

Joblessness, Family Disruption, and Violent Death in Chicago 1970-1990*

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*This is a revised version of a paper presented at the Population Association of America Annual Meeting. May 1996, New Orleans, LA. Correspondence should be directed to Gunnar Almgren, the School of Social Work at the University of Washington, Seattle, WA 98195.

ABSTRACT

Violent deaths, defined as homicides, suicides and accidents, are leading causes of death among working age populations. While large scale population studies and community case studies have established common linkages between race, sex, age, joblessness and all three forms of violent death, they have tended to be cross-sectional and to be focused on one cause of violent death to the exclusion of others. Utilizing 1970 and 1990 census data and vital records for 75 Chicago community areas, this paper examines the relationships between joblessness, family disruption, and all three forms of violent death across the black and non-black community area populations of Chicago at two distinct time points corresponding to William Julius Wilson's theory of the evolvement of urban underclass communities. We also consider the evidence for the mortality effects of variations in levels of racial segregation among black urban communities, entertaining the possibility that higher rates of racial isolation may have independent effects on some causes of violent death. The findings suggest that both homicide rates and accidental death rates are similarly predicted by high rates of joblessness and family disruption, and that these relationships have strengthened across both black and non-black communities over time. These relationships also vary by race and gender, but are generally stronger for males. Variations in levels of racial segregation among black community area populations appeared to have no consistent direct effects on black rates of violent death.

Violent death is the leading cause of death for Americans in young adulthood. For persons aged 25-44, suicides, accidents and homicide together comprise 39 percent of male deaths and 31 percent of female deaths (NCHS, 1996). Both race and social class also influence the magnitude of the risk of violent death, as well as the relative risk of particular forms of violent death. In general, African American men and women are more likely to be victims of homicide than whites, while rates of suicide are higher among whites (NCHS, 1996). However, the extent to which particular forms of violent death are influenced primarily by social class, race, racial segregation or economic opportunity are issues open to question and theoretical debate. Prior studies attempting to address the correlates of violent death have disagreed on the extent to which violence is explained by structural factors such as poverty, family composition and unemployment (Massey and Denton 1993; Sampson 1987; Wilson [1987] 1996), or whether racial isolation may itself have a uniquely deleterious contributions to either an emerging culture of violence (Massey 1995; Peterson and Krivo [1993] 1996) or the sustaining of a residual culture of violence (Blau and Blau 1982; Blau and Golden 1986; Huff-Corzine, Corzine and Moore 1986; Messner [1982] 1983). In addition, prior attempts to disentangle the relative influence of various structural factors on violent death have generally shared the common limitation of cross-sectional design, thus undermining the extent to which causal direction can be inferred.

In this paper we seek to address some of these problems by analyzing the relationship between violent death and some of its empirically implicated structural predictors over the period of profound urban social and economic change that occurred in the city of Chicago between 1970 and 1990. Utilizing data from the 1970 and 1990 censuses, as well as individual birth and death records corresponding to the same observation points, we investigate the relationships between unemployment and family household composition and neighborhood level violent death rates over both time periods. We also consider the

evidence for any independent effects of black racial segregation. As another contrast to most other studies of urban violence, we do not restrict our analysis to a single form of violent death such as homicide. Instead, we expand our analysis to the multiple forms of violent death that may be affected by race, unemployment, and family composition. Finally, we consider the influence of period changes in the relationship between employment levels, family composition and the violent death rates of female as well as male populations within each racial group.

Our analysis is based vital record and census data on the 1970 and 1990 black and non-black populations residing in the city of Chicago's 75 community areas as their boundaries existed in 1970. The community areas of Chicago are geographic sub-units that average 38,000 persons, originally defined more than 60 years ago by University of Chicago social researchers as aggregations of contiguous census tracts that shared distinct historical and social characteristics. Over the decades these community areas have functioned as politically and socially distinct urban ecological entities, and as such have been the basis of several other studies in urban ecology. Before proceeding with the details of the community area population analysis, we will begin with a brief theoretical review of the differences in homicide, suicide and accident rates by race and sex.

Race and Sex Differences in Homicide and Suicide

Racial differences in homicide and suicide have been observed through many decades of social research across a variety of social contexts. However, the patterns of these differences have been theoretically puzzling. While age-adjusted rates of homicide have been historically higher among blacks (Manton and Johnson 1987), suicide rates among blacks have been historically been lower than among whites as well as less sensitive to economic fluctuations (Henry and Short 1954; Lester 1972). Currently, rates of homicide

among black males age 15-24 are 9.8 times higher than white males, while their suicide rates are 13 percent lower (NCHS 1996). Although the relative differences in homicide rates become somewhat modified with age, racial differences in suicide between both black and white males increase with age. Despite the fact that rates of homicides and suicide are far more modest among females than males, the pattern of the racial differences between black women and white women mirror those of the males: black women are far more likely to die as homicide victims than white women but are much less likely to die from suicide (NCHS 1996).

The differences in homicide and suicide by race and sex have clearly underscored the limitations of purely economic models of violence. Were homicide and suicide rates purely responsive to economic factors, black rates of suicide should be more sensitive to their levels of socioeconomic disadvantage and the within race suicide and homicide rates of males and females should be far more alike. Empirically supported theoretical attempts to reconcile these differences between the suicide and homicide rates of whites and blacks have not developed far beyond the arguments first articulated by Henry and Short (1954). These writers suggest that homicide and suicide are really opposite extremes of aggression, with homicide being aggression turned outward toward others and suicide aggression turned inward towards self. In contrast to internalized aggression, so goes the argument, externalized aggression has a negative relationship with social status. Because externalized aggression is more consistent with the lower social status of blacks, again so goes the argument, homicide is a more common form of aggression for blacks than it is for whites. Both black scholars and culture of poverty theorists have added to this basic argument by maintaining that externalized violence and black masculine violence in particular are a response to social deprivation, direct oppression, and learned social behavior within the context of a basically violent society (Madhubuti 1990; Staples 1982).

Maris (1969) employed both ecological data and the investigative records of individual suicides to argue that lower rates of black suicide are explained within the normative framework offered by Durkheim, in essence stating that blacks have lower rates of suicide because their social aspirations are constrained by few opportunities for either upward or downward social mobility (thus freeing them both from the vicissitudes of economic fluctuation and status loss), blacks as a group have higher levels of social involvement with others, and their social behavior is highly regulated relative to that of whites. Whites on the other hand, are more likely to have constraints imposed on external aggression and are more at risk for economic and social status loss than blacks. This perspective suggests that suicide rates for blacks, though they might be lower than those for whites, should increase to the extent that there is both a loss of social status (as opposed to stable structural status deprivation) and a deterioration in the social bonds that constrain suicide.

Turning to sex differences in rates of homicide and suicide, it seems that the higher rates of homicide among males are more readily explained by simple theory and cultural stereotypes than are the higher rates of suicide among males. Higher rates of homicide among males are typically attributed to males having fewer constraints on direct expression of aggression and violence, whereas for females, externalized aggression and violence is far more likely to be seen as a deviant act (Archer and McDaniel 1995). Moreover, the male heroes among both black and white motion picture and television audiences are typically aggressive and at least selectively violent, reinforcing the point that males are socialized to view aggressive and violent behavior towards others as an expression of male gender identity.

The theoretical basis for higher rates of males suicide are more complex and equivocal for a variety of reasons. For example, it has long been observed that females are more often admitted to hospital care for suicidal behavior than males, while male rates of completed suicide are higher (Lester 1972). This is quite opposite of the picture

for homicide, where rates of non-fatal violence toward others and fatal violence toward others are both higher for males. Although males chose methods for suicide that are more violent and likely to be successful than females (e.g. a hand-gun versus an overdose), this distinction has never been regarded as a complete explanation of the disparity. Henry and Short (1954) suggest that sex differences in suicide are in large part explained by the lower social status of women, which isolates them from the status loss experienced by males. According to this perspective, while females are more likely to engage in suicidal conduct than males as their chosen mode of aggressive response to status loss, females are simply exposed to lower risk of such loss by virtue of their disadvantaged social status. This argument, at least in terms of its logic, obviously works well for racial differences and has been used accordingly by both Henry and Short and Maris (1969).

An alternative explanation for gender differences in suicide is provided through a merger of the theories of Emile Durkheim (1951) and more recent theories that argue that American women have a less individualistic orientation than their male counterparts (Gilligan 1982). According to Durkheim's classic theoretical framework, the most common forms of suicide (egoistic and anomic suicide) reflect a common weakness in the degree of integration between the individual and society. Women in American society, because they have a less individualistic orientation, acquire a network of buffering social relationships throughout the lifespan that men do not. Thus it is logical to expect that unemployed males and widowers have higher rates of suicide than unemployed females and widows, despite that fact that the latter are more likely to be poor'. This basic theory is underscored by the findings of empirical sociologists since Durkheim that have attributed variations in male suicide rates to various forms of social and economic dislocation (Easterlin 1987; Jin, Shah and Svoboda 1995; Lester 1994; Pampel 1996).

Race and Sex Differences in Accidental Death Rates

Although the classification of accidents as a form of violent death may be controversial, we believe there are compelling reasons to do so. Not only are accidental death rates a leading cause of "preventable" death, but like homicide and suicide, accidental deaths are often an immediate outcome of either self-destructive behavior or differential exposure to a harmful social environment. Thus it is no surprise that accidental death rates often covary with other forms of violent death (Guest, Almgren, and Hussy 1995). At the individual level, many accidents may represent the outcome of "sub-intentional" behavior, that is, health behavior that reflects strong ambivalence about the purpose of living in the same manner that persons who eventually commit suicide have a history of increasingly risky suicide gestures (Lester 1972). At the societal level, racial differences in accidental death rates may reflect processes of structural dislocation or neglect, where some groups are relegated to substandard housing, unsafe streets, and more hazardous employment.

Differences in accidental death rates between blacks and whites, though significant, are far less dramatic than those for homicide. However, in some respects the differences may be mediated by white economic advantage and suburban residence. If accidents from all causes are considered, the contributions of motor vehicle accidents actually make the death rates of white males aged 15-24 higher than those for black males. The conventional explanation is that the higher income and dominantly suburban residence of young white males promote the opportunity for increased exposure to death by motor vehicle accident. Non-motor vehicle accidental death rates are consistently higher for blacks of both sexes across all ages and the total accidental death rates for all ages are higher for black males across all but the 15-24 age group. If all accidents across all ages

are considered, black males are 1.2 time more likely to experience accidental death than white males, while females accidental deaths are nearly identical (NCHS 1996).

Although racial differences in accidental death rates may be entirely reflective of the long argued relationship between accidental death rates and social class (Baker, O'Neill, and Karpf 1984; Dutton and Levine 1989), other evidence suggests that unemployment itself may have powerful influence on the risk of accidental death. During working ages (15-64) the racial differences in accidental death rates are more pronounced for males, which may be reflective of long established racial differences in rates of unemployment. In our previous work (Guest, Almgren and Hussey 1995) we found that excessive accidental death rates during the working ages are strongly correlated with unemployment, a finding that is consistent with other studies which have suggested joblessness increases the likelihood of accidental death, particularly for males (Hammarstrom, 1994; Leigh and Waldon 1991). One question we investigate in this study is the extent to which joblessness appears correlated with the accidental death rates for both males and females, and whether these relationships appear to have changed over time.

Differences in Homicide, Suicide, and Accident Rates by Age, Race, Sex, and Period

A distinct disadvantage of metropolitan level studies of violence is that they aggregate highly diverse local social environments and population characteristics, thus attenuating important sources of variation. Consistent with our earlier paper on neighborhood ecology and working age mortality (Guest, Almgren, and Hussey 1995), we employed geographically identified individual birth and death records and census data to calculate sex and age-specific death rates for black and non-black Chicago community area populations². In this study we extend our analysis to include 1970 as well as 1990 data,

including the 75 community areas that comprised the city of Chicago in 1970. Holding to a minimum population count of 2500 persons, we calculated age and cause-specific death rates for 138 black and 216 non-black community area populations, divided over two time periods³. In addition, we calculated city wide violent death rates by race, sex, and period. We will first use the city wide rates to compare general mortality patterns, and then consider the influence of theoretical predictors at the community area population level.

[Table 1 About Here]

Table 1 shows the city wide age-specific violent death rates by race and sex over the 1970 and 1990 time periods. Each rate is reported as the number of deaths per 1000 persons. Several patterns are worthy of mention, beginning with differences by race.

Clearly, black males in 1970 and 1990 have far higher rates of homicides than any other sex/race group. Black male homicide rates are several times that of non-black males over most of the life span . Although the overall rates of black male homicide are about the same in 1990 as they were in 1970, in 1990 the age distribution of homicides is younger, perhaps reflecting an ultimate effect of the declining employment prospects for young black males that occurred over these decades. As a result of higher homicide rates in younger years, the 1990 black male has many more years of life lost due to homicide than the 1970 population. In fact, we estimate a period increase in the years of life lost due to homicide of 8 percent ⁴.

In contrast to homicide rates, black male accident rates appeared to have moderated somewhat between 1970 and 1990, though over nearly every age interval they are greater than those for every other group, including non-black males. The only exception to this are the 1990 15-19 and 20-24 age intervals, a finding that is consistent with national

patterns showing a reversal of the typical relationship between social class and accidental death rates due to differential access to motor vehicles (NCHS 1996). Consistent with national data, there are notable differences in the types of accidental deaths by race and sex in the Chicago population. The proportion of accidental deaths due to motor vehicle accidents was lower among black males and females (21.8 versus 31.7 percent for non-blacks), while the proportion of accidental deaths due to fire was higher (8.0 percent black versus 4.3 percent non-black). The proportion of accidental deaths due to fire was particularly high among black females, 14.5 percent of accidental deaths. Males of both races were far more likely die from falls of various kinds than their female counterparts, while the racial distribution of falls as a cause of accidental deaths was nearly equal.

The only violent death rate that black males are advantaged in relative to any other group is suicides. In both 1970 and 1990 suicide rates for black males are generally lower than those for non-black males, though in 1990 the suicide rates of young adult black males are much higher than in 1970 and even slightly higher than those for young adult non-black males. This is a clear departure from the demographic patterns observed in other studies and current national data.

During both 1970 and 1990, black females are clearly advantaged over both black and non-black males with respect to suicide and accidents, with the exception of accidents during childhood. Between ages 0-14, black female accident rates are more like those of black males. In fact, rates of childhood accidents among black children in Chicago under age 13 increased 25 percent between 1984 and 1994, while for white children they declined over these years. The dominant causes of death for black children include home fires, pedestrian motor vehicle accidents, and infant suffocation (Rogal 1996). While their 1970 rates of homicide were high relative to those non-blacks, black female homicides appear to have moderated in the adult years. With respect to suicide, black females have rates that are lower than all other groups.

Aside from the high levels of homicide and accidents among black males and surprising rise in suicide rates among young black males, there are two other mortality patterns which seem worthy of comment. The first is the growth of homicide rates among younger non-black males between 1970 and 1990. In 1990, non-black males between the ages of 15-24 were more than twice as likely to die from homicide than they were in 1970. This is an interesting finding in light of the fact that non-black male unemployment rates, in contrast to black male unemployment rates, appear to have changed little on an average city wide basis over this period (refer to Table 2). The second mortality pattern that seems worthy of comment is the apparent growth in the rate of homicides among the old, with older black males, black females, and non-black males all showing a remarkable increase in the rates of homicide. Perhaps equally remarkable is the exception, non-black females, which showed a decrease. While it might be easy to speculate that in 1990 older adults are much more likely to be exposed to violent crime than they were in 1970 due to such factors as increased levels of neighborhood violence, the fact that non-black females appear to be uniquely buffered seems to challenge this explanation. One not entirely inconsistent explanation for this exception is possible, i.e. due to their relatively higher life expectancy non-black females are more likely than the other populations to live in group quarters and institutional settings where homicides are exceedingly rare.

Theoretical Correlates of Violent Death

It is clear from the preceding visual review of mortality patterns that race, sex, age, and period effects are all relevant to violent death rates, and that homicides and accidents appear to covary in similar ways across race, sex, and age. Although suicides appear to be more independent of homicides and accidents, the increased rates of suicide among young

black males provides some support for the possibility that all three rates of violent death respond to similar structural causes.

A key finding of Sampson's (1987) cross-sectional analysis of metropolitan violence was that family disruption, measured as the proportion of total families headed by females, had a positive relationship to violence that was similar among whites and blacks (Sampson 1987: 372). According to the structural equation model tested by Sampson, which is consistent with the theoretical writings of (Massey and Denton 1993; Moynihan 1965; and Wilson [1987] 1996), family formation and stability are in large part dependent upon the capacity of males to obtain stable employment. The basic theoretical notion is that the ecology of urban violence is in large part determined by the prevalence of stable employment and two parent families, because both are powerful normative buffers against violent crime. Although the focus of Sampson's work was violent crime, in particular homicide, the degree to which other forms of violent death covary with homicide suggest the possibility that accidents and suicides are also sensitive to levels of joblessness and family disruption. Related questions are the extent to which the relationships between violent death, joblessness, and family disruption may vary by gender, race, and period.

Another important question is the extent to which the degree of black racial segregation may have independent effects on all three rates of violent death. Within Chicago as well as many other highly segregated cities, black racial segregation is highly correlated with unemployment, suggesting that the link between racial segregation and urban violence is a matter of economic dislocation and the related effects of family disruption and poverty concentration. However, it may also be the case that the black populations in highly segregated neighborhoods may have rates of violent death that are influenced by factors other than employment and family composition. Recent evidence and arguments by Massey (1993, 1995) Peterson and Krivo (1993, 1996), and Wilson

(1996) converge on the perspective that violence sustaining beliefs and norms evolve in response to the extended and severe economic deprivation and social isolation that is typical to highly segregated black underclass neighborhoods. If this is the case, we would expect that variation in the degree of racial segregation among the black populations would correlate directly with their violent death rates, and that measures of joblessness and family disruption would fail to mediate all of the effects of racial segregation.

[Table 2 About Here]

The structural predictors of violent death consider the two theoretically crucial dimensions identified previously, joblessness and family disruption. Joblessness is measured as the race/sex specific civilian unemployment rates for each population. Following the logic of Sampson (1987) and the theoretical perspective of Wilson (1987), we used two measures of family disruption for each population, the number of employed males per 100 females or the male marriage pool index (MMPI) and the proportion of families with children under age 18 headed by single females (FHFDC). Both variables represent the social process whereby a scarcity of males with sufficient means to support a family (i.e. stable employment) is argued to diminish both likelihood and stability of two parent family households⁵. Finally, we measure racial segregation as the xP_x^* index of black residential isolation, or the probability of residential contact between blacks (Guest, Almgren and Hussey 1995; Massey and Denton 1987). The probability of residential contact between blacks is estimated as

$$xP_x^* = \sum (x_i/X_i) * (x_i/t_i)$$

where t_i is the total population of tract i , x_i is the black population of tract i , and X_i is the community area population of blacks in community area i . Henceforth, this structural variable will simply be referred to as P^* . Highly segregated black neighborhoods of Chicago have probabilities of P^* that approach unity, while racially mixed areas have P^* values that range between .20 and .70.

Table 2 shows the bivariate correlations between the predictors for black and non-black community area populations in both 1970 and 1990. Consistency with theories of Wilson (1987) and the findings of Sampson (1987), would be reflected by correlations between male unemployment and the MMPI that are strong, negative, and consistent across both races, in addition to strong positive correlations between the male unemployment rate and the FHFDC. Although the correlations between male unemployment rates and FHFDC are strong and positive for both races in 1970, the relationship between the non-black MMPI and male unemployment is weak and statistically non-significant, perhaps reflective of the lower variation in non-black male employment rates in 1970. In contrast to 1970, the 1990 correlations are entirely consistent with theoretical expectations. That is, for both races the correlations between male unemployment rates and FHFDC are strong and positive and the correlations between male unemployment and the MMPI are strong and negative.

One reason why the correlations between the MMPI and the FHFDC are consistently strong and negative for the black populations in both 1970 and 1990 may be due to the fact that the black populations have a much higher rates of unemployment and therefore a smaller MMPI, i.e. suggesting that the relationship between the MMPI and the FHFDC may be more curvilinear⁶. It is notable that the correlations between black racial isolation and the measures of joblessness and family disruption are strong, positive, and consistent across both time periods.

In summary, the pattern of correlations between the predictors generally support the theoretical perspective that joblessness and family disruption are related processes, and that racially isolated black communities have been particularly vulnerable across both time periods. While the evidence for the male joblessness-family disruption hypothesis is somewhat more equivocal among the non-black populations, at least in terms of the role of the male marriage pool, this may be an artifact of the modest levels of joblessness and family disruption among the non-black male populations relative to the levels of both among black males. In this light of this consideration, some attention should be drawn to the enormous increases in the magnitude and range of black male and female rates of joblessness between 1970 and 1990, as well as the increased level of black family disruption over this period.

Observed Correlates of Violent Death

Our next step is to present an analysis of the relationships between violent death and the structural predictors discussed in the preceding section. We measured violent death as the age standardized death rates for homicides, suicides, and accidents over the age range of 15-64. We do this because, as argued in previous work (Guest, Almgren, and Hussey 1995), working age mortality is believed to be a durable benchmark of the mortality consequences of joblessness, racial isolation, and social distress. In addition, violent death is the largest single component of death during the working ages for both males and females. Comparison of working age homicide, suicide, and accidental death rates between black and non-black populations requires age-standardization to control for the large differences in the proportion of black males and females in the younger age ranges. Although the selection of a standard population is somewhat arbitrary, we follow the convention suggested by Shyrock and Siegel (1976) and use the unweighted average of

the age composition of the populations to be compared. That is, we average the 5 year age counts of the black and non-black populations by sex, utilizing the 1980 population counts for Chicago as the reference population. The resulting age-specific counts were then applied to the race, sex, and age-specific rates using direct standardization to derive the age-standardized 15-64 violent death rates (Palmore and Gardner 1983).

[Table 3 and Table 4 About Here]

Both tables 3 and 4 provide a wealth of information about the observed relationships between the rates of violent death and the relationships between rates of violent death and their structural correlates. Table 3 contains the bivariate correlations between violent death rates and their structural predictors for the 1970 black and non-black populations, and Table 4 contains the same data for the 1990 black and non-black populations. In addition, both tables provide essential descriptive information on the age standardized death rates. Again, rates are expressed as deaths per 1000 persons.

Age effect information is lost through age-standardization, however, patterns of mortality variation by race, sex and period are far less ambiguous. Even controlling for a younger age distribution, it can be seen from the data on both tables that rates of homicide and accidents are much higher among black males than any other population over both time periods. The black/non-black male homicide ratio was 8.7 in 1970 and by 1990 had diminished to 6.0 due to an increase in the non-black male homicide rate. The black/non-black accidental death ratio is consistent over both periods at two black male accidental deaths for every non-black male accidental death. Controlling for age brings the black male suicide rate below that of non-blacks for both periods. Although much smaller in magnitude, black female homicides and accident rates are higher than those for non-black females over both periods, and their suicide rates appear to be somewhat lower. Again, it

is clear that males are disadvantaged across all causes of violent death, and black males are disadvantaged with respect to homicides and accidents.

Within race correlations between causes of death are somewhat different for blacks and non-blacks, and show some changes between 1970 and 1990. However, there are also points of consistency. The strongest point of consistency is the covariance of male and female homicide rates across race period, with some increase in the magnitude of the correlation among the 1990 black populations. Another point of consistency is the strong relationship between homicides and accidents for males across both time periods. In addition, male and female accident rates for both races showed some tendency to covary in 1970, and by 1990 the correlations are much stronger.

A notable point of inconsistency are the suicide rates, which taken together show no stable patterns of correlation with other forms of violent death. However, the lack of consistency between suicide rates and other causes of death may not be surprising, when it is considered that higher rates of suicide, unlike homicide, are associated both theoretically and empirically with both ends of the socioeconomic continuum. In his earlier ecological study of suicide in Chicago, Maris (1969) found that non-black suicides tended to fall within two distinct ecological niches at opposite ends of the socioeconomic continuum: "slum" areas marked by high rates of unemployment and residential mobility, and "Gold Coast" areas characterized by stable white collar employment, affluence, and high educational attainment. The theoretical interpretation offered by Maris was that high suicide rates within the former neighborhoods are influenced by a weak normative structure while high suicide rates in affluent neighborhoods are influenced by sensitivity to status loss. However, there are no "Gold Coast" black communities in Chicago, which leaves us at a loss to explain why black suicide rates appear not to covary consistently with other causes of violent death.

If urban neighborhood population levels of joblessness and family disruption are similarly predictive of homicide and accident rates across race, period and gender, we should expect to observe that the homicide and accident rates of all 8 population groupings (2 race x 2 gender x 2 time points) are positively correlated with unemployment, negatively correlated with the male marriage pool index (MMPI), and positively correlated with the proportion of families with dependent children headed by single females. If racial segregation plays a direct role in violent death rates, we should also observe a positive correlation between our measure of racial isolation and either or both homicide rates and accident rates.

In terms of homicide rates, the results of the bivariate correlations are generally consistent with these theoretical expectations. That is, males and female homicide rates across both races and at both time points have a positive relationship with both male unemployment and the proportion of households headed by females (FHFDC). However, the role of the male marriage pool is inconsistent among the non-blacks populations, showing a modest positive relationship in 1970 and a theoretically consistent negative relationship in 1990. Clearly, the role of male marriage pool index is less ambiguous among the black populations, with both 1970 and 1990 showing a strong negative relationship between the MMPI and male and female homicide rates.

Accident rates also appear to be responsive to communal levels of joblessness and family disruption, though more so for males. Both the 1970 and the 1990 accident rates for black and non-black males are correlated with unemployment and the FHFDC, while for female accident rates, joblessness, and family disruption are only highly correlated the 1990 black female populations. Although there is a positive correlation between non-black female unemployment and accidental death rates in 1990, it is fairly weak. Consistent with implications of the absence of correlation between suicide and other

forms of violent death, the rates of suicide do not consistently correlate with the structural variables across race, sex and time periods.

Somewhat to our surprise, racial isolation appears to have no clear direct relationship rates of violent death. We also investigated the possibility the direct relationships between racial isolation and homicides, accidents and suicide are curvilinear. In particular, we thought it was possible that any or all rates of violent death would be reflect a racial isolation threshold effect. Although the bivariate scatterplots showed a tendency for homicide and accident rates to covary at moderate levels of racial isolation (between .6 and .8), the relationship appeared to be weak at best. Theoretically, the implication is the effects of racial isolation on working age violent death, at least at the neighborhood level, appear to be largely mediated through joblessness and other structural variables.

Perhaps the most interesting finding is that the correlations between homicides and accidents and all of their structural predictors grew stronger in all the theoretically predicted directions between 1970 and 1990 for black males, black females, and non-black males. Only the accident rates for non-black females did not conform to this pattern. However, even for non-black females, joblessness is more highly correlated with accidental death rates than in 1970. One possible explanation is that between 1970 and 1990 rates of family disruption increased both in the black and non-black communities, and within black communities the levels and variation of all structural predictors of violent death changed dramatically in theoretically pathological directions. That is, within the black communities of Chicago male and female rates of joblessness increased, the male marriage pool spiraled downward, and the average proportion of families with children headed by females increased by a third. Although the implications of these observations are particularly negative for the mortality patterns within black urban communities, it is clear that the strengthened relationships between joblessness, family

disruption and the prevalence of homicides and accidents are relevant to all urban community populations.

As the final step in our structural analysis of violent death, we tested a series of employment based prediction models for the homicide and accident rates of all four sex/race groupings (black males, black females, non-black males, and non-black females) that employed data from both time periods. Structural predictors of suicide were not analyzed further because their effects appeared to be weak and inconsistent. We chose to use race/sex specific unemployment rates as a proxy variable for both joblessness and family disruption because of the theoretically consistent high degree of correlation among these variables for both races and to avoid problems with multicollinearity⁷.

[Table 5 About Here]

Table 5 shows the results of a series OLS models that utilize population unemployment levels to predict homicide and accident rates. In all, eight models are tested that are specific to the 1990 levels of homicide and accidents for each of the four population groups. Each model employs the 1970 population specific levels of joblessness and the reference death rate as control variables in order to incorporate both the effects of changes in rates of joblessness and violent death over time and the effect of variation in rates of joblessness in 1990.

It is clear from the coefficients for explained variation that rates of joblessness are strongly predictive of homicide rates for the black male populations, black female populations, and non-black male populations. Although variation in rates of joblessness are somewhat important to the homicide rates of non-black females as well, the proportion of explained variation is far less dramatic. The predictive effects of joblessness on accidental death rates are also quite impressive and generally consistent

with those for homicides. The proportion of explained variation in accident rates is substantial and nearly identical for black males and females, and in the case of non-black males, joblessness is at least modestly predictive of population accidental death rates. The relationship between rates of joblessness and accidents appears essentially irrelevant to non-black females. It is also discernible, as the gender pattern regression coefficients is examined, that the economic and social conditions represented by employment appear to be generally more relevant to the violent death rates of males across both races.

The differences in the proportion of explained variation between black and non-black female populations and the magnitude of the negative coefficients for 1970 rates joblessness for the black female populations together suggest that joblessness is a far more relevant predictor of violent death for black women than for non-black women. The strong negative 1970 unemployment coefficients for black females in combination with the 1990 strong positive unemployment coefficient support the conclusion that black female populations that had a low level of unemployment in 1970 and a high level of unemployment in 1990 experienced high rates of both homicides and accidental deaths in 1990. Because these findings are unique to black females and consistent for both homicides and accidents, it suggests that for the black female populations, their sex-specific rates of joblessness are important and not necessarily a proxy for overall employment levels. The employment effect for black females relative to that for non-black females may be partially explained by the fact that labor force participation has been historically much higher for black women than for non-black women, primarily due to the relatively tenuous economic circumstances of black families (Wallace 1980).

Several important findings are drawn from the foregoing analysis. First, it is apparent joblessness and family disruption are related structural processes that are powerful predictors of the violent death among urban communities. While racial isolation may have indirect effects on black violent death rates through joblessness, the direct effects of

racial isolation appear absent. It is also apparent that while joblessness and family disruption are more strongly predictive of violent death rates among black populations, these processes are relevant to both black and non-black populations. A fourth important finding is that the relationship between the structural process of joblessness and family disruption and violent death appears to have grown stronger over the past two decades, particularly among the black urban communities. A fifth finding is that both deliberate violence interpersonal violence and accidental deaths are associated in similar ways to the structural processes of employment and family disruption, especially for males, while suicide rates appear to be more independent of these structural factors. Finally, it is apparent that the effects of labor force participation are more critical to the levels of violent death among black female populations than non-black female populations.

Violent Death and Life-Expectancy

Our final analysis examines the city wide variations in life-expectancy by race and by sex, as well as the variations across community area populations with high levels of joblessness. Utilizing 1990 census and vital record data, we constructed 1990 life tables for the city wide populations of black males, black females, non-black males and non-black females. In order to identify the apparent life-expectancy effects of endemic neighborhood level joblessness, we also aggregated population data from the three community areas within each of the four race/sex categories that had the highest 1990 levels of unemployment. Aggregating population data from three community areas for each race/sex category that share similarly extreme rates of joblessness enabled us to achieve more stable estimates of age and cause-specific mortality rates.

[Table 6 About Here]

Table 6 compares the 1990 estimated life-expectancies derived from the age and cause-specific mortality rates for city wide populations of black and non-black females, and the black and non-black male and female populations living in the three community areas with the highest population specific rate of unemployment. Thus for each race/sex category we have life-expectancies that are estimated for the city wide population, as well as life-expectancy estimates for the combined community area populations with highest 1990 rates of joblessness for that sex/race category.

In addition to estimating an overall life-expectancy for each of the eight populations (2 aggregate levels x 2 race categories x 2 sex categories), we also employed multiple decrement life table methods to estimate life-expectancies that are adjusted for the exclusion of violent death in each of its forms. While all human populations have some level of violent death, such hypothetical estimates are useful to the understanding of the general mortality effects of variations in patterns of violent death across populations. In this way, the life-year effects of particular causes of death on overall life-expectancy can be directly estimated by the differences between the life-expectancy values with and without the exclusion of particular causes of death⁸. We will begin by comparing the life-expectancy estimates between black and non-black males.

When only general city wide mortality is considered, it is apparent that the 1990 black males life-expectancies are 11 years below that of non-black males, with a somewhat wider gap across high employment areas. Based on the preceding analysis as well as the findings of other studies, we believe that the lack of convergence between the high unemployment life-expectancies of black and non-black males primarily reflects disparities in rates of joblessness. Within the non-black high unemployment population, the rate of male unemployment is 15.0 percent, while the rate of male unemployment for the black high unemployment population is 42.3 percent. For both these economically

distressed populations, removing violent deaths has a much larger impact than doing so at the city wide level, underscoring the effect of violent death in the economically distressed populations of both black and non-black males. Also in the case of both black and non-black males, the relative effects of homicides on life-expectancy are more significant than accidents in high unemployment areas. However, this is not true at the city wide level, where the contributions of homicides to the overall mortality pattern are more important than accidents only among black males.

Another point of disparity between black and non-black males is the relative contributions of suicides to reductions in overall life-expectancy. Among black males, the trivial summary effect of eliminating suicides is the same in high unemployment areas as it is at the city wide level, .25 of a life year. However, in the case of non-black males this effect is larger in areas of high unemployment, .83 of a life year versus .39 city wide. This suggests that for non-black males, living in high unemployment areas does have some type of relationship to rates of suicide, despite the lack of a simple linear relationship between unemployment and suicide. This finding is consistent with the theoretical predictions and earlier findings of Maris (1969), which lead us to expect non-black populations with high unemployment rates will have high suicide rates. Although Maris also predicted (consistent with these observations) that joblessness would have a lesser impact on underclass black males due to limited status mobility, we remain troubled by the evidence on Table 1 that suicide rates among young black males grew between 1970 and 1990. While it may be that black rates of suicide do not yet vary by levels economic distress, it appears possible that the lack of status mobility among black males is becoming an ineffective buffer against suicide.

Turning to female life-expectancies, it is apparent that accidents play a more important role than homicides city wide as well as in high unemployment areas. This is in contrast to the male pattern, where homicides play a more critical role than accidents. As

expected, the general mortality effects of homicide and accidents are higher in the economically distressed populations, and are modest relative to that of males. Another point of disparity between the male female patterns is suicide, where the relatively trivial effects of suicide on overall life-expectancy are the same for both black and non-black females. The major point of disparity between males and females however, is the relative effect of violent death where joblessness rates are comparably high. Among black males, 5.78 life years are lost to violent death in high unemployment areas. Economically distressed non-black male populations lose 4.82 life-years due to violent death. The life years lost to violent death among both black and non-black females, at equally high levels of joblessness, are a fraction of those lost to violence among males.

Summary and Conclusion

In many respects this study has echoed the findings and themes of other studies that link joblessness and family disruption to interpersonal violence. In addition, we have shown that accidental death rates are linked to the causes of interpersonal violence in generally similar ways across racial groups, and that accidents also play a large role in the restricted life-expectancies of populations with high levels of unemployment. We have also demonstrated that, at least in the context of Chicago, the relationships between accidents, interpersonal violence, joblessness and family disruption appeared to have grown stronger over time, particularly within black communities. While variations in the level of racial segregation among black urban communities appears unrelated to variations in rates of violent death, the interpretation of this finding should be tempered by the fact that 77.4 percent of Chicago's black residents live in neighborhoods with a P^* index of racial isolation that exceeds .85. Finally, we emphasize the fact that accidents and homicides together appear to dramatically suppress the limits of life-expectancy for

black populations in general, and also non-black male populations under conditions of high unemployment.

Unfortunately, the mechanisms through which variations in employment influence homicide rates are partially understood at best, and even less known about the paths through which joblessness and accidental death rates are related. Although the answers to these crucial questions should be vigorously pursued, the more compelling challenge is the economic revitalization of underclass communities.

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NOTES

Table 1. Homicide, Suicide, and Accident Rates by Age, Race, Sex, and Period

Panel 1 Black Males

1970	0-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75+
Homicides	.09	1.76	2.82	1.68	1.62	1.30	.95	.46	.22
Suicides	.00	.07	.17	.13	.14	.11	.09	.09	.09
Accidents	.44	.94	1.61	1.37	1.27	1.34	1.01	1.16	1.74

1990	0-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75+
Homicides	.20	2.26	2.95	1.96	1.27	.60	.53	.30	.49
Suicides	.00	.18	.27	.25	.11	.16	.12	.12	.16
Accidents	.31	.29	.74	1.13	1.44	1.17	.98	.85	1.38

Panel 2 Black Females

1970	0-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75+
Homicides	.06	.21	.43	.32	.26	.19	.11	.04	.06
Suicides	.00	.04	.03	.04	.03	.04	.02	.01	.03
Accidents	.29	.30	.35	.30	.29	.25	.29	.42	.70

1990	0-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75+
Homicides	.01	.17	.27	.25	.25	.16	.14	.09	.06
Suicides	.00	.03	.03	.06	.05	.05	.03	.04	.01
Accidents	.24	.13	.20	.28	.34	.18	.20	.28	.62

Table 2. Correlations of Predictors by Race

Panel 1: 1970 Black
N=31

	MU	FU	MMPI	FHFDC	RI	Mean	SD
Male Unemployment	1.0					.06	.03
Female Unemployment	.55***	1.0				.08	.03
MMPI	-.82***	-.73***	1.0			36.27	9.26
FHFDC	.75***	.65***	-.92***	1.0		.22	.10
Racial Isolation	.47***	.09	-.26	.20	1.0	.41	.42

Panel 2: 1990 Black
N=38

	MU	FU	MMPI	FHFDC	RI	Mean	SD
Male Unemployment	1.0					.23	.09
Female Unemployment	.84***	1.0				.19	.09
MMPI	-.83***	-.83***	1.0			29.08	11.42
FHFDC	.68***	.83***	-.73***	1.0		.34	.14
Racial Isolation	.46***	.18	-.53***	-.06	1.0	.81	.27

Panel 3: 1970 Non-Black
N=58

	MU	FU	MMPI	FHFDC		Mean	SD
Male Unemployment	1.0					.08	.01
Female Unemployment	.55***	1.0				.03	.01
MMPI	-.13	-.22*	1.0			52.87	7.32
FHFDC	.78***	.44**	-.27**	1.0		.04	.07

Panel 4: 1990 Non-Black
N=50

	MU	FU	MMPI	FHFDC		Mean	SD
Male Unemployment	1.0					.07	.03
Female Unemployment	.86***	1.0				.07	.04
MMPI	-.48***	-.34**	1.0			53.10	7.92
FHFDC	.72***	.75***	-.22	1.0		.07	.04

Note: Correlations are estimated only for community area populations of at least 2500 persons within the referenced race/sex/period category.

*=p. <.10, two-tailed test
 **=p. <.05, two-tailed test
 ***=p. <.01, two-tailed test

Table 3. Correlations of Age Standardized Death Rates and Age Standardized Rates with Predictors: 1970

Panel 1 1970 Black								
N=31	MHR	FHR	MSR	FSR	MAR	FAR	Mean	SD
Male Homicides	1.0						1.58	.81
Female Homicides	.43**	1.0					.23	.13
Male Suicides	.62***	-.13	1.0				.11	.11
Female Suicides	.10	.44**	-.12	1.0			.03	.04
Male Accidents	.68***	.47***	.16	.24	1.0		1.30	.53
Female Accidents	.18	.28	-.15	.12	.24	1.0	.31	.17
Male Unemployment	.59***	.39**	.20	.13	.56***	.16		
Female Unemployment	.54***	.09	.48***	.14	.51***	.15		
MMPI	-.64***	-.40**	-.24	-.16	-.62***	-.14		
FHFDC	.72***	.51***	.34*	.22	.62***	-.22		
Racial Isolation	.14	.10	-.05	.33*	.14	-.09		
Panel 2 1970 Non-Black								
N=58	MHR	FHR	MSR	FSR	MAR	FAR	Mean	SD
Male Homicides	1.0						.18	.21
Female Homicides	.31**	1.0					.03	.04
Male Suicides	.42***	.17	1.0				.16	.11
Female Suicides	.28**	.18	.44***	1.0			.06	.05
Male Accidents	.62***	.20	.30**	.13	1.0		.71	.46
Female Accidents	.30**	.07	.20	.27**	.24*	1.0	.19	.11
Male Unemployment	.70***	.28**	.37***	.20	.36***	.34***		
Female Unemployment	.37***	.02	-.12	-.13	.13	-.05		
MMPI	.27**	.29**	.52***	.18	.24*	-.01		
FHFDC	.42***	.29**	.05	.24*	.24*	.30**		

Note: Age standardized homicide, suicide, and accident rates (events/1000) are estimated only where the risk populations are greater than or equal to 2500 persons. The standard population utilized is the 1980 city population for Chicago.

*=p. <.10, two-tailed test
 **=p. <.05, two-tailed test
 ***=p. <.01, two-tailed test

Table 4. Correlations of Age Standardized Death Rates and Age Standardized Rates with Predictors: 1990

Panel 1 1990 Black								
N=38	MHR	FHR	MSR	FSR	MAR	FAR	Mean	SD
Male Homicides	1.0						1.68	.82
Female Homicides	.70***	1.0					.25	.16
Male Suicides	.24	.20	1.0				.19	.13
Female Suicides	.10	.17	-.25	1.0			.04	.04
Male Accidents	.59***	.38**	.02	.10	1.0		1.02	.47
Female Accidents	.46***	.32*	-.03	-.04	.48***	1.0	.22	.12
Male Unemployment	.83***	.57***	.26	.15	.66***	.40**		
Female Unemployment	.88***	.60***	.30*	.08	.67***	.57***		
MMPI	-.76***	-.44***	-.26	-.12	-.63***	-.51***		
FHFDC	.75***	.58***	.17	.15	.54***	.48***		
Racial Isolation	.23	.11	.25	.04	.18	.16		
Panel 2 1990 Non-Black								
N=50	MHR	FHR	MSR	FSR	MAR	FAR	Mean	SD
Male Homicides	1.0						.28	.28
Female Homicides	.30**	1.0					.04	.05
Male Suicides	.25*	.11	1.0				.22	.12
Female Suicides	-.12	-.04	.14	1.0			.06	.05
Male Accidents	.58***	.29**	.11	.04	1.0		.49	.21
Female Accidents	.17	.07	.22	-.04	.41***	1.0	.13	.10
Male Unemployment	.76***	.46***	.23	-.02	.53***	.17		
Female Unemployment	.75***	.47***	.14	.00	.58***	.24*		
MMPI	-.31**	-.20	.17	.42***	-.41***	.03		
FHFDC	.71***	.52***	.10	.04	.51***	.00		

Note: Age standardized homicide, suicide, and accident rates (events/1000) are estimated only where the risk populations are greater than or equal to 2500 persons. The standard population utilized is the 1980 city population for Chicago.

*=p. <.10, two-tailed test
 **=p. <.05, two-tailed test
 ***=p. <.01, two-tailed test

Table 5. OLS Regression of Race/Sex Specific Unemployment Rates on 1990 Age Standardized Homicide and Accident Rates

Panel 1: Black						
Homicides	Males (N=30)			Females (N=30)		
	b	B	t-Ratio	b	B	t-Ratio
Control Variables						
1970 Death Rate	.13	.12	.965	.06	.04	.301
1970 Unemployment Rate	10.25	.35	1.777*	-3.01	-.49	-2.493**
Predictor Variable						
1990 Unemployment Rate	4.58	.46	2.45**	1.95	.98	4.717***
Adjusted R-Squared=	.72			.46		
F=	26.36***			9.59***		
Accidents	Males (N=30)			Females (N=30)		
	b	B	t-Ratio	b	B	t-Ratio
Control Variables						
1970 Death Rate	.30	.33	2.011*	.21	.30	2.143**
1970 Unemployment Rate	-.96	-.06	-.215	-1.72	-.42	-2.023*
Predictor Variable						
1990 Unemployment Rate	3.05	.54	2.076**	1.08	.81	3.877***
Adjusted R-Squared=	.45			.41		
F=	9.15***			7.84***		
Panel 2: Non-Black						
Homicides	Males (N=49)			Females (N=48)		
	b	B	t-Ratio	b	B	t-Ratio
Control Variables						
1970 Death Rate	-.14	-.11	-.845	.13	.10	.769
1970 Unemployment Rate	4.94	.19	1.300	-.31	-.07	-.449
Predictor Variable						
1990 Unemployment Rate	6.06	.71	6.946***	.57	.49	3.232***
Adjusted R-Squared=	.56			.17		
F=	21.84***			4.26***		
Accidents	Males (N=49)			Females (N=48)		
	b	B	t-Ratio	b	B	t-Ratio
Control Variables						
1970 Death Rate	.11	.25	2.000*	-.09	-.10	-.724
1970 Unemployment Rate	-3.42	-.17	-1.220	-.18	-.02	-.119
Predictor Variable						
1990 Unemployment Rate	3.74	.56	4.389***	.61	.26	1.546
Adjusted R-Squared=	.30			.01		
F=	7.96***			1.17		

*=p. <.10, one-tailed test
 **=p. <.05 one-tailed test
 ***=p. <.01, one-tailed test

Table 6. 1990 Life-Expectancies, Adjusted and Unadjusted for Violent Death, by Race, Sex, and Areal Employment Levels

Panel 1 Black

Males

	e0	e0 without Homicides	e0 without Suicides	e0 without Accidents	e0 without Violent Death
Citywide	60.70	63.06	60.95	62.24	64.97
High Unemployment	54.19	57.63	54.44	55.99	59.97

Females

	e0	e0 without Homicides	e0 without Suicides	e0 without Accidents	e0 without Violent Death
Citywide	71.95	72.46	72.09	72.64	73.23
High Unemployment	66.61	67.47	66.70	67.54	68.46

Panel 2 Non-Black

Males

	e0	e0 without Homicides	e0 without Suicides	e0 without Accidents	e0 without Violent Death
Citywide	70.62	71.17	71.01	71.74	72.52
High Employment	66.12	68.19	66.95	67.97	70.94

Females

	e0	e0 without Homicides	e0 without Suicides	e0 without Accidents	e0 without Violent Death
Citywide	78.81	78.94	78.95	79.27	79.54
High Employment	76.93	77.04	77.00	77.65	77.84

Note: Life-expectancies for non-black high employment areas were calculated by aggregating the 3 community area non-black populations with the highest employment levels, and life expectancies for black high unemployment areas were calculated by aggregating the 3 community area black populations with the highest levels of unemployment. Each e0 refers to life expectancy at birth.

'It is interesting to note that although Durkheim's general theoretical formulation is compatible with this explanation of lower female suicide rates, he would probably disagree with this extension of his theory. Durkheim, perhaps through the lens of a nineteenth century male, seems to have regarded lower suicide rates among women as having some basis in a more "rudimentary" level of socialization than that found among males. "Because he is a more complex social being, [man] can maintain his equilibrium only by finding more points of support outside himself, and it is because his moral

balance depends on a larger number of conditions that it is more easily disturbed"

(Durkheim, 1951; p. 216).

³Death rates are calculated by averaging the cause specific death counts over three years, and then divided that value by the relevant census count, thus a 1970 rate is calculated by averaging the death counts for 1969, 1970, and 1971 and then dividing by the 1970 census. This method reduces measurement error in the estimate of small population mortality rates.

³Because Hispanics often self-report race and ethnicity differently on census surveys than either is reported on death certificates, non-Hispanic white death rates among populations with high proportions of Hispanics are inflated by the inclusion of deaths to persons that have been excluded in white census counts. Any adjustment for this reporting issue is arbitrary, so we chose to contrast the death rates of blacks and non-blacks.

⁴This estimate was derived by calculating multiple decrement tables for both 1970 and 1990, and comparing the average life years lost due to homicide, respectively 2.16 and 2.34 years.

⁵We also tested the potentially confounding influence of a young age distribution, in addition to using age standardized mortality rates. Despite the fact that age standardized mortality rates should capture a great deal of the age effect on mortality, we also thought it possible that there might be an independent age distribution concentration effect on violence. However, bivariate correlations between the proportion of persons aged 15-34 and age standardized violent causes of death were weak and generally statistically non-significant.

Because black and non-black rates of unemployment and therefore the MMPI values are so dissimilar, we could not evaluate this possibility with our data. In essence, the data from black and non-black populations do not share a sufficient region of the scatterplot. In order to confirm the legitimacy of this form of analysis, we employed principle components factor analysis to confirm the impression from the bivariate correlations that all three structural predictors loaded on a single dimension for all sex/race groups. Again consistent with theoretical predictions, the factor loadings for all three measures for family disruption and joblessness for all four sex/race groups were high and confined a single dimension. The average of factor loadings for each sex/race group ranged between .78 and .92, in each case in the predicted direction. Eigenvalues ranged from 1.92 to 2.57. Both the factor loadings and eigenvalues were higher for the black populations, providing more evidence for the conclusion that the joblessness-family disruption model of violence works somewhat better among urban black communities than among urban non-black communities.

Multiple decrement methods can provide only crude estimates of the effects of removing deaths from medical causes, because persons who die from medical causes often have multiple competing morbid conditions that will cause death. This is less of a problem when the effects of violent death are considered, because homicides and accidents are generally orthogonal with respect to non-violent causes of death. While suicides are less independent of medical status than other forms of violent death, these non-independent effects are assumed to be trivial in the aggregate.