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Suicide: A 15-Year Review of the Sociological Literature Part I: Cultural and Economic Factors

STEVEN STACK, PHD

Cultural and economic patterns from 130 sociological works on suicide from 1981 to 1995 are reviewed in this article. The traditional Durkheimian perspective on suicide was often questioned by research on the impact of the mass media, alcohol, class, modernization, religion, and politics. Major theoretical developments included the application of differential identification theory to Phillips's model of copycat suicide, the application of criminology's opportunity theory to suicide, and new explanations for the link between alcohol and the social suicide rate. Explanations are reviewed for the major new suicide trend: after half a century of convergence, male and female suicide rates are diverging. Finally, the review notes patterns of continued stability in suicide research findings in areas such as racial differences and economic strain.

The last systematic review of the general sociological literature ended with work in the late 1970s (Stack, 1982). This article provides an update on the sociological literature of suicide. It is restricted to two of the four major themes in sociological work on suicide—cultural and economic works. The review addresses several broad questions. First, do the research findings from the last 15 years, which use increasingly sophisticated research methodologies, reverse any traditional, core explanations of suicide? Second, what new theoretical developments have occurred in the last 15 years? Third, what explanations are there for new trends in suicide, such as the recent divergence in male to female suicide rates? Fourth, what explanations have

continued to withstand the test of time? These questions are raised recurrently as I review cultural and economic explanations of suicide.

A total of 988 abstracts of suicide articles appeared in *Sociological Abstracts* from 1981 to 1995. Following Stack (1982), this article focuses on those works that test major sociological theories of completed suicide and omits other articles, such as those on counseling techniques for survivors of suicide. A total of 130 articles and reports are reviewed in the current analysis. All deal with aspects of cultural and/or economic explanations of suicide. Part II of this article deals with the sociological work on social integration- and modernization-based explanations of suicide.

To provide a meaningful overview of major streams of sociological work on suicide as in the past review (Stack, 1982), the present work is composed of two parts, each serving as an article-length work: (a) research dealing with cultural explanations/learning theory, and economic strain approaches; and

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(b) research on modernization theory and social integration/bonds approaches. These four broad theoretical perspectives can affect each other, and they are not mutually exclusive (Stack, 1982, p. 43).

CULTURAL EXPLANATIONS

Normative considerations, such as the learning of role expectations and beliefs, are at the heart of cultural theories. These include changes in gender role expectations, norms regarding alcohol consumption, and messages in the media that might increase suicide through glamorization and role modeling.

Gender Roles Socialization

Men continued to have higher rates of suicide than women. In 41 of 42 nations surveyed (Kuwait being the exception), the male rate is higher than the female rate (Travis 1990). For example, according to recent data for the United States, the male suicide rate (19.9/100,000) was over four times the rate of females suicide (4.6/100,000) in 1993 (U.S. Public Health Service, 1995).

Reasons given for high male suicide rates include the following: (1) The female rate of alcohol abuse is one fifth that of males (Canetto, 1992; Rich, Ricketts, Fowler, & Young, 1988, p. 721). (2) The religiosity level, which provides numerous coping devices and negative attitudes towards suicide, is significantly higher for women than for men (Stack, 1983). (3) Women have stronger negative attitudes than men toward the acceptability of completed suicide and more positive attitudes towards suicide attempts (Canetto, 1992; Lester, 1988, p. 11). (4) Women have more flexible coping skills than men because of such factors as their greater number of role changes during the life course (Canetto, 1992; Girard, 1993). (5) Women are more likely to recognize and less likely to deny the warning signs of suicide, such as depression, than men (Canetto, 1992; Sanborn, 1990; Travis, 1990). (6) Women are

more likely than men to seek professional help, such as contacting a suicide prevention center (Canetto, 1992; Overholser et al., 1990). (7) Women have more extensive social support systems to draw on when they are in crisis than men do (Pescosolido & Wright, 1990). (8) Cultural emphases placed on being male increase lethal suicidality and include competitiveness, impulsiveness-decisiveness, and being "strong" (Stillion, 1984; Wilson, 1981). (9) Historically, women have had less access to lethal technology (e.g., firearms) than men (Kushner, 1985). (10) Failure in the primary adult male role (economic success) is more visible and obvious than failure in the primary adult female role, which is diffuse (success in relationships). Males are more likely to feel like failures in their primary role and therefore are more likely to suicide (Girard, 1993). The relative importance of these factors has yet to be systematically analyzed.

Perhaps the most marked new suicide trend is one from convergence to divergence in the ratio of male to female suicide rates. For the period from 1919 to 1972, Stack and Danigelis (1985) found that for 16/17 industrial nations, the ratio converged over time mainly because of a disproportionate increase in the female suicide rate. The authors explained the general trend by increases in divorce and female participation in the labor force (FPLF), factors which increase female stress. Hassan and Tan (1989), however, were unable to replicate these findings for the case of Australia for a longer period, 1901-1985.

Recent data indicate a widening of the male to female ratio in most industrial nations (Travis, 1990). Between the mid-1970s and the late 1980s the male to female suicide ratio increased in 13/21 Western European nations, stayed the same (less than a 0.10 change) in 4, and decreased only in 3 (Luxembourg, Norway, and Poland). Additional data from the World Health Organization (1980-1995) for North America and Oceania indicate an increase in male to female suicide ratios to a level in 1992 and 1993 that is even higher than the 2:1 to 3:1 ratios typical in Europe (Canada, 4.12; United States 4.28;

Australia, 3.87; New Zealand, 4.29). These changes are due disproportionately to a decrease in the female rate of suicide.

Austin, Bologna, and Dodge (1992) offer a preliminary explanation for the shift in the male to female suicide ratio in the United States. Drawing on Durkheim's (1966) general anomie theory, Austin, Bologna, and Dodge (1992) argue that the great changes in female roles during the 1950s and 1960s would increase suicide rates only up to a point where these changes become socially normative. Data indicate that the turning point in the acceptance of FPLF and other gender role changes was approximately 1970. Austin et al. (1992) find that changes in female role orientations, such as those regarding FPLF, fertility, and education, led to an increased female suicide rate until 1970 and contributed to a narrowing of the suicide gender gap. After 1970, these changes reduced rates of female suicide and led to a divergence in the gender-suicide gap. Krull and Trovato (1994), in an analysis of the gender gap in suicide in Quebec from 1930 to 1986, also found a widening of the gender-suicide gap in recent decades. Future research needs to apply a similar model to the many other nations that have not been subject to rigorous time series analyses.

Race

There has been little sociological research on race and suicide in the last 15 years. A book-length collection of essays honoring the centennial of Durkheim's (1966) *Le Suicide* did not, for example, have a chapter on race (Lester, 1994). A book-length review of various risk factors of suicide also did not have a chapter on race (Maris, Berman, Maltsberger, & Yufit, 1992). Although there is some public controversy over race and suicide, there is little empirical work. For example, there was a convergence in the rates of young African Americans and Caucasians starting in the 1970s (Stack, 1982), but there has been no systematic work on the sources of this convergence. Some work even ignores it (Early, 1992; Early &

Akers, 1993). Most sociological work on suicide does not, for example, analyze race-specific rates. A recurrent finding is that the suicide rate among Caucasians is double the suicide rate of African Americans (Lester, 1990a). For example, the Caucasian and African American rates, together with the Caucasian to African American ratio, has changed little in 20 years: (a) 1970, 12.4, 6.1, 2.03 ratio; (b) 1980, 12.7, 6.0, 2.12 ratio; and (c) 1990, 13.5, 6.9, 1.96 ratio (Stack, 1994a).

Societal discrimination against African Americans has been associated with a cultural response—the externalization of aggression (Henry & Short, 1954; Stack, 1982). When confronted with frustration, African Americans are more apt to blame society or others and to externalize aggression in such forms as homicide. In contrast, Caucasians cannot attribute their various social and economic failures to discrimination. As such, when Caucasians are confronted with frustration, they are more apt than African Americans to attribute the frustration to their own inadequacies. Aggression, then, is more likely to be turned against oneself in such forms as suicide.

It is contended that as discrimination is reduced, African American suicide should increase because African Americans will be more likely to blame themselves for their failures than to blame society (Kirk & Zucker, 1979). In an analysis of postwar data, South (1984) found that in years where the African American to Caucasian income differential narrowed, a sign of reduced discrimination, the African American to Caucasian suicide ratio also narrowed; this was a function of an increased African American suicide rate.

The historical discrimination against African Americans is said to have created a cultural "survival strategy" centered on ties to the African American family and church. These are life-saving institutions offering social support (Davis, 1980; Early, 1992). They provide a cultural buffer against threats such as racism and impoverishment.

Early (1992) argues that ties to the African American church are critical to learning

that "suicide is a white thing," thus fostering low acceptability of suicide among African Americans, and a lower suicide rate. Although Early offers only local data from a Southern town as evidence, national data from the *General Social Surveys* do indicate that African American culture is less accepting of suicide than Caucasian culture. For example, whereas 50% of Caucasians say that it is acceptable for someone to commit suicide if they have an incurable illness, only 31% of African Americans agree (Stack, 1994).

Following the lead of Early (1992), Stack and Wasserman (1995) explored the sources of low suicide acceptability among African Americans. The strongest predictors of low suicide acceptability among African Americans are church attendance and marital status, with the former being three times more powerful a predictor than the latter (Stack & Wasserman, 1995). These institutions do appear to shape a strategy for survival against suicide. Marital status plays less of a role in the prevention of suicide among African American than among Caucasians (Stack, 1996c).

Mass Media and Imitation Theory

Recent research has replicated and developed Phillips's (1974) imitation theorem that widely publicized how suicide stories trigger copycat suicides (for a review of 21 articles published through 1987, see Stack, 1990c). Support of a copycat effect was extended to television news stories (Phillips & Bollen, 1982; Phillips & Carstensen, 1988). This basic or generalized copycat effect has been found in other nations, including Japan (Ishii, 1991; Stack, 1996b) and Germany (Jonas, 1992).

Perhaps the most direct evidence for a copycat effect involved the publication of *Final Exit* (Humphrey, 1991), a guide to be read by terminally ill people considering suicide. It recommended asphyxiation as a method, and publication of this book greatly increased suicide by that means. In New York City, suicide by asphyxiation increased by 313% (from 8 to 33 suicides) in the year of the book's publication. A copy of *Final Exit*

was found at the scene of 27.3% of the suicides. However, the overall rate of suicide in the city surprisingly did not increase (Marzuk et al., 1994).

Much research was centered around two issues: (1) Which types of stories or suicide victims would spark the greatest identification in the audience and, hence, the greatest increase in copycat suicide? (2) What kinds of social contexts would facilitate a mood ripe for copycat suicide? (Stack, 1987a; see review in Stack, 1990c). Both these questions were guided by differential identification theory.

Types of Victims: Differential Identification. A key issue is whether publicized stories need to be concerned with well-known celebrities or ordinary people. That is, do people identify more with "superior" or "ordinary" persons? Wasserman (1984) reported that for 1948 to 1977, only publicized stories about celebrities produced a copycat effect. Further research found that only two types of celebrity stories affect the monthly national suicide rate. Stack (1987a) found an increase of 217 suicides during months of publicized entertainment celebrity suicide stories and an increase of 50 suicides for political celebrity suicides. In contrast, suicides by artists, villains (such as superspy suicides), foreign political chiefs, and economic elite celebrities have no significant impact on the American suicide rate. Furthermore, correcting for coding errors in the past work, (Stack, 1987a, p. 401), Stack (1990b) found that publicized suicide stories about common people also increased the suicide rate, similar to Ishii's (1991) results found in Japan. However, publication of celebrity stories increased the copycat effect 50% more than stories about noncelebrities, indicating that people identify more with the realm of the superior than the ordinary (Stack, 1990b).

Two studies indicate that people tend to use nationality as a point of identification. In the U.S. and Japan, suicides of foreigners did not trigger copycat suicides: only the suicides of persons within a given nation sparked copycat suicide of persons in that nation (Stack, 1987a; Stack, 1996b).

Another point of identification is based

on the notion that suicide often involves a wish to kill and a wish to die. Stack (1989b) explored the impact of publicized mass murders followed by the killer's suicide on the suicide rate. An analysis of mass murder-suicides that were covered on two or more television news networks found that coverage was associated with a significant increase in suicides in the real world.

Given a high rate of marital disruption in the United States, it is possible that stories concerning suicides of the divorced or people with marital trouble might serve as a point of mass identification for copycat suicides. In an analysis of monthly data from 1948 to 1990 Stack (1990f) found that stories about suicide victims with marital trouble were five times more closely linked to copycat suicides than all other publicized stories.

Given that many categories of mental disorder tend to be linked to suicide (Lester, 1992a), it is possible that stories concerning the suicides of persons with mental troubles would spark identification. This was indeed found to be the case in a study of celebrity suicides (Stack, 1987a). However, physical illness was not found to spark identification and copycat suicide (Stack, 1987a).

Audience Mood. The extent to which groups of people will copycat suicide depends on mood. This can be related to age. Age categories can be related to level of social integration and other suicidogenic conditions, making categories high or low in suicidal moods. Young (15 to 35 years) and old (more than 65 years) groups are receptive to suicide stories and copycat effects, but middle-aged groups are not (Phillips & Carstensen, 1988; Stack, 1991). Perhaps middle-aged people are shielded because they are highly integrated into society by having the highest incomes, strongest ties to marriage and family, lowest unemployment rate, and holding most of the power positions in society (Stack, 1991). The copycat effect is greatest for the elderly, a group with a high rate of suffering in terms of physical illness, economic pressures, and loss of significant others through death. A publicized story about suicide is associated with an increase of 10 elderly sui-

cides. If the story is about an elderly suicide victim, the increase is almost doubled to 19. This suggests the importance of "audience identification" with the victim (Stack, 1990d).

According to writers such as Durkheim (1966) and Wasserman (1989), suicide tends to decrease during a popular war. Factors such as the population's uniting against a common enemy, a decrease in unemployment, and a decline in alcohol consumption reduce the suicidal mood of a nation at war (Wasserman, 1992). If so, suicide stories should have less copycat effect in times of war. An analysis of monthly data on suicide between 1910 and 1920 found this to be the case. Wartime stories had no copycat effect, but peacetime stories had the expected copycat effect (Stack, 1988).

Musical Subcultures and Suicide. A new stream of research found a link between music-based subcultures and suicide risk. The subcultures identified were country and heavy metal music (Stack & Gundlach, 1992; Stack, Gundlach, & Reeves, 1994).

Specialists in the study of country music have demonstrated the presence of suicidogenic themes such as lost loves (a theme in three quarters of 1,400 country songs analyzed), lost jobs, financial strain, and use of alcohol as a coping mechanism (Stack & Gundlach, 1992). Participants in the subculture, such as radio listeners, may identify with these themes, thereby increasing suicide risk. An analysis of 49 metropolitan areas found that the greater the country radio audience, the greater the Caucasian suicide rate (Stack & Gundlach, 1992). Further analysis of *General Social Survey* data indicated that 62% of country music fans had guns in the home, compared with 40% of people who were not fans (Stack & Gundlach, 1995). Gun availability in the home is a key contributing factor to suicide (Kammerman et al., 1992). Furthermore, 27% of country music fans had been divorced or separated, another central suicide risk factor, compared with 18% of people who were not fans.

Cultural analyses of heavy metal music found that it contained suicidogenic themes with an emphasis on pessimism and fatalism.

These psychological states are considered critical to suicide risk (Stack et al., 1994). For example, Beck, Brown, Berchick, Stewart, and Steer (1990) found that patients with great hopelessness were 11 times more likely to eventually commit suicide than their hopeful counterparts. An analysis of data from the 50 states in 1988 found that the higher the number of heavy metal magazine subscriptions, an index of the strength of the metal subculture, the higher the youth suicide rate (Stack et al., 1994).

A series of research articles did not find support for a media-based learning theory of suicide. A key issue involved whether people can identify with fictional or make-believe victims or if victims had to be real people. A work finding a link between suicides in television soap operas and suicide (Phillips, 1982) was found to be flawed by measurement errors (e.g., codes for the days the stories appeared) (Kessler & Stipp, 1984). A series of four studies was done on the effect of four television movies about teen suicide. A study of New York City suicides found an association between fictional suicide in these movies and teenage suicide rates. These findings were largely not replicated in a series of subsequent studies on other cities, whole states, and the nation as a whole (Phillips & Paight, 1987; see review in Stack, 1990c). Stack (1990e) found that the films coincided with a highly publicized wave of real teen suicides in New York, a fact that may account for a spurious association between the films and suicide in New York. A study of a West German six-part television series on "Death of a Student," did, in contrast, find a link between the movie and teenage suicide (Schmidtke & Hafner, 1986). On the whole, however, fictional depictions of suicide do not appear to be associated with increases in suicide rates: stories have to be about real suicides.

Economic conditions might also be linked to a suicidogenic mood and copycat suicide. However, months with high unemployment and a suicide story were found to be no more likely to trigger copycat suicides as months with low unemployment and a sui-

cide story. The period analyzed, 1968–1980, had, however, no stories about unemployed suicide victims to serve as a direct point of identification (Stack, 1993). In a similar vein, the very high unemployment rate during the Great Depression might have served to generate a favorable audience mood for suicide. However, only stories about political celebrity suicides triggered copycat effects in that period. Very powerful social movements emanated from mass unemployment, and the movements for unionization and liberal politics may have channelled aggression from inner-directed to other-directed expressions (Stack, 1992).

There were several exchanges in *Social Forces* that debated the controversial link between the country music subculture and suicide risk. In the end, the debaters agreed that there is a significant bivariate relationship between country music and Caucasian suicide in 50 cities. In a multivariate analysis, Snipes and Maguire (1995) contend that country music had no effect on Caucasian suicide, but the authors failed to check for indirect and interaction effects. Stack and Gundlach (1995) demonstrated that the country music subculture has at least an indirect effect on suicide through its association with divorce. In addition, they showed that there was an interaction effect: cities that were high in both country music and divorce had a significantly higher suicide rate.

Opportunity Theory

Suicidologists have applied elements of criminal opportunity theory to suicide. Populations vary in the structured opportunities that exist for suicide. The extent of gun ownership and the availability of toxic gas are two of the key facilitators of suicide (Clarke & Lester, 1989; Gundlach, 1990; Lester 1990b, 1992c, 1996; Rich et al., 1990a, 1990b). For example, populations valuing gun ownership would be expected to have higher gun suicide rates, given that the former creates "lethal opportunities" for suicide by guns (Lester, 1996).

A key concern in this research is

whether gun suicides are displaced to nongun suicides as guns become less available. For example, if gun control reduces gun suicides, do the would-have-been gun suicides simply become suicides by hanging, overdoses, and other nongun methods?

In the United States from 1953 to 1978, firearm suicide increased from 4.9 to 7.1/100,000 people as guns became more available (Boyd, 1983), whereas nongun suicide decreased from 5.9 to 5.4/100,000. This suggests that some would-have-been nongun suicides were displaced to gun suicides as guns became more available. However, conceivably, the overall rate increased above and beyond a simple transfer of would-have-been nongun suicides to gun suicides.

Lester (1996) reviews 19 findings from 6 of his salient, mostly cross-sectional studies on the American states, regions, Australian states, and 20 nations. In all cases he determined that the greater the gun availability, the greater the gun suicide rate. Furthermore, there was general support for a displacement thesis. In 12/19 findings it was determined that the higher the gun suicide rate, the lower the nongun suicide rate. This suggests that people may simply switch to other methods of suicide when guns are less available. Most of this research does not include control variables making it not only difficult to weight the importance of guns against other predictors of suicide, but also difficult to ascertain whether any gun-suicide relationship is spurious.

Lester (1996) summarizes four of his principle studies that all find that the greater the strictness of gun control laws in the 48 states (especially restrictions on the selling and purchasing of handguns), the lower the gun suicide rate. In contrast to his research on gun availability per se, there was no evidence supporting a displacement thesis for the United States.

A strict handgun control law was enacted in October 1976 in Washington, DC. It prohibited the sale, purchase, transfer, and possession of handguns (unless owned before 1976). Comparing the period 1968–1976 with 1976–1987, Loftin, McDowell, Wiers-

man, and Cottley (1991) determined that gun suicides significantly declined from 2.6/month to 2.0 per month, a decrease of 23% after the law was enacted. Suicides by other (nongun) means also declined from 4.4 per month to 4.0 per month, or by 9%, which was not significant. Hence, no evidence was found for a displacement effect.

Major restrictions on guns, including the virtual forbidding of handgun ownership, went into effect in Canada in 1978. Two studies of Ontario come to different conclusions regarding a displacement effect. In the short run, comparing 5 years before the law was enacted with the 5 years after, there was a decrease in gun suicides but a parallel increase in nongun suicides (mainly from leaping), an increase indicating displacement (Rich, Young, Fowler, Wagner, and Black, 1990a). However, when comparing a period of 10 years before and after the law was enacted, Carrington and Moyer (1994) found not only that gun suicides dropped significantly from 30% to 26% of all suicides, but the overall rate of suicide also declined from 11.7/100,000 to 10.6/100,000, indicating the absence of a displacement effect. Neither investigation includes control variables, such as those that measure the vitality of the marital, economic, and religious institutions.

The findings of the research on guns and suicide are nearly all problematic because of the lack of multivariate models. Such models are needed to test for spurious and suppressor effects. Several studies are available that weigh the importance of guns with sociodemographic predictors of suicide risk.

Using individual level data, one study compared 438 suicides and 438 matched (living) controls from the same neighborhood. Having a gun in the household increased the odds of death by suicide 4.8 times. The increased odds for the other risk factors were (a) psychotropic medication prescribed, 35.9; (b) previous hospitalization from drinking, 16.4; (c) active use of illicit drugs 10.0; (d) living alone, 5.3; (e) failure to graduate from high school, 4.1; and (f) drinks alcohol, 2.3. Although important, gun availability was only the fifth most important factor of the

seven in the model (Kammerman et al., 1992).

One of the few studies raising the possibility that various social variables may depend on gun availability to maximize their impact on suicide was done on U.S. cities. Gundlach (1990) found that living alone, an index of absence of family support, was strongly related to suicide in U.S. cities with high gun availability. In contrast, for cities with low gun availability, living alone was unrelated to suicide. Hence, some social variables known to be predictive of suicide may depend on gun availability to facilitate their association with suicide.

One of the few studies that introduces controls for socioeconomic variables (e.g., age, unemployment, income, religion, region, etc.) was done on all 50 states. In an analysis of the Caucasian male (ages 20 to 64 years) suicide rate, Medoff and Magaddino (1983) found states that either had a wait to purchase law or a license to purchase law had a suicide rate that was 3.02 units lower than other states. Given a mean suicide rate of 28/100,000, this amounts to a 10.8% reduction in suicide. Other variables were more closely tied to the variance in suicide. Western states, for example, had a suicide rate 10.64 units or 38% higher than other states.

In summary, there is agreement that gun availability is linked to suicide, but there is a thorny split in the findings on the displacement thesis. The consensus is that as guns become more available gun suicide rates increase, but that nongun suicides are reduced, indicating displacement. Gun control tends strongly to reduce gun suicides, but the bulk of the evidence in to date indicates that the would-be gun suicides are not displaced to nongun suicides. However, most of the research suffers from the lack of control variables, leaving the question of spuriousness open.

Detoxification of Domestic Gas. Traditionally half of the suicides in Britain were because of poisoning with highly toxic coal gas used to heat British homes. As this gas was replaced with natural gas from the North Sea, the British suicide rate decreased by

40% (Clarke & Mayhew, 1989). An analysis of Switzerland between 1950 and 1968 yielded similar results with no evidence that suicide was displaced to other means (Lester, 1990c). However, detoxification of domestic gas had a lower impact on suicide in The Netherlands, Scotland, and the U.S. Debate on this issue continues with speculation that the overall suicide rate may have failed to decrease in The Netherlands after detoxification because of ensuing increases in economic and social suicidogenic conditions. In the U.S. evidence suggests that 81% of the decline in domestic gas suicides may have transferred to suicides by car exhaust between 1946 and 1970 (Clarke & Lester, 1989, pp. 16–35; Lester, 1992a).

As with the case of gun availability, this body of research tends to lack control variables, and it is unclear if the relationships that are reported are spurious.

Social Construction of Suicide Rates

Populations may differ in the extent to which they socially condemn and desire to hide suicides as accidents or other less socially stigmatized causes of death. For this reason, official suicide statistics have often been suspected of underreporting the incidence of suicide (Kleck, 1988; Van Poppel & Day, 1996).

Pescosolido and Mendelsohn (1986) found evidence of systematic misreporting of suicide in 404 U.S. county groups. Seven of 48 coefficients representing constructionist variables (e.g., coroner is elected, professional toxicologist or pathologist is used in classifying deaths) were significant predictors of suicide. However, many of these coefficients had the unexpected sign. More importantly, misreporting in the official statistics had little discernable impact on the effects of major sociological variables on suicide (e.g., divorce, religion).

The results of a series of studies largely defend official data. Kleck (1988) is one of a few studies that takes suicide overcounts into consideration (i.e., the erroneous certification of false suicides). His analysis of

detailed cause of death (COD) data for the U.S. found that the maximum possible undercount of suicide was about 26%. However, taking false suicides into account (overcount), the net maximum undercount is less than 10%. Phillips and Ruth (1993) do not take into account false suicides but estimate the following gross undercounts: males, 2.79%; females, 5.59%; Caucasians, 3.33%; and African Americans, 14.92%. These error rates do not appear large in relation to error rates in the measurement of other sociological variables such as attitudes, crime rates, and the incidence of alcoholism. Indeed, official federal crime data undercount crime by 67%, including 49% of rapes, 50% of burglaries, and 49% of robberies (McCaghy & Capron, 1994, p. 130). Although Phillips and Ruth caution against using official data for African Americans, this is precisely one group for which there is a likely significant overcount (Peck, 1983) and as such, the net undercount for blacks may be minimal.

Hlady and Middaugh (1988) document an undercount for Alaska, but attribute it to delayed certification of the COD, not to a quest to conceal the COD. In the case of Canada, the average potential underreporting was estimated at 17.5% for women and 12% for men. The underreporting was not considered large enough to preclude meaningful analyses of most sociological phenomena (Speechley & Stavrak, 1991). Although there are probable undercounts of suicide in the U.S. and abroad, the measurement errors involved are not considered potent enough to substantially affect the results of most sociological work.

Ceremonial and Holiday Effects

The influence of culturally important temporal factors and ceremonial occasions can influence suicide. For example, holidays, weekends, and springtime tend to be associated with rising expectations for fulfillment. If these expectations are not met, it seems plausible that suicide might increase (Gabenesh, 1988; Phillips & Wils, 1987; Stack, 1995b).

Durkheim (1961) proposed that a group's integration level is partly shaped by its involvement in collective ceremonies. Public holidays have been viewed as a case in point, a time of celebration and feeling close to others (Phillips & Wils, 1987). As such, holidays should reduce suicide rates.

Phillips and Wils (1987) report an overall decrease of 102.5 suicides during the 11 days constituting a holiday period. The holiday death dips are as follows: men, -47; women, -22; Caucasians, -56; African Americans, -10; 20-64-year-old people, -32; and people over 65 years old, -45. No holiday death dip was reserved for 0-19 year olds possibly because their daily routines are less affected by holidays.

Although there was an overall dip in suicide, it occurred before the holiday. After the typical holiday, suicide increased (Phillips & Wils, 1987; Stack, 1995b). Gabenesh (1988, p. 129) argues that this is because of "broken promises." Holidays raise expectations for individual fulfillment. When these expectations are not fulfilled by the holiday, suicide risk increases. Furthermore, frustrations involving such broken promises might also explain any rise in suicide after a weekend ("blue Monday") and in the freshness of springtime. An analysis of daily data from 1973 to 1980 lent support to these theories (Stack, 1995b).

The rise in suicide in the springtime in the U.S. is, however, relatively low compared to other nations. The degree of seasonality in suicide in 28 nations was related to modernization. The greater the percentage of the labor force in agriculture, the greater the seasonality of suicide (Chew & McCleary, 1995). This factor explained two thirds of the variance in seasonality. This finding is consistent with a classic Durkheimian perspective on seasonality in suicide in that it is a consequence of seasonality in social activity (e.g., farming).

Alcohol Consumption

Cultural values and beliefs surrounding the acceptability of drinking can influ-

ence the level of alcohol consumption in a group. Until the 1990s, sociological work had neglected alcoholism as a possible structural determinant of suicide. This neglect may be because of the influence of Durkheim (1966), who ruled out alcoholism as a social cause of suicide. This position, however, is not supported by his own data (Pope, 1976; Skog, 1991). Recent sociological work has proposed a connection between societal levels of alcohol consumption and the social suicide rate (Norstrom, 1995; Stack & Wasserman, 1993).

A link between alcohol and suicide has been suggested by several arguments. First, Wasserman (1989) argues that to the extent that alcohol promotes depression (Kendall, 1983), shifts in the national level of alcohol consumption (such as those brought about by war or prohibition) can significantly affect suicide rates by affecting national levels of depression. Depression is a key predictor of suicide (Lester, 1992a). Second, alcohol consumption can also act as an agent of emotional disinhibition, fostering impulsive behavior, including suicide (Kendall, 1983; Skog, 1991). Third, over time, alcohol abuse can result in lower self-esteem, given that it is associated with such failures as those in marriages, parenting, work, and friendships (Kendall, 1983; Lester, 1992a). Fourth, as the alcoholic loses ties to social networks, the ensuing social isolation and loss of support can increase the odds of suicide. Fifth, there are pharmacological effects. Alcohol can greatly increase the chances that an otherwise safe dose of sedative drugs will become a lethal dose.

Individual Level Analysis. Strong support for the alcohol–suicide linkage has been found using individual level data. In a large study of suicides at 43 American colleges, 65% of the suicides of college students had diagnosable substance abuse disorders (Rivinus, 1990). In a review of the microlevel literature, it is estimated that 18% of alcoholics subsequently commit suicide and approximately 21% of all suicides are by alcoholics (Lester, 1992b).

Many of the studies in this new stream of sociological research do not control for

the covariates of alcohol consumption, and, as such, their findings are somewhat problematic. Nevertheless, the work that does introduce controls for confounding variables tends to support the substance abuse–suicide link. For example, in a national sample of 10,906 deaths, Stack and Wasserman (1993) determined that high alcohol consumption increased the odds of death from suicide versus natural causes by 1.93 times, independent of marital status, gender, and other covariates of alcohol consumption.

Research on individuals over time has also lent support to the alcohol–suicide linkage. A panel study of 40,000 Norwegian conscripts over a 40-year follow-up found that the lifetime prevalence of suicide by age 60 was 4.76% for alcohol abusers, compared with 0.63% for nonabusers (Rossow & Amundsen, 1995). A Swedish panel study of 50,465 conscripts over 14 years determined that high alcohol consumption raised the odds of suicide 1.55 times, compared with social isolation (reporting no friends), which raised the odds 2.91 times, contact with the police 1.48 times, and psychiatric hospitalization 11.32 times (Allebeck, 1990).

Aggregate Over Time Research. Fourteen over time studies presented 89 findings on 17 nations (Gruenewald, Ponicki, & Mitchell, 1995; Lester, 1992d, 1995; Norstrom, 1988, 1995; Rossow, 1993; Skog & Elekes, 1993; Skog, Teixeira, Barrias, & Moreira, 1995; Smart & Mann, 1990; Wasserman, 1989, 1992). In six nations, the findings overwhelmingly supported the thesis of a positive relationship: the greater the alcohol consumption, the greater the suicide rate (Canada, 28/36 findings; Czechoslovakia, 1/1; France, 1/1; Hungary, 1/1; Sweden, 16/16; and the U.S., 8/15). The strength of this association varies considerably wherein a one liter per capita increase in alcohol consumption is associated with the following increases in suicide: France, 2.6%; Hungary, 10%; Sweden, 15%; and Norway, 16%. In the U.S., a 10% rise in alcohol consumption was associated with a 1.4% rise in suicide. A 10% rise in each of the following brought the indicated change in suicide: income, –1.74%; divorce, +0.66%; and unemployment, +0.46%

(Gruenewald et al., 1995). However, in two nations the reverse was true: greater alcohol consumption was associated with less suicide (Australia, 2/2 findings; and Switzerland, 2/2). In six nations there was no relationship between alcohol and suicide trends: Belgium, 0/1 findings; Finland, 0/2; Luxembourg, 0/1; Netherlands, 0/1; New Zealand, 0/1; and West Germany, 0/1. In three nations the findings were mixed. In Portugal and Norway, male suicide was related to alcohol trends but female suicide was not. In Denmark, one study found no relationship and another found a negative relationship.

The alcohol-suicide link at this level of analysis may depend on the level of alcohol consumption. If this is too low, it may not be enough to affect the national suicide rate and it may have to reach a certain level to affect this rate. Also, given typically low levels of alcohol consumption by women, the link may work only for men in some nations.

Skog (1991) cautions that alcoholism and suicide may be related only because they share common causes such as divorce. Divorce rates are linked to alcoholism and suicide rates. However, to the extent that chronic alcoholism decreases social networking and general social integration, it can have a direct bearing on suicide (Skog, 1991). Empirically, data presented in Lester's (1995) time-series analyses of data for each of 13 nations indicate that in 7/13 nations, the correlation between divorce and alcohol consumption is above 0.90. These nations include Sweden, Norway, Canada, and the U.S. These four nations are precisely the ones where a large portion of the research on these matters has taken place and as such, the results of those investigations need to be taken with great caution. Given multicollinearity, the effects of divorce may load on alcohol consumption thereby making divorce artificially insignificant and visa versa. More work is clearly needed in this new area of research.

ECONOMIC APPROACHES

When the terrors of life outweigh the terrors of death, the economist's costs/bene-

fits equation indicates increased suicide risk. Sociologically, groups faced with greater terror include those under economic strain, namely the poor and unemployed. Financial strain can also influence suicide indirectly through its association with factors from the other three paradigms. For example, financial strain can increase alcohol consumption and marital discord which, in turn, can enhance suicide risk. Furthermore, an unemployed person may move to another state or nation in search of employment. In so doing, suicide risk can increase through breaking suicide-preventative bonds, such as those to friends and relatives.

Class, Income, and Income Inequality

From a Durkheimian perspective, poverty serves as a school of "social restraint" (Durkheim, 1966, p. 254), and, as such, should reduce the suicide rate. However, past research has largely found the opposite. Poverty increases the propensity towards suicide through its association with suicidogenic conditions, including unemployment, financial stress, family instability, and mental troubles (e.g., depression, ill physical health, work alienation, alcoholism, and crime victimization) (Stack, 1982).

Recent research was largely consistent with 1970s work on the negative relationship between socioeconomic status (SES) and suicide (Schony & Grausgraber, 1987). In an investigation of Sacramento County, CA, Lampert et al. (1984) found, for example, a ratio of 5 : 1 between the suicide rates of professional technical workers (26.5/100,000) and farm laborers (135.1/100,000). For Australia, Burnley (1995) found that manual workers had the highest suicide rate (32.5/100,000), compared with 20.5/100,000 for professional, managerial, and technical workers. Stack (1995a) reports that the suicide rate for laborers in 1985 in the U.S. was 94.4/100,000, a rate eight times the national average. For Great Britain, the greater the SES the lower the rate of suicide (Platt, 1992, p. 1199).

More generally, economic stressors were found to be the second (of eight) most

important correlates of suicide in 195 cases of suicide in San Diego. Economic stressors were involved in 24% of suicides, compared with conflict-separation-rejection at 31% and medical illness at 19% (Rich, Warsrad, & Nemiroff, 1991).

Some caution needs to be exercised when interpreting these findings because they typically do not control for the correlates of lower SES such as divorce. For example, having an income of greater than \$25,000 reduced the risk of suicide by 35% for Caucasian males, but when controls were incorporated for marital status and six other correlates, the relationship became insignificant (Kposowa, Breault, & Singh, 1995). However, in Australia, controls for marital status did not break down the suicide-class relationship. Divorced manual workers had the highest incidence of suicide of any group (Burnley, 1994). For 261 Canadian census divisions, a 10% increase in income brought a 6.11% decrease in the suicide rate (Hasselback, Lee, Yang, Nichol, & Wigle, 1991).

Although there is an overall inverse relationship between class and suicide risk, there are exceptions. For example, certain high-status occupations are marked by high suicide rates. These include dentists, whose odds of suicide are 6.64 times greater than the rest of the working-age population. Dentists suffer from relatively low status within the medical profession and have strained relationships with their clients; few people enjoy going to the dentist (Stack, 1996a).

Little work is available on the impact of income redistribution on suicide among the poor. Zimmerman (1987) found that welfare spending in the 50 states lowered suicide rates through its association with lowered divorce rates and increased incomes.

Recent work has started to explore economic deprivation in relation to the gap in income between the rich and the poor. It is assumed that poverty is even more frustrating, and suicide potential should increase when there is a large income gap between the poor and the rich. Research on income inequality and suicide is mixed. For 3,000 U.S. counties, the degree of income inequality is

unrelated to suicide in one model (Breault, 1988) and related in another (Kowalski, Faupel, & Starr, 1987). However, if the analysis is restricted to either the middle or top third of counties in urbanization, urban counties being ones that provide better social conduits for promoting relative deprivation, the greater the income inequality, the greater the suicide rate (Kowalski et al., 1987).

Unemployment

Unemployment can affect suicide risk directly through eroding the incomes, economic welfare, self-esteem, and other suicidogenic factors among the unemployed (Platt, 1984; Stack & Haas, 1984). However, unemployment may affect dependent family members of the unemployed person through such means as lowering their financial well-being. Furthermore, in times of unemployment, suicide may be increased through a higher level of anxiety among the employed who fear losing their jobs. In addition, periods of unemployment are often marked by a decrease in real wages and underemployment. For example, although most unemployed people find work within a few months, their new jobs are usually lower in skill and wages. As such, re-employed persons may be at a high suicide risk because of relative deprivation (Stack & Haas, 1984). As Platt (1984, p. 95) cautions, however, the selection process may apply. That is, psychologically disturbed persons may be both more suicidal and more likely to quit or to be dismissed from their job than nondisturbed persons.

In his review of research on unemployment and suicide from the 1920s through about 1980, Platt (1984) makes a distinction between four types of analyses. First, individual, cross-sectional studies compare the actual suicide rate among members of the unemployed with that for employed persons. For example, for London, England, he reports that the suicide rate for the unemployed was 73.4/100,000 versus 14.1/100,000 for the local population (Platt, 1984). In all 17 type I studies reviewed by Platt (1984),

there was substantial evidence that unemployed persons have higher suicide rates than their employed counterparts. The only exception was for women, a group that according to traditional gender stereotypes is not as vulnerable to joblessness as men, who are still often under greater pressure to be breadwinners. In the work since Platt (1984), type I studies yield the same results. Schony and Grausgruber (1987) find, for example, a suicide rate of 98.3 for the unemployed, compared with a rate of 25.0 for the general population in Austria. In Italy the two respective rates were 3.2/100,00 and 2.1/100,000 from 1977 to 1987 (Platt, 1992). For an exception see Sholders (1981).

Second, in aggregate studies, unemployment and suicide are treated as properties of macrosociological aggregates like cities, states, or nations, rather than properties of individuals. Platt (1984) located nine aggregate studies analyzing data at one point in time (cross-sectional), but found only one that established an unemployment-suicide link.

Thirteen type II studies were published since Platt's (1984) review, and seven had at least some evidence supporting an unemployment-suicide link. Research using small units of aggregation is generally considered best because the population in such units is more homogeneous (Platt, 1984, p. 95). Such research tended to find a link between unemployment and suicide rates. This was true of studies of the 3,000 U.S. counties (Breault, 1988; Faupel, Kowalski, & Starr, 1987), and for the largest counties (Kowalski et al., 1987), but not in a less well-specified model of counties (Breault, 1986). However, unemployment was not related to suicide in 294 large cities (Burr, McCall, & Powell-Griner, 1994). In contrast, almost all work on large units of aggregations (all 50 states) found no relationship (Girard, 1988; Breault, 1986). For Canadian provinces, there was a significant relationship between unemployment and youth suicide rates, especially for people ages 20 to 29 years. The latter group is often one of the hardest hit by unemployment because they lack seniority and experi-

ence (Trovato & Vos, 1990). Data from 18 regions in Italy, 25 Swedish counties, and 30 regions in Norway did not support the hypothesis (Norstrom, 1995; Platt, 1992; Rossow & Amundsen, 1995). Pooled cross-sectional/time series data for the 50 states in the U.S., however, gave strong support to the unemployment-suicide link (Gruenewald et al., 1995).

The weaker findings in type II studies may be because of unemployed persons moving to areas of low unemployment to try to find work (Platt, 1984, p. 99). Furthermore, in areas of high unemployment, unemployed people may feel less stress, be less socially stigmatized, and be more socially integrated than unemployed persons in areas where unemployment is relatively low (Platt, 1992, p. 1198).

Third, individual-longitudinal studies are another type of Platt's analyses. Nearly all of eight studies that followed a cohort of persons over time found that unemployment increases suicide risk (Platt, 1984). For example, in a 25-year follow-up, Hagnell and Rorsman (1980) found that 50% of people who committed suicide had experienced job problems, compared with only 18% of people who did not commit suicide.

Fourth, in analysis of 31 aggregate time-series studies, Platt (1984) reports that 21 show a significant positive relationship, 6 have mixed findings, and 4 show no relationship between unemployment and suicide. More recent data tends to confirm this pattern for U.S. monthly time series (Stack, 1987a; Wasserman, 1984); annual U.S. data for men and women (Stack, 1987b; Yang & Lester, 1994); Danish data from 1951 to 1980 (Stack, 1990a); and data from 1966 to 1981 in Quebec (Cormier & Klerman, 1985). Hassan and Tan's (1989) analysis of data from 1901 to 1981 for Australia provides evidence for men but none for women, whereas Lester's (1992d) restricted analysis from 1966 to 1985 for Australia finds no evidence for men. Similarly, Canadian unemployment trends from 1950 to 1982 were related only to male suicide rates (Trovato, 1986). Finally, postwar Norwegian unemployment was un-

related to suicide, possibly because full employment policies generally kept it below 2%, below a floor where it might affect the national suicide rate (Stack, 1989a); however, the relationship holds if the Great Depression era is included (Norstrom, 1995).

In general, the unemployment-suicide link has been confirmed for three of four research methodologies. Evidence suggests, however, that male suicide rates—males being more tied to careers than females—are more sensitive to economic downturns than are female suicide rates. Individual level research is still needed to ascertain which groups (e.g., unemployed, underemployed, those fearing job loss, etc.) are most affected in times of economic downswings and to what extent psychiatric disorders may cause both unemployment and suicide (Platt, 1992).

Relative Cohort Size

Relative cohort size (RCS; the size of the 15- to 29-year-old population to the 30- to 64-year-old population) represents a new approach to economic strain. It emphasizes the negative economic consequences associated with being in a relatively large cohort (Ahlburg & Schapiro, 1984; Easterlin, 1987). When a large generation (e.g., baby boomers) enters the labor market, the market becomes glutted and problems such as low wages, unemployment, and underemployment will result. Faced with these economic problems, noneconomic suicidogenic problems (e.g., divorce and low fertility) can multiply the effect of RCS on suicide rates. Ahlburg and Schapiro (1984) demonstrated that shifting RCS had a significant effect on male and female suicide rates between 1948 and 1976 in the U.S. Pampel and Peters (1995, p. 168) caution, however, that a generous welfare state may be able to cushion or even offset the negative effects of RCS. Full employment policies of the Scandinavian nations might constitute such a cushion. In an analysis of 12 industrial nations from 1950 to 1980, Stack (1997) determined that RCS was related to youth suicide rates in market econ-

omies (e.g., U.S., Canada) and mixed economies (e.g., Sweden) but not in command economies (e.g., Hungary). These data indicate that the RCS model may generalize to most capitalist nations. Pampel and Peters (1995) caution, however, that the general RCS model of social problems including suicide may be less potent for the period after 1980.

CONCLUSION

The major new suicide trend in the United States and abroad is the growing divergence in the male to female suicide ratio. After half a century of convergence (Stack & Danigelis, 1985), this ratio is now increasing mainly due to a falling female suicide rate. Austin et al. (1992) and Stack (1987b) have explained the divergence in terms of growing cultural support for new roles for women. This has greatly reduced the anomie women experienced from FPLF in the earlier parts of the century.

As suicide research approaches a new century of work, its greatest challenge may be to explain the continued and expanding gender difference in suicide here and abroad. Although there are numerous ad hoc explanations of this difference (Canetto 1992), these explanations have never been rigorously evaluated in any systematic fashion. It still is not clear, for example, if the male preference for more lethal methods is more important than the greater use of alcohol by men, or lower religiosity levels, than women in the generation of suicide.

Other key challenges include: (a) the conditions under which gun control does not lead to a displacement of suicide; and (b) resolving the inconsistencies in the cross-sectional aggregate research on unemployment and suicide.

Areas where the findings from the 1970s have been largely replicated by the research from the last 15 years include: (a) race and suicide; (b) copycat effects in the media as they refer to real suicides; (c) the greater risk among the lower classes of suicide; and

(d) holiday effects where the greater social integration in holiday periods tends to reduce suicide risk. The 15-year period has brought in new evidence that official suicide data, although marked by some measurement error, is valid enough for sociological analysis.

New perspectives on suicide have linked musical subcultures (heavy metal and country) to suicide risk; opportunity factors such as gun availability to suicide; RCS to suicide risk (especially in market economies); and alcohol consumption to suicide.

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