intersection of elderly homicide patterns with race/ethnicity—whether, for example, the age structure of homicide (proportionate homicide involvement of the elderly vis-à-vis other age groups) differs substantially across racial groups or has shifted more/less toward older offenders for some groups but not others. On one hand, criminological theory generally suggests considerable similarity in the age distribution of crime for different demographic groups on grounds that, notwithstanding some differences in social and environmental conditions, life course processes are generally expected to be congruent across race/ethnicity and gender (see reviews in Lisey & Derzon, 1998; Steffensmeier, Allan, Harer, & Streifel, 1989; Steffensmeier and Ulmer, 2005; Tittle & Grasmick, 1998). As Steffensmeier and Streifel (1991) argue, there is considerable similarity across demographic categories in "life-style adaptations, age-related social contingencies, and cognitive or developmental stages" (p. 871).

On the other hand, although age-stratification processes of the larger U.S. society are expected to influence the age-crime propensity of differing social groups in a roughly parallel fashion, some contextual variations in the age-homicide curve might occur across race/ethnic groups. Notably, prolonged offending and slower declines from peak offending rates among young-adult age groups (e.g., those in their early to late 20s) may occur among groups for whom legitimate opportunities and integration into adult society do not markedly increase with age and the movement from adolescence to adulthood. As a result, this could lead to a greater share of homicide being concentrated among youth and young adults. Minority youth entering adulthood, for example, may be less able to "mature out" of their youth status and behaviors because of limited access to productive activities and other goals of conventional life—college attendance, employment at adequate wages, marriage, family, community involvement—that facilitate desistance from delinquent behavior (Elliott, 1994; Hagan, 1991; Steffensmeier & Allan, 1995). Whereas changes in social and legal factors can be expected to create a sharp reduction in age-specific crime rates (including homicide) for

the *majority* of those in their late teens or early 20s, these same social factors also may work to sustain a high rate of offending among labeled persons and among youths who become alienated from conventional society and remain bonded to unconventional networks.

For many Black youth, in particular, the high level of youth inequality that characterizes modern society is compounded by the problems of living in a racist society (Wilson, 1987, 2009). As young Blacks have fewer economic opportunities and less access to full adult status in our society, they become "more deeply embedded in and dependent upon the gangs and the illicit economy that flourish in their neighborhoods" (Elliott, 1994, p. 19). They also are more subject to the stigmatizing effects of police arrest and law enforcement sanctions (Hagan, 1991; Harris & Shaw, 2000). Similar obstacles for leaving behind the inequality of youth status also confront Hispanic youth but to a lesser extent. Their movement into adulthood is more likely to be eased by supportive kin networks that facilitate community involvement and access to employment, albeit oftentimes into the "unskilled labor" and agricultural sectors of the labor force (Healey, 2006; Light & Gold, 2000). In contrast, for White and Asian youth the movement from adolescence to adulthood is much more likely to be associated with marked increases in legitimate opportunities and integration with adult society, including college attendance or employment at adequate wages.

Expectations

Drawing on these themes along with our earlier discussion regarding race/ethnic differences in levels of homicide, our analysis is guided by three hypotheses.

First, regarding race/ethnic differences in levels of elderly homicide, we expect elderly homicide offending rates will be higher for Black and Hispanic populations, followed by Native Americans, with Whites and Asians having the lowest rates. Stratification processes in the larger society (e.g., differences in structural disadvantage across race-ethnic groups) that help to explain higher levels of homicide among Blacks and Hispanics in general are likely to also contribute to race/ethnic differences in elderly homicide rates.

Second, regarding race/ethnicity effects on the age-homicide curve, we expect small to modest race/ethnic variations in the proportion of all homicides committed by the elderly—the proportions will be smaller for Blacks and Hispanics, followed by Native Americans, and with Whites and Asians having the highest proportions. Because of differences in access to legitimate status-attainment opportunities and integration with adult society over the late teens through young adulthood period, Black and Hispanic populations are likely to experience slower declines in the offending rate from the peak youth and young-adult ages. As a result, this would lead to a larger youth share of homicide offending while simultaneously decreasing the elderly share for these groups. (Note: the share of one age group is also a function of another age group's share). In addition, cultural and structural-cultural themes in criminological research, such as Anderson's (1999) "Code of the Streets," suggest that Black populations (and Hispanics to a lesser degree) face greater exposure to subcultural adaptations and circumstances that promote situational *youth* violence—as these have emerged in many Black urban neighborhoods in response to social isolation and concentrated structural disadvantages (see also Sampson & Wilson, 1995; Steffensmeier et

al., 2010; Wilson, 1987). As a result, Black and Hispanic homicide may be more dominated by youthful offenders.

Third, regarding temporal trends in elderly homicide, we expect little change over time in the elderly share of homicide overall and for each race/ethnic group. Although prior studies addressing trends in elderly crime have generally been limited to earlier time periods and have not been disaggregated by race/ethnicity, their findings suggest stability in elderly shares of violence over time (see Feldmeyer & Steffensmeier, 2007).

In light of the increased interest in empirical research on older Americans and because no one has systematically analyzed elderly homicide trends for the most recent period both overall and by race/ethnicity, the present study uses race/ethnic disaggregated homicide arrest data from California to more clearly establish the patterns and time trends in elderly homicide during the 1985-2009 period. Consistent with analytic techniques established in Feldmeyer and Steffensmeier's (2007) analysis of overall trends in elderly crime using national arrest data, we employ a variety of methods, including age-standardization techniques and Augmented Dickey-Fuller time series procedures, to assess (a) whether elderly homicide rates are different/similar across race/ethnic comparisons (White, Hispanic, Black, Native American, and Asian); (b) whether the elderly share of homicide and age-homicide distributions more generally differ across race/ethnicity; and (c) whether elderly rates of homicide and the share of elderly homicide relative to younger age groups is similar or different now as compared with 20 to 30 years ago.

Data and Method

Data on homicide offending disaggregated by age, race/ethnicity, and year are drawn from arrest statistics compiled by the California Uniform Crime Reporting program (hereafter, CAL) for the 1985-2009 period. These data are well suited for the current study because they overcome a major shortcoming of annual arrest statistics published in the FBI's Uniform Crime Reports (UCR) and other commonly used crime databases—namely, the lack of a Hispanic identifier for coding the arrestee's race or race/ethnicity. As a result, Hispanic arrests in the UCR and other official databases are commonly classified as "White" (about 94%) or as representing one of the other racial categories. In contrast, the CAL data include a Hispanic identifier (ethnicity) as well as a coding for the arrestee's race (White, Black, Asian, Native American). The CAL data also code the arrestee's age in individual years as compared with 5-year age groupings in the UCR. Together, the race/ethnicity and age categories in CAL are advantageous as compared with those available in the UCR because the breakdowns (a) provide information on Hispanic homicide offending, (b) provide "clean" counts of homicide arrests for Whites, Blacks, and Other race groups that are not confounded with Hispanic figures (see Feldmeyer, 2009; Steffensmeier et al., 2010, 2011), and (c) allow analysis of homicide patterns both by race/ethnicity and across the full life span, rather than the standard "juvenile" versus "adult" categories for each race/ethnic group available in UCR tables. As we describe below, the refined age-by-race categories in CAL are especially useful for creation of Proportionate Age Involvement (PAI) measures that can be used to assess the share of elderly homicide offending relative to younger ages for each of the race/ethnic subgroups.

Our analysis uses several techniques to assess elderly patterns and trends in homicide. First, for the full 1985-2009 period, we calculate yearly age-specific homicide arrest rates (using 5-year age categories) for the total population and each race/ethnic group (White, Black, Native American, Asian, and Hispanic). The procedure for computing these population adjusted rates is adapted from the 1969 Report of the National Commission and the Causes of Violence and is described in further detail in prior studies (see O'Brien, 1999; Steffensmeier & Harer, 1999). Homicide arrest rates for these 5-year categories are then combined and averaged into three 20-year age-groupings for each race/ethnic group and for two overall time periods (1985-1999 and 2000-2009): (a) elderly homicide rates (average of arrest rates for age groups 55-59, 60-64, 65-69, and 70-74), (b) middle-age rates (average of rates for 35-39, 40-44, 45-49, and 50-54), and (c) young rates (average of rates for 15-19, 20-24, 25-29, and 30-34).[1]

Second, we use these age-based rates to calculate yearly PAI figures for the total population and each race/ethnic group as a measure of the elderly share of homicide arrests relative to younger ages. For each offense, the PAI indicates the percentage of arrests involving elderly offenders (ages 55-74) relative to the percentages contributed by other age groups (e.g., middle age, young), adjusting for the age composition of the U.S. population (for further description of PAI figures, see Feldmeyer & Steffensmeier, 2007; Steffensmeier, 1987). This measure overcomes a common pitfall in age-specific analyses of crime: the failure to present age ratios or proportions that take into account the age composition of the population as a whole. The PAI represents a cumulative percentage, which equals 100% when summed across all age groups and provides a straightforward measure of the gap in homicide offending between the elderly and nonelderly. In addition, examination of PAI figures at different time points allows easy identification of shifts in elderly offending compared with younger groups. The formula for calculating the elderly PAI is: $PAI_{(elderly)ij} = 100 \times (r_{(55\text{-}74)ij} / [r_{(15\text{-}34)ij} + r_{(35\text{-}54)ij} + r_{(55\text{-}74)ij}])$, where r is the averaged homicide arrest rate for a specific age grouping (young, middle age, elderly), i is the year, and j is the race/ethnic group. Similar procedures are used to calculate PAI figures for the young and middle-age population groupings (i.e., by replacing the elderly rate in the numerator with either the young or middle-age rate).[2]

Third, we use Augmented Dickey-Fuller (ADF) time series analyses to formally test for changes in the age-crime gaps and to identify whether elderly shares of homicide overall and for each race/ethnic group have been systematically rising or falling relative to homicides among younger age groups. The ADF test is an advanced econometric time-series method

[1]There is disagreement among researchers and policy makers about the most appropriate age for defining when one becomes a "senior citizen," including ages 55, 60, 65, and 75 (see Aday, 2003; Addington, 2011; Cutler & Hendricks, 2006; Sacco, 2004). We rely on ages 55 to 75 for our analysis of elderly offending because it provides: (a) greater numbers of elderly arrests and thus greater reliability in measures of elderly offending compared with analyses of populations above age 65 or 75 and (b) a 20-year age grouping that allows comparisons of rates and PAI figures that are consistent with our other 20-year age groupings of "young" and "middle-age" offending. However, in light of the lack of consensus about elderly age cutoff points, we replicated our analysis using several alternative "elderly" age groupings (above 65, 65-74, 75 and above) as well as several alternative combinations of younger age groupings (e.g., "young," "early adulthood," "middle age," "young old"). Findings from our supplemental analyses were substantively similar to the current findings; in particular, trends in the elderly PAIS for each race/ethnic group were virtually identical to those shown here (results available on request).

[2]In supplemental analyses, we also calculated PAI figures using separate 5-year age groupings from ages 10 to 74 (as opposed to averaged 20-year groupings used here). Analyses using the 5-year groupings revealed substantively similar findings to those obtained with the three 20-year groupings.

that is well suited for analyzing trends in elderly homicide during the 1985-2009 period because it reveals whether there are *systematic* year-to-year changes in the share of elderly offending after taking into account (a) random fluctuations or "shocks" in the offense series, (b) the long-term effects of these shocks, and (c) autocorrelation of residuals. When left uncontrolled, these factors can create random walks which appear to be real upward or downward trends in homicide when in fact there is no *statistically significant* and consistent trend in the series (for more detailed treatments of ADF methods, including the application to crime trends, Hamilton, 1994; LaFree, Baumer, & O'Brien, 2008; O'Brien, 1999; Steffensmeier et al., 2011). The ADF test is advantageous because it accounts for these potential sources of bias and reveals whether the gaps between elderly and nonelderly arrests have systematically diverged (widened), converged (narrowed), or have remained essentially stable or trendless.[3] In applying ADF tests, we use a symmetrical measure of the age gap in crime defined as the natural log of the elderly arrest rate minus the natural log of the nonelderly arrest rate (see Table 1 for formula).[4]

Findings

Our analysis covers the 1985-2009 period and addresses whether (a) elderly homicide rates differ across race/ethnicity, (b) whether the elderly shares of homicide (and age-homicide distributions more generally) differ across race/ethnicity, and (c) whether elderly rates of homicide and the share of elderly homicide relative to younger age groups has changed over time.

We begin with an overall view of the age-homicide curve and the relative rarity of elderly homicide as shown in Figure 1, using 5-year age groupings for the 2007-2009 period. The age pattern we observe here is consistent with prior research. We find a peaking of homicide rates among youth (late teens/early 20s) with rates above 18/100,000, followed by a sharp drop-off in homicide arrests around age 30 and then steady declines throughout the remaining or older age groups. At age 55, arrest rates are less than 2/100,000 and continue to drop with increasing age. Moreover, a negligible fraction of all homicide arrests (only 10 homicides over the entire 2007-2009 period) involve offenders aged 75 and above.[5]

Differences in Elderly Homicide Rates by Race/Ethnicity

A central issue in our analysis of elderly homicide is whether or how much homicide rates vary across race/ethnic comparisons. Table 1 displays total and race-specific homicide rates

[3]A stable series indicates that the age-gap has not shifted over time (i.e., elderly and non-elderly homicide rates move in equilibrium). A trendless series exists when the gap between elderly and nonelderly homicide has fluctuated randomly over time but has not systematically trended upward or downward. Although trendless and stable series are statistically distinct concepts, they are conceptually similar and both indicate that the age-gap in homicide has not widened or narrowed over time. Therefore, we use the terms *stable* and *trendless* interchangeably to describe series in which the age gaps in arrests do not trend significantly.

[4]To calculate population-adjusted rates that take into account (a) the general decline in homicide with age and (b) the uneven numbers of ages included within the elderly (ages 55-74) as compared with the nonelderly grouping (e.g., ages 15-54), both elderly and nonelderly rates are calculated using 5-year averaged rates multiplied by the number of 5-year age groups in a larger age span. To further exhaust the data, we also estimated ADF models using more simple calculations of elderly (55+ rate) versus nonelderly rates (15-54 rate) to measure the age-gap in homicide, which produced nearly identical results to those described here.

[5]Homicide arrests for the total population (2007 to 2009) include 4,236 arrests for "young" offenders, 937 arrests for "middle age" offenders, and 167 "elderly" arrests. In addition, because homicide arrests very seldom involve a very young or very old offender but instead are essentially confined to offenders between ages 15 to 74 (see Figure 1), all calculations of arrest rates and PAIs use ages 15 to 74 as the population at risk.

for three age groupings referred to as elderly (ages 55-74), middle age (ages 35-54), and young (ages 15-34) for both the 1985-1999 and 2000-2009 time periods.[6] First, we find that across both time periods (a) elder rates are much smaller than those for the middle-age group and especially the young and (b) this basic age-homicide pattern is manifest for all the racial comparisons.[7] Second, there is considerable variation in the size of elderly homicide rates across racial/ethnic comparisons (which holds across both time periods). White and Asian rates of elderly homicide are consistently lower than those for other race/ethnic groups (less than 1/100,000), whereas Hispanic and Black elderly rates are much higher (between 1/100,000 and 5.4/100,000) and with Native American elderly rates generally falling in between. Overall, these findings are consistent with our expectations as outlined earlier and with prior research describing race/ethnic differences in homicide offending (see review in Steffensmeier et al., 2011). As is the case for the population as whole, those groups experiencing the greatest structural disadvantage—in this case Blacks and Hispanics—have the highest elderly homicide rates.

Trends in Elderly Rates by Race/Ethnicity

Another key issue concerns the movement of elderly homicide rates over time—both overall and by race/ethnicity. As noted earlier, this issue reflects longstanding concerns within criminology about trends in homicide in general as well as past and current claims by some observers that elderly crime (including homicide) may be rising (Evans, 1998; Marquart et al., 2000; see reviews in Feldmeyer & Steffensmeier, 2007; Kuhlmann & Ruddell, 2005). Findings on temporal trends in elderly homicide rates are shown in Table 1 (comparing 1985-1999 vs. 2000-2009) and in Figure 2. Key observations are as follows. First, elder homicide rates have declined overall (1.15/100,000 for 1985-1999 vs. 0.8/100,000 post-2000) and for each of the race/ethnic groups. Second, the declines have been larger for Black and Hispanic groups (see Table 1 and Figure 2). Specifically, Black elderly rates fell from approximately 10/100,000 in 1980 to less than 3/100,000 by 2009, and Hispanic rates dropped from 3/100,000 to less than 1/100,000 (Figure 2). By comparison, the declines were much smaller among the other racial groups (Whites, Asians, Native Americans), which might be due in part to their small base rates (less than one homicide/100,000) and the presence of a floor effect—their rates are already so small, that there is little room to drop further.

Trends and Differences in Elderly Homicide Relative to Other Ages by Race/Ethnicity

We turn now to what the central issues in any discussion of elderly homicide patterns and their intersection with race/ethnicity are: (a) whether there are race/ethnic differences in the elderly share of homicide offending relative to younger groups, and (b) whether the elderly

[6]We assessed several different cutoff points for the “early” versus “contemporary” time periods (e.g., 1990, 1995). Substantive findings did not differ across any of our preliminary analyses. Thus, we use year 2000 to divide the time periods because it provides a natural breaking point for our over-time comparisons.

[7]To provide the reader with a sense of the raw numbers of homicide arrests for each age and race/ethnic group, we note the following for the 2007-2009 period: homicide arrest counts for the “young” age group are 526 White, 2,397 Hispanic, 1,060 Black, 142 Asian, and 16 Native American arrests; counts for the “middle-age” category are 328 White, 318 Hispanic, 219 Black, 32 Asian, and 7 Native American arrests; and homicide counts for the “elderly” age category are 88 White, 28 Hispanic, 31 Black, 8 Asian, and 3 Native American. (Note that arrest counts for each race/ethnic group may not equal the figures offered for the total population due to inclusion of “other race” homicides in counts for the total population.)

share of homicide has diminished or increased over the 1985-2009 period both overall and across race/ethnicity.

To address these issues, Table 1 shows the PAIs for each of our age groups and for each racial/ethnic group, and Table 2 shows the ADF time-series results for statistically assessing the trends in the PAIs overall and for each race/ethnic group. We note the following. First, the PAIs reinforce what has been observed so far and illustrate the relative scarcity of elderly homicide vis-à-vis younger age groups. PAI figures in Table 1 reveal that the elderly share of homicide is less than 5% for the total population and below 4% for some groups (Blacks and Hispanics). In contrast, PAI figures for the middle-age group range from between 12% (Asian, 1985-1999) and 29% (White, 2000-2009), whereas the young age groups account for approximately 60% to 80% of homicide rates.

Second, the PAI figures in Table 1 also reveal some noteworthy differences across race/ethnicity in the elderly shares of homicide and in the age distribution of homicide. Notably, the *relative* involvement of the elderly in homicide offending (compared with younger ages) is somewhat smaller for Black and Hispanic populations as compared with White, Native American, and Asian PAIs. The elderly account for only about 4% of all Hispanic and Black homicides, with the “young” age group accounting for about 80% of their homicide rates. In contrast, the elderly share of homicide is more than 8% for Native Americans and nearly 10% for Whites in the 2000-2009 period, with the “young” age group accounting for only 60% to 70% of White and Native American rates. Thus, there appear to be some important differences across race/ethnicity in the age distribution of homicide offending and the elderly contribution to homicide arrest rates. Black and Hispanic homicides are much more heavily concentrated among the younger ages and have relatively small shares of elderly offending, whereas Whites and Native Americans (and Asians somewhat) have relatively larger shares of elderly homicide and are less dominated by youthful offending.

These race-specific patterns are consistent with our theoretical expectations outlined earlier in which we suggested that age-stratification processes in the larger society would vary across race/ethnicity in ways that lead to different age-homicide distributions. Recall from our earlier discussion, we suggested that Black and Hispanic populations may experience prolonged offending peaks in youth and young adult ages, due in part to their limited access to legitimate success opportunities and integration with adult society. Our findings are consistent with this prediction and illustrate that Black and Hispanic populations have more youthful distributions of homicide and smaller shares of elderly offending, whereas the more advantaged White and Asian populations with greater access to employment and legitimate success roles are less dominated by youthful offending and have greater shares of middle-age and elderly homicide.

Temporal trends in elderly homicide shares by race/ethnicity, 1985-2009—We turn last to the issue of temporal trends in elderly homicide in which we assess whether elderly shares of homicide relative to younger groups (PAIs) have shifted upward or downward over time and whether these trends vary by race/ethnicity.

Focusing first on total population trends (not disaggregated by race/ethnicity), as shown in Table 1, we find that the elderly *share* of homicide relative to younger ages has remained fairly stable over the 1985-2009 period. Homicide rates declined over time for all age groups, with youth rates dropping at a similar or slightly greater pace than elderly rates. As a result, the elderly PAI or share of homicide relative to younger groups actually increased slightly from 3.8% (1985-1999 period) to 4.8% (2000-2009 period) despite an overall decline in elderly levels of homicide.

Next we examine trends in elderly homicide shares across race/ethnicity. The trends in elderly PAIs are displayed in Figure 3 but are limited to the three largest racial groups in California with more reliable homicide figures: Whites, Blacks, and Hispanics.[8] Drawing from Figure 3 and Table 1, we note the following. Black and Hispanic elderly PAIs or shares of homicide have held stable at about 4% (Figure 3) throughout the past two to three decades because elderly and nonelderly homicide rates have been dropping at about the same pace for these groups (also Native Americans, see Table 1). However, White populations show somewhat different trends. The elderly share of homicide for Whites has actually increased slightly over the past 25 years (Figure 3) because elder White rates have been fairly stable (at about 0.8/100,000) whereas rates for younger Whites have declined from 1985 to 2009. Figure 3 further illustrates this trend, showing that the elderly share of White homicide rose from about 6% in the late 1980s and early 1990s to more than 10% after the late 1990s. In contrast, Table 1 indicates that the elderly share Asian homicide has declined slightly from an average PAI of 7.9% for the 1985-1999 period down to 4.3% after year 2000.[9]

The final step of our analysis applies advanced Augmented Dickey-Fuller time-series techniques to provide a more rigorous analysis of the temporal trends in elderly homicide. ADF tests are useful for identifying trends in elderly homicide because they (a) consider all years in the time series, rather than drawing conclusions simply from beginning and endpoints examined and (b) provide formal significance tests to determine whether visual observations of upward/downward shifts in elderly homicide relative to younger ages actually reflect significant and consistent trends away from baseline levels (see LaFree et al., 2008; O'Brien, 1999; Schwartz, Steffensmeier, & Feldmeyer, 2009; Steffensmeier et al., 2011). For the ADF tests of trends in the elderly share of homicide, the intercept (α) represents the direction and magnitude of the time trend. A significant positive α indicates convergence between elderly and younger rates; a significant negative intercept implies

[8]Due to the rare nature of elderly homicide among the smaller Asian and Native American populations, annual plots of homicide rates and PAIs for these groups fluctuated wildly from year to year and were of limited use. Specifically, the data revealed zero elderly homicides for Asians and Native Americans for several years in the series and a total of about 50 elderly homicides for Asians and less than 20 for Native American homicides throughout the entire 1985-2009 period. As a result, we do not include Asians and Native Americans in Figures 2 and 3. Instead, we include a basic comparison of early (1985-1999) versus contemporary (2000-2009) homicide trends for these groups in Table 1 using multiyear averaged rates to add reliability to their figures and use ADF tests that can account for all data points in the Asian and Native American series (including zero values).

[9]One potential reason for the rising elderly share of White homicide observed in early portions of the analysis may be the presence of a "floor effect" among White rates. That is, the base rate for elder homicide may be low enough that it has essentially bottomed out to a point where it cannot fall further. As a result, the elderly share of White homicide will rise simply due to continued declines in young White homicide. With regard to trends in elder homicide among Asians, the decline in their elder PAI may simply be due to several outliers in Asian elderly homicide rates that create the image of a declining trend, hence the nonsignificant findings in our time-series analysis.

divergence; insignificant α or absence of one unit root means the PAI is trendless or the elderly-to-younger difference remains relatively stable.

Results of the ADF tests are reported in Table 2. The key finding is that none of the series showed significant upward or downward shifts in the elderly share of offending over time. That is, elderly shares of homicide for the total population and for all five race/ethnic groups were either trendless or stable, even with relaxed significance levels ($p < .10$). Thus, in contrast to the findings reported above for Whites and Asians showing small shifts in the elderly share of homicide, the results of our ADF tests offer no evidence of significant shifts in elderly offending in recent decades.

Conclusions

We draw several conclusions from our analysis of elderly homicide patterns over time and across race/ethnicity. First, as shown in prior work, the elderly account for a relatively small portion of homicide offending compared with other age groups. Second, this pattern has not changed much over time. Third, there is some variation across race/ethnicity in patterns of elderly homicide and in the age distribution of homicide more generally. Elderly *rates* of homicide are higher among Black, Hispanic, and Native American populations and are lowest among Whites and Asians. However, the elderly *shares* of homicide relative to younger ages are highest for Whites and Native Americans and smallest for Black and Hispanic populations. Fourth, while the elderly share of homicide has remained stable for Black, Hispanic, and Native American populations from 1985 to 2009, there is some evidence that the elder share of homicide has increased for Whites but decreased for Asians. However, as based on ADF time-series tests, these shifts do not reach formal significance levels to indicate consistent upward or downward trends. Notably, the very small base rates of elder homicide among Whites and Asians can lead to random fluctuations that create reliability problems for assessing trends.

Taken together, several key contributions and implications emerge from our analysis. First, our findings provide a general picture of stability in elderly homicide offending and provide little evidence of change. Although the share of elderly homicide offending differs somewhat by race/ethnicity, these patterns do not appear to have changed much in the last 25 years. Thus, our results provide no evidence of growth in elder violence and suggest that fears about rising crime among older populations may be misplaced (Evans, 1998, p. A5; also see reviews in Feldmeyer & Steffensmeier, 2007; Igoe, 2002; Kuhlmann & Ruddell, 2005). Second, our results reveal sizable differences in the elderly share of homicide across the five race/ethnic groups examined here, suggesting that the age distribution of homicide varies across race/ethnicity. Although there is general similarity in the shape of age-homicide curves across groups (offending peaks in youth and declines with age), we find relatively older age distributions of homicide for Whites than for Hispanic and Black populations. Among Blacks and Hispanics, homicide arrests are dominated by youth (approximately 80%) with far lower shares of middle age (14-17%) or elder offending (3-4%). This finding is consistent with our earlier discussion and prediction that race/ethnic differences in age-stratification processes and access to legitimate success opportunities may result in variable age distributions of homicide across race/ethnic groups. Black and

Hispanic populations, which are more disadvantaged and have more limited access to conventional activities and opportunities for youth integration into adult society, have prolonged peaks in youthful homicide that decline much more slowly than for other race/ethnic groups. In contrast, the more advantaged White youth populations have greater access to the types of adult roles and success opportunities that facilitate desistance and "aging out" of crime, that in turn contribute to faster declines from youth offending and larger shares of White homicide offending among older ages.

Overall, the current study provides an important extension of prior research by offering one of the first analyses of race/ethnic-disaggregated patterns and trends in elderly homicide. To assess the generalizability of our findings, future research should explore elderly trends in homicide for other locales outside of California. Although California's large population size and diversity make it well suited for comparisons across race/ethnicity (particularly for Hispanic and Asian comparisons), the age and race/ethnic patterns in homicide observed here may differ in other regions of the United States. Among other reasons, for example, state homicide reports indicate that California has particularly low clearance rates for homicide (ranging from 50% to 63% between 2000 and 2009; California Department of Justice, 2011), suggesting the need for additional research that uses alternative states or locales and perhaps other sources of homicide data beyond arrest figures such as mortality statistics. Second, researchers should also explore trends in elderly offending disaggregated by type of homicide (e.g., partner homicide, stranger, suicide-homicide) to identify if temporal trends in elderly homicide differ by type of offense. Third, scholars should continue to expand research on elderly homicide to incorporate more refined race/ethnic comparisons, including information on national origin of offenders (Mexican, Haitian, Cambodian, Chinese) and race-specific "Hispanic" identifiers (e.g., White Hispanic, Black Hispanic). Fourth, future analyses of elderly offending would benefit from assessing the intersection of race/ethnicity with gender in shaping elderly versus non-elderly homicide patterns.

However, until more research is forthcoming, the findings from our study are instructive—elderly shares of homicide offending relative to younger ages have not increased (or decreased), elder homicides continue to account for a small fraction of all homicides, and these patterns persist across race/ethnicity comparisons.

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Biographies

Ben Feldmeyer is an Assistant Professor of Sociology at the University of Tennessee. His research focuses on criminal behavior and criminal sentencing and their intersections with race/ethnicity (also age and gender), immigration, social class, and social context. His recent papers on these topics appear in Criminology, Journal of Research in Crime and Delinquency, Social Science Research, The Sociological Quarterly, and Social Problems.

Current projects include studies assessing (1) the way that spatial isolation of immigration impacts violence rates of places, (2) the connections between linguistic isolation, immigration, and violence, and (3) the way that immigrant concentration shapes community ties to law enforcement, and in turn the way that these factors affect neighborhood levels of social control and crime.

Darrell Steffensmeier is Professor of Sociology at Pennsylvania State University. A Fellow of the American Society of Criminology, he has authored articles on a range of law/criminology topics. His book, *The Fence: In the Shadow of Two Worlds*, received the Outstanding Scholarship Award of Society for Study of Social Problems. Another book (with Jeffery Ulmer), Confessions of a Dying Thief: Understanding Criminal Careers and Illegal Enterprise, received the 2006 Outstanding Scholarship Award of American Society of Criminology. Current research targets gender and race-ethnicity effects on crime patterns; effects of immigration and other broad-based social changes on crime patterns; further developing the "gendered paradigm" of female offending; expanding upon life course criminality and other themes raised in *Confessions of a Dying Thief*; and conducting research that extends our understanding of the broader criminal landscape (e.g., medical fraud, corporate crime).

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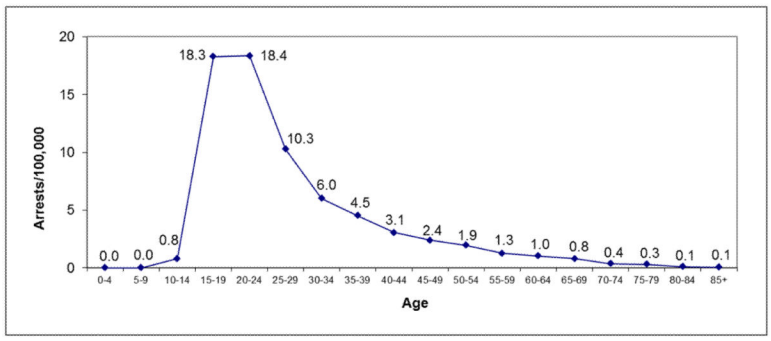

Figure 1.
Homicide arrest rates by age for the total population, 2007-2009 (3-year average).

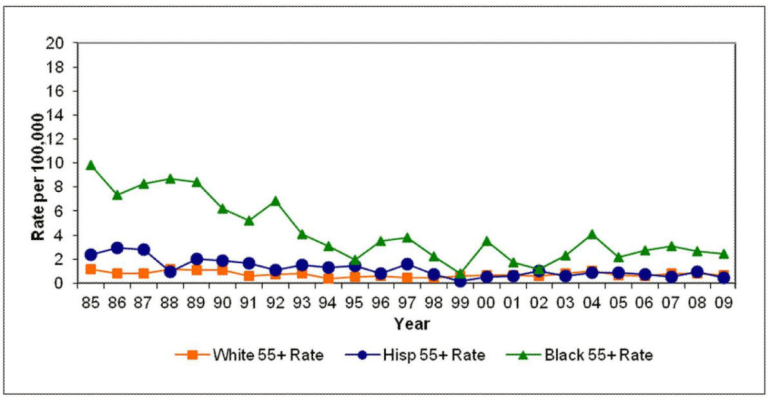

Figure 2.
Elderly homicide arrest rates by race/ethnicity, 1985-2009.

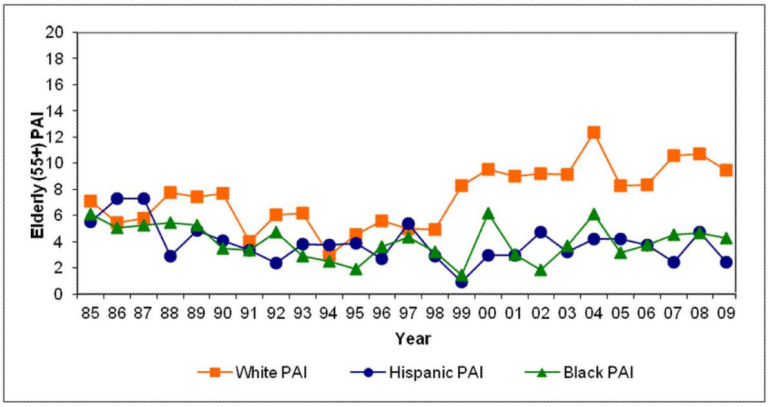

Figure 3.
Elderly homicide proportionate age involvement by race/ethnicity, 1985-2009.

Table 1

Elderly (Ages 55-74), Middle Age (35-54), and Young (15-34) Homicide Arrest Rates and Proportionate Age Involvement, 1985-1999 and 2000-2009.

	White		Hispanic		Black		Native American		Asian		Total	
	Rate	**PAI**	**Rate**	**PAI**	**Rate**	**PAI**	**Rate**	**PAI**	**Rate**	**PAI**	**Rate**	**PAI**
1985-1999												
Elderly (ages 55-74)	0.76	5.92	1.57	4.06	5.35	3.91	2.37	8.76	0.43	7.87	1.15	3.76
Middle age (ages 35-54)	3.52	27.48	6.67	17.58	22.44	17.05	5.78	21.34	0.84	12.30	5.32	17.58
Young (ages 15-34)	8.48	66.60	29.19	78.36	101.37	79.04	16.95	69.90	6.36	79.83	23.55	78.66
2000-2009												
Elderly (ages 55-74)	0.74	9.65	0.74	3.57	2.58	4.12	0.98	8.03	0.25	4.34	0.82	4.84
Middle age (ages 35-54)	2.24	29.16	3.04	14.90	11.30	17.96	2.64	21.67	0.88	14.74	3.01	17.73
Young (ages 15-34)	4.71	61.19	16.70	81.53	48.97	77.92	7.29	70.30	4.84	80.92	13.19	77.44

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Table 2

Trends in the Elderly Versus Nonelderly Gap in Homicide Arrests: Augmented Dickey-Fuller Time-Series Results From CAL Data, 1985-2009.

Race/ethnic group	Estimated value (α)[a]	Trend in the elderly/nonelderly homicide gap
Total population	0.0050	Stable/trendless
White	0.0345	Stable/trendless
Hispanic	−2.179	Stable/trendless
Black	−1.237	Stable/trendless
Native American	−4.759	Stable/trendless
Asian	−2.633	Stable/trendless

Note: The Augmented Dickey-Fuller first differenced equation is based on the following specification: $yt - yt - 1 = \alpha + \delta 1\ (yt - I - yt - 2) + \delta 2(yt - 2 - yt - 3) + \ldots + \mu t$. The elderly versus nonelderly age gap in homicide is measured as: log(elderly homicide rate) – log(nonelderly homicide rate), where the elderly homicide rate = (55-59 rate + 60-64 rate + 65-69 rate + 70-74 rate) / 4 and the nonelderly rate = (15-19 rate + 20-24 rate + … + 50-54 rate) / 8.

*$p < .10$. **$p < .05$. ***$p < .01$ (two-tailed).

[a]First differencing was required to stabilize the Total and White homicide series. Additional lagged differences (to account for autocorrelation) were not needed in any of the series tested. As differencing was not required for Hispanic, Black, Native American, and Asian series, we conducted separate assessments of elderly and nonelderly series for these groups. Results indicated that the series were cointegrated (elderly and nonelderly series were each first-order integrated). Intercept coefficients from the nondifferenced series are shown for these four groups but are substantially larger (and should not be interpreted as showing a greater trend) due to the fact that the series were found to be cointegrated.