

Suicide and Life-Threatening Behavior 30(2) Summer 2000
© 2000 The American Association of Suicidology

163

Suicide: A 15-Year Review of the Sociological Literature Part II: Modernization and Social Integration Perspectives

STEVEN STACK

This article reviews the findings of 84 sociological studies published over a 15-year period. These studies deal with tests of the modernization and/or social integration perspectives on suicide. Research on modernization, religious integration, and political integration often questioned or reformulated the traditional Durkheimian perspective. A major new theoretical development, Pescosolido's religious networks perspective, gained some empirical support in the 15-year period. The strongest support for social integration theory came from research on marital integration, wherein more than three quarters of the research found a significant relationship. Finally, further research on migration, a force lowering social integration, continued to tend to find a positive link to suicide.

This article reviews 15 years of sociological work on suicide. It focuses on two research streams in this literature: studies linking suicide to the modernization process, and studies relating suicide to social integration. Modernization perspectives link suicide trends to the processes of industrialization, urbanization, and secularization. Social integration perspectives relate suicide to the vitality of major social institutions, including religion, the family, and political institutions. This review assesses to what extent the empirical work from 1980 to 1995 supported traditional hypotheses in these areas of suicide research.

A total of 988 abstracts of suicide articles were listed in *Sociological Abstracts* from

1981 to 1995. Following Stack (1982a), the present study focuses on those articles that test sociological theories of completed suicide. It omits other articles, such as those investigating suicide attempts and the philosophical debate over physician-assisted suicide. A total of 84 works on suicide are covered in the current review.

MODERNIZATION AND SUICIDE

Modernization, or the processes of industrialization, urbanization, and secularization, was at the heart of the classic theories of suicide (Durkheim, 1966). All three processes can erode the ties of the individual to society. During the industrialization process, economic opportunities may be much greater in urban areas, thus luring people away from agricultural areas. Ancestral ties to kin, home places, churches, friendships, and other institutions in the countryside are often severed through the process of urbanization. The na-

STEVEN STACK is Professor of Sociology, Wayne State University, Detroit, MI.

Address correspondence to Steven Stack, Department of Criminal Justice, Wayne State University, 2305 Faculty/Administration Building, Detroit, MI 48202-3622. Tel.: (313) 577-2705. Fax: (313) 577-9977. E-mail: aa1051@wayne.edu.

ture of work can become far more complex through the process of occupational differentiation, a process that is driven by a quest for efficiency in production. Specialization in the labor force is ultimately associated with an expansion of the educational system, a system that tends to promote questioning religion and weakening of common faith. To ensure adequate demand for the fruits of industrial machine production, society's cultural systems may shift sharply from a religion-dominated system to a cultural system centered on the value of materialism. The hold that society exercised over the individual in feudal Europe was substantially weakened by these three processes in the urban centers of the late 19th century. Without a strong bond between the individual and society, Durkheim posited that life would become relatively meaningless and suicide potential would increase.

As we entered the postmodern era, the relationship between modernization and suicide fundamentally changed. As discussed later, after the initial shocks of modernization, new generations may adapt to postmodernism and become less suicidal.

The research on modernization and suicide has been marked by a recurrent problem. All three indicators tend to be highly associated, so that they cannot be analytically separated empirically.

Industrialization

Simpson and Conklin (1989) found that indicators of modernization all loaded at .83 or higher on an index of economic development. This factor was strongly and consistently related to suicide in all of their analyses of 71 nations in 1970.

Pope, Danigelis, and Stack (1983) also had to merge three indicators of modernization because of multicollinearity between them (telephones, education, and urban population). However, this is the only study of long-term trends from 1900 to 1975, a more reliable research methodology for studying the process of modernization. There was no automatic relationship between moderniza-

tion and suicide in the 20 nations studied: in one third it increased suicide, in one third it decreased suicide, and in the remaining third it was unrelated to the suicide rate. Hence, in some societies there are counter trends that eventually offset malintegration induced by early phases of industrialization, urbanization, and secularization.

Education and Secularization

In a study of France between 1852 and 1914, it was found that the greater the literacy rate, the higher the suicide rate (Gillis, 1994). Gillis speculates that the educational change in this period was part of a broader cultural change. In early modernization, culture perhaps shifts from facilitating an explosion of violence against others to promoting an implosion of violence against the self.

Kowalski, Faupel, and Starr (1987) report a positive relationship for 3,018 U.S. counties from 1975 to 1977, whereas Breault (1988) reports insignificance. Further analysis indicated that this is true for only the most urbanized (i.e., most modernized) third of such counties (Kowalski et al., 1987).

However, recalling the first analysis of individual level data, Stack (1995a) found that the influence of education varied according to race. For Caucasian men, the group that apparently benefits the most from education, each year of education reduced the odds of suicide by 2%. In contrast, for African American men, each year of education increased the risk of suicide by 8%. Stack (1995a) speculates that by 1990, society had been substantially secularized for several generations and that education's effects on secularization had been saturated for some time. The main influence of education on suicide is tied to the extent that it benefits groups in their materialistic quest for better jobs and higher incomes. Groups such as women and minorities, who have not received the same payoff from education as Caucasian men, will illustrate a positive relationship between education and suicide. This will not be because of secularization, but instead the frustrations associated with discrimination.

Urbanization

Stack (1982a, p. 52) synthesized the conflicting research evidence on urbanization and suicide by hypothesizing a quadratic relationship where suicide rates would first increase in the early stages of urbanization, given the social disruptions of rural to urban migration. Thereafter, suicide rates would plateau and possibly decline as urban dwellers adjusted over generations to living in an urban environment.

A study using the oldest set of existing, annual suicide data found support for a curvilinear relationship between urbanization and suicide. In Finland from 1800 to 1900, a 1% increase in urban population was associated with a 0.22% increase in suicide. In contrast, from 1900 to 1985, a 1% increase in urban population was associated with only a 0.12% increase in suicide (Stack, 1993a).

Historical and cross-national studies that use samples representing nations at all levels of development often still find positive relationships between urbanization and suicide (Simpson & Conklin, 1989; Pope, Danigelis, & Stack, 1983). However, cross-sectional work restricted to an advanced industrial nation, such as the U.S., often finds no relationship or a negative relationship (Kowalski et al., 1987).

Kowalski et al. (1987) note that major sociological theories of suicide assume an urban, industrial environment. In an analysis of U.S. counties in 1980, they find that sociological explanations of suicide (e.g., marital and religious integration, poverty) work only in medium and highly urban counties. The types of relations that mark urban environments may be better conduits for social structural influences than rural environments (Kowalski et al., 1987). For most urban counties, high percentages of urbanity significantly reduced suicide rates. These findings also suggest support for Stack's (1982a) curvilinear hypothesis.

SOCIAL INTEGRATION

Durkheim's (1966) social integration perspective continues to stimulate consider-

able sociological work on suicide. Groups marked by a lack of subordination to group life, such as elderly widowers, divorced people, and nonchurch members, are assumed to have less meaningful lives and be at increased suicide risk. Durkheim's (1966) perspective on religion has been substantially reformulated in light of recent empirical research that failed to confirm it in terms of the classic Protestant versus Catholic measure. Stack's (1982a) migration/culture-shock perspective has been largely confirmed and substantially developed by the more rigorous work of writers such as Trovato. The debate over the impact of multiple roles on suicide continues. The theory of political integration has largely not been supported by the most sophisticated recent research.

Age and the Life Cycle

If we restrict the analysis to U.S.-based data, the relationship between age and suicide is one of the most documented cases in U.S. sociology. In 1985, suicide for men tended to increase with age (peaking at 49.1/100,000 at age 75 years or more). In contrast, female suicide tends to peak at middle age (45 to 55 years) at 9.2/100,000, and then declines to 6.0/100,000 for age 75 years or more (Stillion & McDowall, 1991). These well-known patterns do not replicate, however, for less-developed nations and several other industrial nations given differences in level of malintegration by age (Stillion & McDowell, 1991). The somewhat contradictory results for the age-suicide relationship have puzzled researchers. However, the level of economic development may help to explain this problem.

Recent research on 49 nations has established a link between the age distribution of suicide and level of economic development (Girard, 1993): the lower the level of development, the greater the emphasis placed on kinship relations for economic functions (e.g., inheritance of jobs and land); the greater a woman's vulnerability and need to marry to establish an identity and financial security, the greater a man's need to have

sons to support him in old age. Troubles in mate selection, failure to bear male children, and infertility in marriage can lead to suicide risk. Indeed, in an analysis of 49 nations, less developed nations tend to have a suicide peak centered around youthful age cohorts (15 to 34 years) and suicide rates decline thereafter, with the passing of kinship-related life crises.

In contrast, as nations develop, identity becomes less tied to kinship relations and more tied to an achievement orientation in the labor market. One's job and wealth are set by the labor market, and security in old age is more a function of social security and pension plans than reliance on male children for support. With increased age, one has more accumulated advantages (e.g., high salaries, high prestige) to lose from failure in the labor market and, hence, suicide rates tend to increase with age. Girard (1993) finds that a curve with an upward slope best fits the data on developed nations.

Girard (1993) contends, however, that the relationship between age and suicide will change first for men as nations develop. Economic development creates an achievement orientation among men before it does so for women. Even in the most developed nations, female identity, although based on work and kinkeeping, is slanted more towards kinkeeping than male identity. Women are more apt to leave the labor force, for example, to care for young children than are men. Hence, Girard contends, female suicide rates will tend to peak at ages 45 to 55, as they do in the U.S., since this is when kinkeeping responsibilities reach their apex and children are beginning to leave home and form their own marriages. As age increases, the sheer number of failures at kinkeeping are bound to increase. It is at this time that women are most apt to feel suicidal if their children, after many years of effort and kinkeeping, are indeed failures (e.g., fail to get married, become single parents, are drug users, in trouble with the police, and so forth). Once children leave home, Girard (1993) argues, women's stress decreases because they feel less responsible for their children's success.

Teenagers and Young Adults. After increases by over 200% between 1950 and

1977, teenage suicide has largely plateaued at a high level (Maris, 1985; Stack, 1983a, 1985). Sociological work has stressed macro-level factors, including the decrease church attendance and religious support systems for the young (Stack, 1983a). Each 1% drop in church attendance was associated with an increase of 0.59% in youth suicide. The youth labor market was increasingly marked by the stressors of unemployment and, more generally, underemployment. Each 1% rise in unemployment was associated with a 0.11% increase in youth suicide (Stack, 1983a).

Substantial increases in divorce and marital stress were highly associated with the decrease in church attendance (Maris, 1985; Stack, 1985). Dysfunctional families contribute to youth suicide both in family of origin and among young couples (Maris, 1985).

Research based at the individual level often indicates, however, that teenage suicide follows a suicidal careers or "pathways" model (Maris, 1981). Work on adolescent suicides finds that they typically have long histories of disturbed behavior, typically including substance abuse (Rich, Sherman, & Fowler, 1990b). Very negative relationships with parents characterize the formative years of teenage suicides (White, Murdock, Richardson, Ellis, & Schmidt, 1990).

There has been some debate over whether the alleged stress of college life results in a higher rate of suicide among college students as compared with nonstudents. A review of the literature on suicide among college students finds that their rate is lower than that of nonstudents. Furthermore, no association has been found with institutional size or prestige (Schwartz, 1990).

Middle Age. Suicide rates have been declining for the U.S. middle-aged population, but the reasons for this trend are not clear (McIntosh, 1991). Middle age is often perceived as a time of stability, acceptance, and comfort in one's life, or simply a time of high social integration. For example, middle-aged people have better jobs and most of the power positions in society.

The Elderly. Key stress factors underlying suicide among elderly men and women include: (a) economic strain; (b) a deepening

sense of fatalism triggered by physical illness; (c) sensory and perceptual losses; (d) the increased popularity of secular solutions such as euthanasia to pain; (e) loss of friends and spouse through death; (f) loss of work-related roles that provided meaning; (g) institutionalization and the associated loss of freedom; and (h) the increasing costs of health care (Li, 1995; Travis, 1990; Glass & Reed, 1991; Canetto, 1992; Altermatt, 1988; Carney, Rich, Burke, & Fowler, 1994). In the U.S., these stressors disproportionately affect elderly men, whose suicide rates, unlike those of elderly women, tend to increase with age. In a sample of 11 nations, however, both male and female elderly suicide rates were related to economic strain, with the proportion of the gross national product being spent on pensions (Altermatt, 1988).

Curiously, the suicide rate for persons over 65 has declined. For example, in 1989 it stood at 20.1/100,000 and by 1993 it had fallen to 19.0/100,000. Standard structural factors do not explain suicide trends among the Caucasian elderly (McCall & Land, 1994).

Domestic Integration

Durkheim (1966) contended that marriage constitutes subordination of the individual's egoistical tendencies to a spouse. As such, it gives and takes emotional support. It helps the individual to lose one's egoistical problems by helping another. Marriage also regulates various appetites such as sexual desire. Marriage increases integration and regulation, brings greater meaning, and should reduce suicide risk. Divorce, in contrast, should increase suicide risk because it breaks the bonds between the individual and marriage (Stack, 1982a).

It is noted that interpretations of Durkheim (1966, pp. 175, 274) often contend that the effect of marital status on suicide follows a gendered effect. In particular, divorce may be protective for women. An analysis of aggregated data on 404 county groups found that divorce rates had little bearing on female suicide rates until rates of elderly women were inspected (Pescosolido & Wright, 1990,

p. 42). However, analyses of individual level data indicate that divorced women of nearly all age groups are at risk of suicide. The magnitude of this risk relative to married women is about the same as the magnitude of risk of divorced men relative to married men (Stack, 1990b).

Divorced people have higher levels of a series of suicidogenic conditions than the general population. For example, they have a depression level 40% higher than their married counterparts, a morbidity level 52% higher for men and 43% higher for women, increased financial pressures, and the increased risk of alcohol abuse throughout the divorce process. Divorced people may experience a deep sense of disorientation, shame, guilt, and a generalized feeling of emotional hurt (Stack, 1994, 1995c).

A review of 132 studies and 789 findings from 1880 to 1995 for the U.S. and many other nations found that 615 of 789 findings (77.9%) demonstrated a positive link between divorce and suicide (Stack, 1995c). It also determined that the link between divorce and suicide depended, in part, on the type of data analyzed (Stack, 1995c).

A total of 37 studies providing 493 findings used cross-sectional individual level data (Stack, 1995c). For example, in Austria, divorced people have a suicide rate of 128.6, compared with 30.5/100,000 for their married counterparts. The coefficient of aggravation (COA) is the rate for the divorced to the rate for the married. Here the COA is 128.6/30.5, or 4.22. Divorced Austrians are 4.22 times more likely than their married counterparts to die of suicide (Schony & Grausgruber, 1987). For the U.S. the COAs for divorced people are generally in the 3 to 4 range (Stack, 1990b), as they are in most other nations (Stack, 1995c). In all, 426 findings (86.4%) from the 37 studies supported the thesis that the suicide rate of divorced people is higher than the rate of married people (Stack, 1995c). The exception to this rule was for very young people, where both marriage and divorce are statistically uncommon.

For cross-sectional aggregate data, 48 studies providing 117 research findings were

located (Stack, 1995c). A total of 92 of 117 (78.6%) of the findings reported that the higher the rate of divorce (in a state, county, city, etc.), the higher the rate of suicide. For example, Breault (1986) found that in all 5 census years from 1940 to 1980, divorce was not only related to suicide, but it was also the most important correlate of state suicide rates. For the 3,000 U.S. counties, divorce was the third (of 17) most important variable linked to suicide (Kowalski et al., 1987). All four studies on samples of U.S. cities also find a strong positive link between divorce and suicide (Bainbridge, 1989; Gundlach, 1990). Research from other nations also supports this relationship, somewhat more strongly than that based on the U.S. This is surprising because divorce rates in other nations are typically less than half those rates of the U.S. Nevertheless, they are able to affect the social suicide rate (Stack, 1995c).

Lester (1995) notes that the aggregate association between divorce and suicide rates may refer to a general deterioration of marriage and family life, extending beyond divorced people. For example, he finds that the divorce rate is not only associated with the suicide rate of divorced people, but also with the suicide rates of the married, widowed, and single populations. Hence, it is likely that the divorce rate is a generalized index of the vitality of married life and extends beyond the world of divorced people.

For individual longitudinal studies, 14 investigations were found. A total of 17 of the 19 findings were positive (89.5%) (Stack, 1995c). For example, in a study of 50 suicides in Stockholm and 50 suicides in Los Angeles, it was determined that 55% and 53% of the marriages, respectively, were getting worse in the year before the suicide. Furthermore, in 32% and 26% of the cases, divorce proceedings had already started before the suicide. In fact, 16% and 26% of the suicide victims had threatened suicide at least once during the year before the divorce in an effort to avoid divorce (Stack, 1995c). Most of these investigations are based on very small samples and need to be taken with caution.

A recent and innovative type III study

followed 203,437 Caucasian men for 7 years using the 1979–1985 Longitudinal Mortality Study. From multivariate hazard regression estimates, divorce raised the risk of death from suicide 2.36 times (Kposowa, Breault, & Singh, 1995).

For research based on longitudinal aggregate data, 35 studies were found that presented 166 findings (Stack, 1995c). Divorce trends were positively associated with suicide trends in 77/166 findings (46.4%). The research is more supportive of the relationship in the U.S., where 54.3% of the findings link divorce trends with suicide trends.

In the most sweeping descriptive study, Lester (1994a) found that for each of 21 nations, using annual data for the period 1950 to 1985, 10 had a significant and positive relationship between divorce and suicide trends. No explanation of the even split in findings was provided.

Type IV studies brought substantially less support for the divorce–suicide linkage than types I–III studies. This may be because of probable floor effects. The U.S. has a divorce rate that is the highest in the world. Most nations have divorce rates less than half of the 5/1,000 in the U.S. There may be a floor effect where divorce must reach a certain level before it affects the national incidence of suicide (Stack, 1995c).

Perhaps divorce will affect national suicide rates only when other institutions are weak. If the economy and religion are strong, these may act as buffers against the ill effects of divorce. If they are weak, the effect of divorce may be multiplied so that it will have an impact on suicide. In the U.S., for example, the unemployment rate has been among the highest in the world. In this context, divorce may be most apt to influence the national suicide rate.

Additional contextual variables may also condition the effect of divorce on suicide. Motohashi (1991) found, for example, that divorce influenced suicide in Japan only in the period after 1973 when the nation was undergoing Westernization.

Children. A second aspect of domestic integration is having children. Parenting

has been assumed to decrease suicide risk through such means as increasing subordination to the family unit, thus reducing self-destructive egoistic tendencies (Durkheim, 1966; Stack, 1982a). This is, perhaps, the most neglected area of suicide research. Recent research has found that the higher the birth rate, a measure of the frequency of homes with young children, the lower the suicide rate (e.g., for the U.S. between 1933 and 1984, see Lester & Yang, 1992; for 29 nations, see Lester, 1994b).

Research on 404 county groups has found that the mean number of children in a county has little bearing on female suicide rates. Pescosolido and Wright (1990) determined that the mean number of children was unrelated to the rates of suicide for young and elderly women. It was positively related to the suicide rate of middle-aged women.

Religion

Religious influences on suicide constitute an area marked by substantial theoretical and empirical advances in the last 15 years. Three theories, all related to Durkheim's classic work, were tested: (a) the classic Durkheim integration view; (b) the religious commitment perspective (Stark, Doyle, & Rushing, 1983; Stack, 1983b); and (c) the contextual or networking perspective of Pescosolido (1990).

Traditional treatments of religion and suicide have restricted the analysis to Protestant-Catholic differences. Catholicism was conceived of the religion of the past with many shared beliefs and rituals. In contrast, Protestantism was the religion of the future with fewer shared beliefs and practices, thus allowing the individual more freedom or "egoism" in religious life (Durkheim, 1966).

Durkheim's argument that Catholicism should shield against suicide, whereas Protestantism should aggravate it, has received mixed support. Although percent Catholic was related to suicide rates in U.S. counties (Faupel, Kowalski, & Starr, 1987), a study by the same authors that used the same dataset but added additional control variables

found that percent Catholic was not related to U.S. county suicide rates (Kowalski et al., 1987). Similarly, work on 404 county groups is marked by contradictory results (Pescosolido & Mendelsohn, 1986; Pescosolido & Georgianna, 1989; Pescosolido & Wright, 1990), where percent Catholic tends not to be related to suicide. A study of Louisiana counties found that percent Catholic increased the suicide rate, the opposite of the Durkheimian perspective (Bankston, Allen, & Cunningham, 1983). Breault (1988) found that percent Catholic decreased county suicide rates; however, percent Protestant also decreased the suicide rates and was more closely tied to reductions in suicide than was percent Catholic. In addition, percent Lutheran, percent Methodist, and percent Southern Baptist also reduced county suicide rates. Percent Catholic was unrelated to suicide rate in Canadian provinces (Trovato, 1986). Finally, reanalysis of 19th-century data and data for The Netherlands in 1905-1910 raises doubts about the validity of Catholic-Protestant differences in three nations. Catholic deaths at the aggregate and individual levels were relatively low from suicide, but relatively high from several other external causes. This suggests that some suicides were falsified as "sudden deaths," deaths from ill-defined causes, and other categories (Van Poppel & Day, 1996; Day, 1987).

Part of the ongoing debate about religion and suicide can be resolved by care in the definition and selection of religious groups that are still, in fact, high in religious integration. The classic Durkheimian premise that religions high in social integration should reduce suicide was firmly supported in an innovative study of the Islam faith. Taking Islam as a religion marked by extensive ritual and subordination of the individual to the group, Simpson and Conklin (1989) in their study of 71 nations found that the greater the percentage Islam in a nation, the lower the suicide rate. The proportion of Catholic or Protestant people in a nation was, in contrast, unrelated to suicide. Possibly the integration levels of these two broad

Christian faiths have become too low to lower suicide. Specific denominations or groups within these faiths may, however, still act to reduce suicide.

A major exception to these negative findings was found in Burr, McCall, and Powell (1994). In a study of 294 metropolitan areas it was determined that percent Catholic had direct and indirect effects on the suicide rate. As in previous research by Stack (1982a), the authors found that percent Catholic had an indirect effect through lowering the divorce rate, which in turn lowered suicide. In contrast to Catholicism, Protestant church membership was unrelated to suicide.

A substantial amount of research moved beyond the classic Catholic-Protestant debate. It was guided by two new theoretical developments. According to the religious commitment position, Stack (1983b) and Stark, Doyle, and Rushing (1983) contend that only a few core religious beliefs (e.g., in an afterlife, prayer) are all that is needed to help preserve life. This is in contrast to Durkheim (1966), who thought the sheer number of beliefs and practices was central to suicide prevention. Religious commitment theory received support from two cross-national investigations (Breault & Barkley, 1982; Stack, 1983b), a study of U.S. cities (Stark et al., 1983), and a study of 3,055 U.S. counties (Breault, 1988). Stack's (1983b) analysis of 25 industrial nations indicates that religion reduces suicide mainly through lowering the female rate. In addition, a time series analysis using church membership provided additional support (Stack, 1983a), but a reanalysis of these data contended that religious integration tapped the same index of a greater phenomenon "social collectivism" or "social individualism" as did family trends (Stack, 1985). For 261 Canadian census divisions, a 10% change in the proportion of the population with no religious affiliation, a sign of low religious commitment, brought a 3.2% increase in the rate of suicide. No religious affiliation was the most important variable (of 21) associated with the variance in suicide (Hasselback, Lee, Yang, Nichol, &

Wigle, 1991). Trovato (1992) also found that the proportion of Canadian provinces with no religious affiliation was strongly related to suicide rates in 1971 and 1981.

Four studies refuted the theory of religious commitment. A reanalysis of American cities that introduces a control for geographic mobility found the index of religious commitment, church membership, to be unrelated to urban suicide (Bainbridge, 1989). Two time series analyses of nations (Denmark and Norway), where religion is relatively weak (the U.S. is generally found to be the most religious of the world's industrial nations), also failed to support the religious commitment view (Stack, 1989, 1990a). Finally, Girard (1988) found that once a control is introduced for percent African American, the relationship between church membership and suicide disappears for the 50 American states. Nevertheless, the weight of the available evidence tends to support religious commitment theory.

Several writers, notably Bernice Pescosolido in her religious networks theory, contend that the impact of religion on suicide is dependent on special contexts. First, the context of urbanity, where people are more apt to find coreligionists and construct a strong religious infrastructure, should strengthen the impact of religion on suicide (Kowalski et al., 1987; Pescosolido, 1990). Second, a religious structure characterized by noncumenicalism, nonhierarchical power relations, a conservative ideology, and tension with mainstream culture is likely to decrease suicide. Such a structure promotes friendship ties with church members and, hence, reduces suicide risk through networks of social support (Pescosolido & Georgianna, 1989). Third, the region of the religion's "historical hub" should be the most likely to lower suicide, given the development of a long-standing religious infrastructure (e.g., religious social clubs, schools) that promotes networking and integration (Pescosolido, 1990).

Research evidence rejected the notion that the most urbanized contexts strengthen the link between religion and suicide (Kowalski et al., 1987; Pescosolido, 1990), but evi-

dence was marshalled for American counties that suggests a link between favorable religious structure and lowered suicide rates (Pescosolido & Georgianna, 1989). Here, percent Catholic, percent Reformed Churches, percent Evangelical Baptist, and percent Seventh-Day Adventists all substantially lowered the incidence of suicide. Religious historical hubs tend to lower suicide risk for their members. Judaism lowers suicide in New England, for example, but offers no protection where Jews are few in number, such as in the South (Pescosolido, 1990).

Elaborations of Durkheim's theory through the concepts of religious commitment and religious networking underlined by "historical hubs" and favorable "religious structure" have received substantial support in the literature of the 1980s. Evidence suggests, however, that religion may offer the most protection for women, and possibly none at all in nations where it has been highly secularized.

Community Integration—Migration

Internal migration can break important ties between the individual and the social system, including bonds to relatives, co-workers, familiar geography, and neighbors. Immigration can compound these problems by adding additional changes such as language, dress, type of residential dwelling, and diet (Stack, 1982a; Trovato & Jarvis, 1986).

A series of cross-sectional studies reported gross associations between internal migration and rates of suicide. These included studies of U.S. Standardized Metropolitan Statistical Areas (SMSAs) (South, 1987; Bainbridge, 1989), 3,025 U.S. counties (Kowalski et al., 1987), and Sri Lanka (Kearny & Miller, 1988). The relationship holds, however, for only the youngest third of men in the military (Rothberg, 1991).

Work in other nations focused more on immigration and found the gross association between immigration and suicide to be refined. A time series analysis for 1950 to 1982 in Canada reported that immigration rates are associated only with young male (15

to 34 years) suicide rates (Trovato, 1986), an age group most likely to be affected by social change. Immigrant groups in England tended to have higher suicide rates than persons from their native countries (Merrill & Owens, 1988).

An innovative work explains some of the variation in the strength of the effect of immigration on suicide. Trovato and Jarvis (1986) note that the effect of migration varies by ethnic background. Immigrant groups with Catholic backgrounds (e.g., Italians, Portuguese, Irish) have greater abilities to provide strong community ties for their members than English-Welsh, Scottish, German, and U.S. immigrants, who have less social integration. Catholic immigrants suffered fewer shocks and their suicide rate was lower than that of the other immigrant groups.

Kushner (1984) speculates that the variation in suicide among ethnic immigrants is a function of the treatment of mourning in their respective cultures. To the extent that death is ritualized in therapeutic ways in an ethnic culture, people in that culture will tend to have stronger coping mechanisms and, as a result, lower suicide rates when they migrate to other nations. Kushner (1984) argues this is why Danish immigrants have higher suicide rates than Norwegian immigrants.

Status Integration

According to status integration theory, any status configuration that is infrequently occupied by persons in a society is apt to be marked by role conflict (Gibbs & Martin, 1964). In contrast, as status configurations (e.g., being a wife-mother in the labor force) become more common, people in them experience less stress and their suicide rate should be reduced.

A key area of research on status integration theory has focused on female participation in the labor force (FPLF) over time. The status configuration of wife-mother-worker is now a relatively frequent one occupied by an increasing number of women. For example, in Canada FPLF rose from 19.3%

in 1931 to 52% in 1981 (Trovato & Vos, 1992). A time series analysis of FPLF and suicide from 1948 to 1963 in the U.S., a period where FPLF was relatively low, found that FPLF was associated with increases in the rates of both female and male suicide. This was a period of relatively high society antipathy toward FPLF. For example, a working wife-mother can indicate personal failure to a man in a period of traditional gender roles where men are expected to be the sole breadwinner. In contrast, for the period of women's liberation, 1964 to 1980, when FPLF was becoming a more commonplace status configuration, it was no longer associated with female suicide. However, FPLF was still positively associated with male suicide. The costs of FPLF (e.g., less psychological support available from one's spouse) still outweighed the benefits (e.g., higher household income) for men even in a cultural context supportive of FPLF.

In Portugal, where cultural support for FPLF is relatively low, FPLF has been associated with increased levels of female suicide, especially among professionals (Castro, Pimenta, & Martins, 1988).

In the case of Canada in 1971, FPLF was positively associated with both male and female suicide rates. However, as FPLF became more commonplace and received greater cultural support, by 1981 it was no longer associated with either Canadian female or male suicide rates (Trovato & Vos, 1992).

Stack (1990b) tested status integration theory as it applies to marital status with individual level data from about 1960 to 1980. This was a period when the proportion of divorced people more than doubled, greatly increasing the rate of associated status configurations. As anticipated, the COA (suicide rate of divorced/suicide rate of married) decreased for 11/15 male age groups and also decreased for 12/15 female age groups. Stack (1990b) contends that this may be because of the development of social support groups for divorced people and the lessened stigma associated with that status. A Durkheimian (1966) model is still supported, however, since the suicide rate of divorced people is

still two to four times that of their married counterparts. Divorce is stressful even though it is less so than a generation ago.

A related study of the U.S. in 1940, 1950, 1960, and 1970 found that all correlations between the frequency of various marital statuses and suicide rates were negative as predicted (Stafford & Gibbs, 1988). Furthermore, another investigation found the predicted inverse relationships among age groups of U.S. Caucasian women. This involved a simultaneous measure of three dimensions of status integration (marital, parental, and labor force) (Gibbs, 1982). A study of Norway found, however, that changes in marital status distributions have not changed the relative incidence of suicide among marital status categories (Mastekaasa, 1993).

Research on statistically infrequent occupational status sets has tended to confirm status integration theory. Female chemists, a role set that is infrequent, experienced significantly more social isolation at work than male chemists. Female chemists had a high suicide rate, compared with other women in the labor force. Also, a majority of female chemists had suffered sex discrimination (Seiden & Gleiser, 1990). Female laborers, another infrequent role set, had a suicide rate of 38/100,000, 7.6 times that of females in general (Stack, 1995b). The stress associated with many statistically infrequent role sets can contribute to suicide potential. Alston (1986) found that, in general, female suicide rates were the lowest in highly traditional female occupations.

Similarly, Lester (1987) reported that the scarcer or lower the proportion of non-Caucasians in a state, the higher the suicide rate of non-Caucasians ($r = -0.41$, $p < 0.01$). For immigrant groups in Australia, the larger the immigrant group, the lower the suicide rate for men ($r = -0.57$) and women ($r = -0.66$) in that immigrant group (Lester, 1987).

Political Factors

Durkheim (1966, pp. 202–208) argued that political factors such as wars and political crises decrease the suicide rate by rousing

collective sentiments and promoting integration. This thesis continued to receive mixed results in recent research.

War. Although popular wars tend to lower the suicide rate, most recent research has found this effect to be spurious. Three studies of World War I found that war reduces suicide mainly through lowering unemployment and lowering alcohol consumption (Stack, 1988; Wasserman, 1989, 1992). However, one study that used a quantitative index of war found that war reduced suicide independent of its effect on unemployment. It found that a 1% increase in the military participation ratio (military personnel/per 1,000 population) reduced the suicide rate by 0.14% from 1954 to 1978 (Stack, 1983a). However, two other quantitative measures of war (e.g., degree of war coverage in the press, battle casualties) were unrelated to suicide during World War I in the U.S. (Wasserman, 1992). Yamamoto (1984) found that both unemployment and suicide decreased during wartime in Japan from 1929–1939. Research continues to be needed on other nations, which probably experienced higher levels of integration during war than the U.S., where battles were actually being fought on their soil.

Possibly the stress of war might increase the chances of suicide among veterans. Research indicates, however, that Vietnam veterans are at no higher risk of suicide than their peers (Pollock, Rhodes, Boyle, Decoufle, & McGee, 1990). This may not, however, be true for combat veterans.

Presidential Elections. Suicide tends to decline from September to October during American election years and has been attributed to a presumed rise in social integration (Stack, 1982a). However, in an analysis of monthly data from 1903 to 1977, Wasserman (1983) determined that this presidential death dip was because of a decrease in unemployment. Elections are associated with a dip in unemployment. When variations in unemployment are controlled, no significant relationship exists between presidential elections and suicide.

Strikes and Class War. Labor strikes against management may reduce suicide by

uniting the labor movement and increasing its partisan spirit against a common enemy. An analysis of data from 31 nations confirmed this thesis (Stack, 1982b). However, an overtime analysis from 1948 to 1977 limited to the case of the U.S. found no evidence of a link between strikes and American suicide (Ahlburg, 1985). Perhaps because the U.S. is one of the least unionized industrial nations, strikes cannot provide a level of solidarity high enough to affect the suicide rate. In a related study of 42 nations, Breault and Barkey (1982) determined that the greater the rate of deaths from political violence, a condition associated with political crisis, the lower the suicide rate.

Recent work has supported the general thesis that political totalitarianism should nurture a sense of fatalism that increases suicide (Stack, 1982a). Suicide increased steadily during the Soviet occupation of Lithuania and decreased with the Soviet withdrawal from that nation (Gailiene, Domanskiene, & Keturakis, 1995).

CONCLUSION

A recurring problem in sociological work is the confounding effect of mental troubles or individual level characteristics that which may cause suicide and social conditions linked to suicide. For example, migrants may be more apt than nonmigrants to have mental troubles. Migration may not cause suicide, but it may be reflective of mental troubles that contribute to migration and suicide.

For this reason, caution needs to be exercised when interpreting the wealth of evidence on divorce and suicide, even evidence at the individual level. Selection may make this generalization spurious (Nordstrom, 1995; Retterstol, 1990, p. 80). People who are less stable, evade problems, have a greater tendency to develop conflicts in human relationships, and escape solutions may have a greater risk of both divorce and suicide. It may be mental and social disturbances that cause suicide and not divorce per se.

Recent work on depression, however,

finds mixed support for the selection thesis. Bruce and Kim (1992) present longitudinal data on persons with no history of major depression. Among those men recently divorced, 14.3% developed major depression, compared with 0.3% of the men who were happily married at the beginning of the study, and compared with 1.0% of the unhappily married men. Divorce, then, increases the risk of major depression in men by a factor more than 45 times compared with happily married men, and by a factor of 14.3 times compared with unhappily married men. In contrast with men, however, 5% of recently divorced women had major depression, compared with 3.2% of the happily married women and 5.2% of the unhappily married women. Therefore, selection may play a role in the suicides of divorced women. Considerable work is needed, however, to detangle mental troubles from the social correlates of suicide.

There are a number of issues in the sociology of suicide that need to be addressed in the decades ahead. These include developing explanations for the split in the findings on divorce and suicide in time series designs, the need for research on the influence of war on suicide in nations where wars are actually being fought, and microlevel research on religion and suicide. We have little information on the actual religiosity levels and religious affiliations of individuals who complete suicide versus their age-matched peers who die of natural causes.

REFERENCES

- AHLBURG, D. (1985). The effect of strikes on suicide. *Sociological Focus*, 18, 29-36.
- ALSTON, M. (1986). Occupation and suicide among women. *Issues in Mental Health Nursing*, 8, 109-119.
- ALTERGOTT, K. (1988). Qualities of daily life and suicide in old age: A comparative perspective. *Journal of Cross-Cultural Gerontology*, 3, 361-376.
- BAINBRIDGE, W. S. (1989). The religious ecology of deviance. *American Sociological Review*, 4, 288-295.
- BANKSTON, W. B., ALLEN, H. D., & CUNNINGHAM, D. S. (1983). Religion and suicide: A research note on sociology's 'one law.' *Social Forces*, 62, 521-528.
- BREAULT, K. D. (1986). Suicide in America: A test of Durkheim's theory of religious and family integration, 1933-1980. *American Journal of Sociology*, 92, 628-656.
- BREAULT, K. D. (1988). Beyond the quick and dirty: Reply to Girard. *American Journal of Sociology*, 93, 1479-1486.
- BREAULT, K. D., & BARKEY, K. (1982). A comparative analysis of Durkheim's theory of egoistic suicide. *Sociological Quarterly*, 23, 321-331.
- BRUCE, M., & KIM, K. (1992). Differences in the effects of divorce on major depression in men and women. *American Journal of Psychiatry*, 149, 914-917.
- BURR, J., MCCALL, P., & POWELL-GRINER, E. (1994). Catholic religion and suicide. *Social Science Quarterly*, 75, 300-318.
- CANETTO, S. S. (1992). Gender and suicide in the elderly. *Suicide and Life-Threatening Behavior*, 22, 80-97.
- CARNEY, S., RICH, C., BURKE, P., & FOWLER, R. (1994). Suicide over 60. *Journal of the American Geriatric Society*, 42, 174-180.
- CASTRO, E., PIMENTA, F., & MARTINS, I. (1988). Female independence in Portugal: Effect on suicide rates. *Acta Psychiatrica Scandinavica*, 78, 147-155.
- DAY, L. (1987). Durkheim on religion and suicide: A demographic critique. *Sociology*, 21, 449-461.
- DODGE, H., & AUSTIN, R. (1990). Household structure and elderly Japanese female suicide. *Family Perspective*, 24, 83-97.
- DURKHEIM, E. (1966). *Suicide*. New York: Free Press.
- FAUPEL, C. E., KOWALSKI, G. S., & STARR, P. D. (1987). Sociology's one law: Religion and suicide in the urban context. *Journal for the Scientific Study of Religion*, 26, 523-534.
- GAILIENE, D., DOMANSKIENE, V., & KETURAKIS, V. (1995). Suicide in Lithuania. *Archives of Suicide Research*, 1, 149-158.
- GIBBS, J. (1982). Testing the Theory of Status Integration and Suicide Rates. *American Sociological Review*, 47, 227-237.
- GIBBS, J., & MARTIN, W. (1964). *Status integration and suicide*. Eugene, OR: University of Oregon Press.
- GILLIS, A. R. (1994). Literacy and the civilization of violence in 19th century France. *Sociological Forum*, 9, 371-401.
- GIRARD, C. (1988). Church membership and suicide reconsidered: Comment on Breault. *American Journal of Sociology*, 93, 1471-1479.
- GIRARD, C. (1993). Age, gender and suicide: A cross-national analysis. *American Sociological Review*, 58, 553-574.

- GLASS, J., & REED, S. (1993). Live or die: A look at elderly suicide. *Educational Gerontology*, 19, 767-778.
- GUNDLACH, J. (1990). Absence of family support, opportunity and suicide. *Family Perspective*, 24, 7-14.
- HASSELBACK, P., LEE, K. I., YANG, M., NICHOL, R., & WIGLE, D. (1991). The relationship of suicide rates to sociodemographic factors in Canadian census divisions. *Canadian Journal of Psychiatry*, 36, 655-659.
- KEARNEY, R., & MILLER, B. (1988). Suicide and internal migration in Sri Lanka. *Journal of Asian and African Studies*, 23, 287-304.
- KOWALSKI, G. S., FAUPEL, C., & STARR, P. D. (1987). Urbanism and suicide: A study of American counties. *Social Forces*, 66, 85-101.
- KPOSOWA, A., BREAUULT, K. D., & SINGH, G. K. (1995). White male suicide in the U.S. *Social Forces*, 74, 315-323.
- KUSHNER, H. (1984). Immigrant suicide in the U.S. *Journal of Social History*, 18, 3-24.
- LESTER, D. (1987). Social deviancy and suicidal behavior. *Journal of Social Psychology*, 127, 339-340.
- LESTER, D. (1992). *Why people kill themselves*. Springfield, IL: Charles Thomas.
- LESTER, D. (1994a). Domestic integration and suicide in 21 nations, 1950-1985. *International Journal of Comparative Sociology*, 35, 131-137.
- LESTER, D. (1994b). Domestic social integration and suicide: A study of 29 nations. *Giornale-Italiano-di-Suicidologica*, 4, 13-15.
- LESTER, D. (1995). Is divorce an indicator of general or specific social malaise? *Journal of Divorce and Remarriage*, 23, 203-205.
- LESTER, D., & YANG, B. (1992). Fertility and suicide rates. *Journal of Biosocial Science*, 24, 97-101.
- LI, G. (1995). The interaction effect of bereavement and sex in the risk of suicide in the elderly: A historical cohort study. *Social Science and Medicine*, 40, 825-828.
- MCCALL, P., & LAND, K. (1994). Trends in white male adolescent, young adult, and elderly suicide: Are there common structural factors? *Social Science Research*, 23, 57-81.
- MCINTOSH, J. (1991). Middle-age suicide: A literature review and epidemiological study. *Death Studies*, 15, 21-37.
- MARIS, R. (1981). *Pathways to suicide*. Baltimore, MD: Johns Hopkins University Press.
- MARIS, R. (1985). The adolescent suicide problem. *Suicide and Life-Threatening Behavior*, 15, 91-109.
- MASTKAASA, A. (1993). Marital status and subjective well-being. *Social Indicators Research*, 29, 249-276.
- MERRILL, J., & OWENS, J. (1988). Self-poisoning among four immigrant groups. *Acta Psychiatrica Scandinavica*, 77, 77-80.
- MOTOHASHI, Y. (1991). Effects of socio-economic factors on secular trends in suicide in Japan. *Journal of Biosocial Science*, 23, 221-227.
- NORSTROM, T. (1995). The impact of alcohol, divorce, and unemployment on suicide. *Social Forces*, 74, 293-314.
- PESCOSOLIDO, B. (1990). The social context of religious integration and suicide: Pursuing the network explanation. *Sociological Quarterly*, 31, 337-357.
- PESCOSOLIDO, B., & GEORGIANNA, S. (1989). Durkheim, suicide, and religion. *American Sociological Review*, 54, 33-48.
- PESCOSOLIDO, B., & MENDELSON, R. (1986). Social causation or social construction of suicide? *American Sociological Review*, 51, 80-100.
- PESCOSOLIDO, B., & WRIGHT, E. (1990). Suicide and the role of the family over the life course. *Family Perspective*, 24, 41-60.
- POLLOCK, D., RHODES, P., BOYLE, C., DECOUFLÉ, P., & MCGEE, D. (1990). Estimating the number of suicides among Vietnam veterans. *American Journal of Psychiatry*, 147, 772-776.
- POPE, W., DANIGELIS, N., & STACK, S. (1983, August). *The effect of modernization on suicide: A time series analysis, 1900-1974*. Paper presented at the annual meeting of the American Sociological Association, Detroit, MI.
- RETTSTOL, N. (1990). *Suicide: A European perspective*. Cambridge, UK: Cambridge University Press.
- RICH, C., SHERMAN, M., & FOWLER, R. (1990). San Diego suicide study: Adolescents. *Adolescence*, 25, 855-865.
- ROTHBERG, J. (1991). Stress and suicide in the U.S. army. *Armed Forces and Society*, 17, 449-459.
- SCHIONY, W., & GRAUSGRUBER, A. (1987). Epidemiological data on suicide in upper Austria. *Crisis*, 8, 49-52.
- SCHWARTZ, A. (1990). The epidemiology of suicide among students at colleges and universities in the U.S. *Journal of College Student Psychotherapy*, 4, 25-44.
- SEIDEN, R., & GLEISER, M. (1990). Sex differences in suicide among chemists. *Omega*, 21, 177-189.
- SIMPSON, M., & CONKLIN, G. (1989). Socioeconomic development, suicide, and religion: A test of Durkheim's theory of religion and suicide. *Social Forces*, 67, 945-964.
- SOUTH, S. (1987). Metropolitan migration and social problems. *Social Science Quarterly*, 68, 3-18.
- STACK, S. (1982a). Suicide: A decade review of the sociological literature. *Deviant Behavior*, 4, 41-66.

- STACK, S. (1982b). The effect of strikes on suicide. *Sociological Focus*, 15, 135-146.
- STACK, S. (1983a). The effect of the decline in institutionalized religion on suicide, 1954-1978. *Journal for the Scientific Study of Religion*, 22, 239-252.
- STACK, S. (1983b). The effect of religious commitment on suicide: A cross-national analysis. *Journal of Health and Social Behavior*, 24, 362-374.
- STACK, S. (1985). The effect of domestic/religious individualism on suicide, 1954-1978. *Journal of Marriage and the Family*, 47, 431-447.
- STACK, S. (1988). Suicide: Media impacts in war and peace. *Suicide and Life-Threatening Behavior*, 18, 342-357.
- STACK, S. (1989). The impact of divorce on suicide in Norway. *Journal of Marriage and the Family*, 51, 229-238.
- STACK, S. (1990a). The effect of divorce on suicide in Denmark. *Sociological Quarterly*, 31, 359-370.
- STACK, S. (1990b). New micro level data on the impact of divorce on suicide. *Journal of Marriage and the Family*, 52, 119-127.
- STACK, S. (1993a). The effect of modernization on suicide in Finland, 1800-1985. *Sociological Perspective*, 36, 137-148.
- STACK, S. (1994). Divorce. In V. S. Ramachandran (Ed.), *Encyclopedia of human behavior* (pp. 153-163). New York: Academic Press.
- STACK, S. (1995a, April). *The effect of education on suicide risk*. Paper presented at the annual meeting of the American Association of Suicidology, Phoenix, AZ.
- STACK, S. (1995b). Gender and suicide risk among laborers. *Archives of Suicide Research*, 1, 19-26.
- STACK, S. (1995c, October). *Divorce and suicide: A review of 132 studies, 1880-1995*. Paper presented at the annual meeting of the Michigan Association of Suicidology, Holland, MI.
- STAFFORD, M., & GIBBS, J. (1988). Change in the relation between marital integration and suicide rates. *Social Forces*, 66, 1060-1079.
- STARK, R., DOYLE, D. P., & RUSHING, L. (1983). Beyond Durkheim: Religion and suicide. *Journal for the Scientific Study of Religion*, 22, 120-131.
- STILLION, J., & MCDOWELL, E. (1991). Examining suicide from a lifespan perspective. *Death Studies*, 15, 327-354.
- TRAVIS, R. (1990). Suicide in cross-cultural perspective. *International Journal of Comparative Sociology*, 31, 237-248.
- TROVATO, F. (1986). The relationship between marital dissolution and suicide: The Canadian case. *Journal of Marriage and the Family*, 48, 341-348.
- TROVATO, F. (1992). A Durkheimian analysis of youth suicide in Canada, 1971 and 1981. *Suicide and Life-Threatening Behavior*, 22, 413-427.
- TROVATO, F., & JARVIS, F. (1986). Immigrant suicide in Canada: 1971 and 1981. *Social Forces*, 65, 433-457.
- TROVATO, F., & VOS, R. (1992). Married female labor force participation and suicide in Canada, 1971 and 1981. *Sociological Forum*, 7, 661-677.
- VAN POPPEL, F., & DAY, L. (1996). A test of Durkheim's theory of suicide. *American Sociological Review*, 61, 500-507.
- WASSERMAN, I. (1983). Political business cycles, presidential elections, and suicide mortality patterns. *American Sociological Review*, 48, 711-720.
- WASSERMAN, I. (1989). The effects of war and alcohol consumption patterns on suicide: United States, 1910-1933. *Social Forces*, 68, 513-530.
- WASSERMAN, I. (1992). The impact of epidemic, war, prohibition, and media on suicide: United States, 1910-1920. *Suicide and Life-Threatening Behavior*, 22, 240-254.
- WHITE, G., MURDOCK, R., RICHARDSON, G., ELLIS, G., & SCHMIDT, L. (1990). Development of a tool to assess suicide risk factors in urban adolescents. *Adolescence*, 25, 655-666.
- YAMAMOTO, T. (1984). Examination of the egoistic suicide proposition: On the relation between war and suicide. *Japanese Sociological Review*, 35, 77-88.

Received: July 29, 1996

Revision accepted: November 1, 1998