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THE INFLUENCE OF SUGGESTION ON SUICIDE: SUBSTANTIVE AND THEORETICAL IMPLICATIONS OF THE WERTHER EFFECT*

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This paper shows that suicides increase immediately after a suicide story has been publicized in the newspapers in Britain and in the United States, 1947-1968. The more publicity devoted to a suicide story, the larger the rise in suicides thereafter. The rise in suicides after a story is restricted mainly to the area in which the story was publicized. Alternative explanations of these findings are examined; the evidence indicates that the rise in suicides is due to the influence of suggestion on suicide, an influence not previously demonstrated on the national level of suicides. The substantive, theoretical, and methodological implications of these findings are examined.

Two hundred years ago, Goethe wrote a novel called *The Sorrows of the Young Werther*, in which the hero committed suicide. Goethe's novel was read widely in Europe, and it was said that people in many countries imitated Werther's manner of death. According to Goethe, "My friends. . . thought that they must transform poetry into reality, imitate a novel like this in real life and, in any case, shoot themselves; and what occurred at first among a few took place later among the general public. . . ." (Goethe, quoted in Rose, 1929:XXIV.) Widespread imitation of Werther's suicide was never conclusively demonstrated, but authorities were sufficiently apprehensive to ban the book in several areas, including Italy (Gray, 1967), Leipzig, and Copenhagen (Rose, 1929).

More than one hundred years after *Werther* was written, Durkheim (1897) reviewed research linking suicide and suggestion (e.g., Tarde, 1903) and found no conclusive evidence relating imitation and the social suicide rate. Durkheim acknowledged that imitation might influence a few persons in the immediate vicinity of a well-known suicide, but he asserted that imitation does not affect the national level of suicides. He conceded that a few suicides might be precipitated by

suggestion but he felt that these would probably have occurred eventually even in the absence of suggestion. Students of suicide have tended to follow Durkheim rather than Goethe or Tarde; and in the eighty years since *Suicide* was published, the influence of suggestion on suicide has seldom been studied. The comprehensive *Bibliography on Suicide and Suicide Prevention, 1897-1970* (Farberow, 1972) which includes several thousand items, does not list the words "suggestion," "imitation," or "contagion" in its index.

In his book reviewing the literature on suicide, Lester (1972) found seven studies on suggestion or imitation, and he devoted a chapter to describing them. Lester noted that the results of some studies were inconclusive (Motto, 1967), contradictory (Crawford and Willis, 1966; Seiden, 1968) or could be explained by processes other than imitation (Weiss, 1958; Kreitman et al., 1969). Motto (1967) hypothesized that suicide rates should fall during newspaper strikes because during those periods, potential suicides would find no publicized suicides to imitate. Motto examined the suicide rates in seven cities undergoing newspaper strikes and found no evidence to support his hypothesis. Crawford and Willis (1966) studied six pairs of suicides and found evidence of imitation in three pairs and no evidence in the remaining three. Seiden (1968) examined five suicides during a one-month period in Berkeley, and felt that imitation was not involved. Weiss (1958) noted that sometimes a widower (or widow)

*I would like to thank Andrew Calia and Rosalie Phillips for collecting and for helping to analyse much of the data used in this paper. I am grateful to my colleague, John Logan, for his helpful criticisms and comments.

attempts suicide on the anniversary of his spouse's death. This phenomenon might result from imitation, but it might also result from a grief that becomes overwhelming on the anniversary of a partner's death. Kreitman et al. (1969) noted that attempted suicides had an unusually large number of suicidal friends. This result might indicate that persons imitate their friends' suicides, or that suicide-prone persons select each other as friends. In conclusion, Lester (1972:188-9) observed, "On the whole, therefore, contagion and suggestibility effects are equally difficult both to document and to rule out. . . . Clearly, the analysis of this topic is at too early a stage for reliable conclusions to be drawn." Thus, prior to the present study, no investigation that I know of has systematically and empirically demonstrated that suggestion affects the national level of suicide.¹

The dearth of studies linking suicide and suggestion is somewhat puzzling, in view of the general importance ascribed to contagion and suggestion in other areas of sociology (Blumer, 1955; Cantril, 1963; Toch, 1965; Klapp, 1969; Lang and Lang, 1961). Furthermore, Cantril, Toch and Klapp have claimed that anomic individuals are unusually suggestible, and many students of suicide have claimed that anomic individuals are prone to suicide. If both these claims are correct, then individuals prone to suicide should also be suggestible.

In this paper, I will use American and British statistics to show that the number of suicides increases after the story of a suicide is publicized in the newspapers.² It seems ap-

propriate to call this increase in suicides "the Werther effect," after Goethe's hero. I will show that this effect is probably due to the influence of suggestion on suicide. Contrary to Durkheim's assertions, the Werther effect is manifested on a national and sometimes on an international scale; furthermore, it is not necessarily produced by those who would have committed suicide anyway, even in the absence of a publicized suicide to imitate. The Werther effect is interesting for substantive and for theoretical reasons. These will be discussed after the effect has been demonstrated.

INCREASE IN NATIONAL SUICIDES AFTER A PUBLICIZED SUICIDE

A list of postwar suicides publicized in the newspapers was generated from *Facts on File*, a general index to world news. The *New York Times Index* was then used to determine a subset of particularly publicized suicides, namely, those appearing on the front page of the *New York Times*. The *New York Times*, was used because it is the only U. S. daily newspaper with a large circulation (averaging about 700,000, 1950-1970) and an index covering the entire postwar period. Later in this investigation, the *New York Daily News* (the most popular U. S. newspaper), the *Chicago Tribune*, and the *London Daily Mirror* will also be examined.

National postwar suicide statistics are available for each month during the period 1946-1968. These statistics can be used to determine the effect of front-page suicides during the period 1947-1967. If front-page suicides stimulate a rise in national suicides, this increase can be detected by a technique developed in an earlier paper (Phillips and Feldman, 1973). The use of this technique can be illustrated in the case of Daniel Burros, a leader of the Ku Klux Klan who committed suicide on November 1, 1965 when the newspapers revealed that he was Jewish. In the month after Burros' death, November of 1965, 1,710 suicides were recorded. There were 1,639 suicides in November of the previous year (1964) and 1,665 suicides in November of the subsequent year (1966). The average, $(1,639 + 1,665)/2 = 1,652$ can be

¹ Subsequent to Lester's review, Motto (1970) examined an eighth U.S. city (Detroit) undergoing a newspaper strike. He found that male suicide rates went up during the period of the strike, while female suicide rates went down. He concluded from this that newspaper strikes produce a drop in suicides (at least among females). One might just as well have concluded that newspaper strikes produce a rise in suicide rates (at least among males). Even if one supposes with Motto that the newspaper strike did indeed "produce" the drop in female suicides, this need not imply that the drop occurred because suicides were not publicized during the period. Besides having no suicides reported in the paper, Detroit changed in many other ways during the strike; perhaps some of the other changes in Detroit produced the drop in female suicides.

² Some authors (for example, Meerloo, 1968:82-90; Motto, 1967) have noted in passing that suicides increased after Marilyn Monroe's death, but

they were not prompted by this observation to examine systematically the suicide level after many publicized suicides.

taken as an estimate of the number of suicides expected in November of 1965, under the null hypothesis that Burros' death had no effect on national suicides. It can be seen that this method of estimating the expected number of suicides controls for the effects of the seasons on suicide and for the existence of linear trends over time in the level of suicide. Because the observed number of suicides in November 1965 (1,710) is greater than the number expected (1,652) there was a rise in suicides just after Daniel Burros killed himself.³

In general, the above procedure was used to estimate the effect of front-page suicides. However, in some instances, the following modifications were required.

1) Burros' suicide occurred in November of 1965, and November of 1964 and 1966 were used as control months to estimate the effect of Burros' death. However, if another front-page suicide had occurred in November of 1966 it would be inappropriate to use this as one of the control months. Instead, November of 1967 would be a more appropriate choice.

2) If Burros' suicide had been discussed on November 30, 1965 instead of on November 1, it would be inappropriate to seek the effects of Burros' death in November; instead, December would be a more appropriate choice. In general, if the *Times* discussed a front-page suicide late in a month, (after the 23rd), the month after the *Times* story was examined. The 23rd was chosen as a cut-off point because it was arbitrarily assumed that the effect of a front-page story would last only two weeks. This implies that a front-page story will have its major effect primarily in the month of the story, if the story appears on or before the 23rd of the month. Otherwise, the greatest effect of the front-page story will be in the month after the story.

Although these procedures seem plausible, they are also somewhat arbitrary. It is therefore worth noting that, in general, the Werther effect still appears when different procedures

are followed, for example, if the 15th is used as a cut-off point, rather than the 23rd.

Table 1 gives the number of U. S. suicides observed after a front-page suicide, and the number expected under the null hypothesis that front-page suicides have no effect on the level of national suicides. It can be seen that suicides increase after twenty-six front-page stories, and decrease after seven of them. Given the null hypothesis the probability of twenty-six or more suicide peaks out of thirty-three is .00066 (binomial test, $p = .5$, $n = 33$, $X \geq 26$).⁴

In the next section, I will show that the Werther effect is probably caused by the effect of suggestion on suicide.

POSSIBLE CAUSES OF THE WERTHER EFFECT

In attempting to determine the causes of

⁴This probability, calculated from the binomial distributions ($p = .5$; $X \geq 26$; $n = 33$), holds only if one assumes independence among the thirty-three successive suicide rises. Because of the logic of statistical testing, one can never prove that these thirty-three rises are mutually independent. The most one can do is test for dependence amongst the thirty-three observations and, if one finds none, assume independence amongst them. Accordingly, the Von Neumann test for serial correlation (Von Neumann et al., 1941) was used to test for dependence; no evidence of dependence was found and independence was assumed. The Von Neumann test was originally designed for observations drawn from an underlying normal distribution, and one cannot assume that my observations are drawn from such a distribution. However, Phillips and Chase (1969) have shown statistically that the Von Neumann test can be used for other distributions as well. For a more detailed discussion of the problem of dependence, see Phillips (1970).

Another, related problem must also be considered before the binomial test can be applied meaningfully to the results in Table 1. Exactly the same suicide data are used to determine whether suicides rise after Burros' death and to determine whether they rise after Morrison's death. Obviously, it would be inappropriate to count the same suicide rise twice in determining the statistical significance of my findings, because this would make the statistical significance artificially high. Hence, for the purposes of significance testing, the Burros and Morrison suicide stories have been treated as one story; and the rise in suicides after Burros and Morrison killed themselves has been counted only once. For similar reasons, the Graham and Ward suicide stories, which occurred on the same date, have been treated as one story only. Thus, although there are thirty-five suicide stories described in Table 1, they have been treated as thirty-three stories to ensure that the statistical significance of the results in Table 1 is not artificially high.

³One might wish to examine the increase in the suicide rate in the month after the story, rather than the increase in the number of suicides. Unfortunately, one cannot indulge this wish because the necessary data are lacking. To calculate the suicide rate in the month after a story, one would need monthly population figures; and these are generally unknown, or estimated only.

the Werther effect, I will first show that the available evidence is consistent with the effect of suggestion on suicide. Then I will show that some other plausible explanations of the Werther effect are inconsistent with the available data.

Timing of the Werther Effect with Respect to Newspaper Stories on Suicide.

If the Werther effect is caused by the publicizing of suicide stories, then the rise in the national suicide level should occur only *after* each suicide story appears. One cannot check this prediction as precisely as one would wish because U. S. suicide statistics are not tabulated by day of occurrence, only by month. Nonetheless, these monthly suicide statistics allow us to determine approximately whether suicide levels rise before or after suicide stories.

Figure 1 gives the rise in suicides in the month *before* the suicide story appears, in the month *when* it appears,⁵ and in the months *thereafter*. As predicted, suicide levels are not higher than expected in the month before the stories appear; but they are considerably higher than expected in the month of the story and in the month thereafter. In these two months, the number of excess suicides is 2,034 (1275 + 759). This is an average of 58.1 (2,034/35) excess suicides per suicide story.

Of course, it is conceivable that some excess suicides in the month of the suicide story occur before that story appears. It is possible that suicides increase early in the month of a suicide story even though that story appears later in the month. This is unlikely, however, because of the following evidence. If suicides rise only *after* a story appears, then stories appearing late in the month should elicit a relatively small rise in suicides in the month *of* the story, and a relatively larger rise in suicides in the month *after* the story. Conversely, stories appearing early in the month should elicit a relatively large rise in suicides in the month of the story,

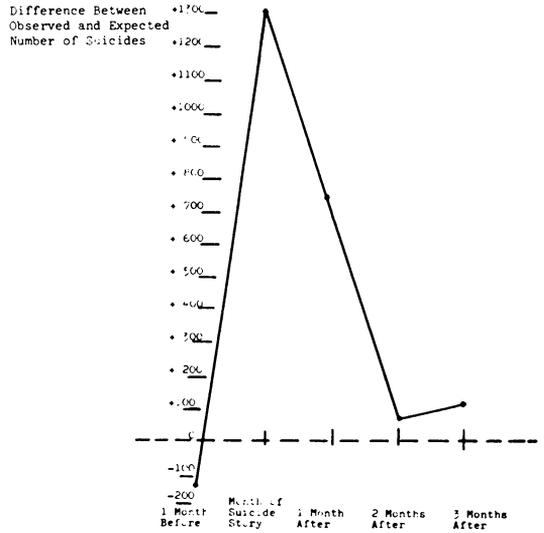


Figure 1. Fluctuation in the Number of Suicides, Before, During and After the Month of the Suicide Story

and a relatively smaller rise in suicides in the month after the story.

These predictions are consistent with the available data: Stories appearing on or before the 15th of the month elicit a total rise of 636 suicides in the month of the story and in the month thereafter. Ninety-eight percent of this rise (624/636) occurs in the month of the story. In contrast, stories appearing after the 15th of the month elicit a rise of 1,398 suicides in the month of the story and in the month thereafter. Only forty-seven percent of this rise (651/1398) occurs in the month of the story.

Variation in the Size of the Werther Effect According to Amount of Newspaper Publicity

If the Werther effect is due to the influence of newspaper publicity on suggestible potential suicides, then the more publicity given to a story of suicide, the larger should be the rise in suicides after the appearance of that story. Thus, for example, the more days a suicide story appears on the front page, the larger should be the rise in suicides after that story appears. Unfortunately, it is difficult to check this prediction with *New York Times* stories because the *Times* devoted more than one day of front page space to only three

⁵The total number of excess suicides in the month of the suicide story (1,275) is not equal to the sum of the excess suicides listed in Table 1 (1,298.5). This is because, in Table 1, the number of excess suicides was calculated sometimes for the month after the suicide story, and sometimes for the month of the story, depending on whether the story appeared late or early in the month.

Table 1. Rise in the Number of U.S. Suicides after Suicide Stories Publicized on Page 1 of the New York Times

Name of Publicized Suicide	Date of Suicide Story	Observed No. of Suicides in Mo. ^a after Suicide Story	Expected No. of Suicides after in Mo. after Suicide Story	Rise in U.S. Suicides after Suicide Story: Observed--Expected No. of Suicides
Lockridge, author	March 8, 1948	1510	1521.5	- 11.5
Landis, filmstar	July 6, 1948	1482	1457.5	24.5
Brooks, financier	August 28, 1948	1250	1350	-100.0
Holt, betrayed husband	March 10, 1949	1583	1521.5	61.5
Forrestal, Ex-Secretary of Defense	May 22, 1949	1549	1493.5	55.5
Baker, professor	April 26, 1950	1600	1493.5	106.5
Lang, police witness	April 20, 1951	1423	1519.5	- 96.5
Soule, professor	August 4, 1951	1321	1342	- 21.0
Adamic, writer	September 5, 1951	1276	1258.5	17.5
Stengel, N. J. police chief	October 7, 1951	1407	1296.5	110.5
Feller, U. N. official	November 14, 1952	1207	1229	- 22.0
LaFollette, Senator	February 25, 1953 ^b	1435	1412	23.0
Armstrong, inventor of F.M. Radio	February 2, 1954	1240	1227	13.0
Hunt, Senator	June 20, 1954	1458	1368.5	89.5
Vargas, Brazilian President	August 25, 1954	1357	1321.5	35.5
Norman, Canadian Ambassador	April 5, 1957	1511	1649.5	-138.5
Young, financier	January 26, 1958	1361	1352	9.0
Schupler, N. Y. C. councilman	May 3, 1958	1672	1587	85.0
Quiggle, Admiral	July 25, 1958	1519	1451	68.0
Zwillman, Underworld leader	February 27, 1959	1707	1609	98.0
Bang-Jensen, U. N. diplomat	November 27, 1959	1477	1423	54.0
Smith, police chief	March 20, 1960	1669	1609	60.0
Gedik, Turkish Minister	May 31, 1960	1568	1628.5	- 60.5
Monroe, filmstar	August 6, 1962	1838	1640.5	197.5
Graham, publisher				
Ward, implicated in Profumo Affair	August 4, 1963	1801	1640.5	160.5
Heyde & Tillman, ^c Nazi officials	February 14, 1964	1647	1584.5	62.5
Lord, N. J. Party chief	June 17, 1965	1801	1743	58.0
Burros, KKK Leader	November 1, 1965	1710	1652	58.0
Morrison, war critic	November 3, 1965			
Mott, American in Russian jail	January 22, 1966	1757	1717	40.0
Pike, son of Bishop Pike	February 5, 1966	1620	1567.5	52.5
Kravchenko, Russian defector	February 26, 1966	1921	1853	68.0
LoJui-Ching, Chinese Army leader	January 21, 1967	1821	1717	104.0
Amer, Egyptian Field Marshall	September 16, 1967	1770	1733.5	36.5
				<u>1298.5</u>

^aFor rules determining the month to be examined, see text.

^bAll February statistics have been normed for a month of 28 days.

^cThe suicides of Heyde and Tillman were discussed in the same suicide story.

NOTE: Source of Suicide statistics: U.S. Department of Health, Education, and Welfare, Public Health Service, *Vital Statistics of the U.S.*, Yearly Volumes, 1947-1968.

Table 2. Size of the Suicide Rise after a Suicide Story by Number of Days Devoted to the Story on the Front Page of the *New York Daily News*

Number of Days on Page 1 of the News	0 ^a	1 ^b	2 ^c	3 ^d	4 ^e
Average rise in U.S. suicides after each suicide story ^f	25.26	28.54	35.25	82.63	197.5

^aThe following suicide stories carried in the *New York Times* fall in this category: Lockridge, Baker, Lang, Soule, Armstrong, Hunt, Vargas, Norman, Zwillman Gedik, Smith, Graham, Heyde, Tillman, Morrison, Kravchenko, Amer, Lo Jui-Ching.

^bThis category includes: Landis, Brooks, Forrestal, Stengel, Adamic, Feller, LaFollette, Bang-Jensen, Lord, Burros, Mott, Pike.

^cThis category includes Holt and Young.

^dThis category includes Schupler and Ward.

^eThis category includes Monroe.

^fWard and Graham died on the same date, August 4, 1963. Half the rise in suicides in August, 1963, has been credited to Ward, and half to Graham. A similar procedure has been followed for Heyde and Tillman, who died on February 14, 1964, and for Burros and Morrison, who died on November 1 and November 3, 1965.

NOTE: Source of suicide statistics: U.S. Department of Health, Education, and Welfare, Public Health Service, *Vital Statistics of the U.S.*, Yearly Volumes, 1947-1968.

suicides.⁶ However, the *New York Daily News*, the most popular daily newspaper in the U. S., can be used for this purpose. The thirty-five suicide-stories on page one of the *New York Times* can be divided into five categories, according to the number of days they appear on the front page of the *New York Daily News*. Table 2 shows that, as predicted, the more days a story appears on the front page of the *News*, the larger the average rise in suicides after that story appears. The five categories in this table (0 day, 1 day, etc.) would be ranked in the predicted order by chance .0083 (1/120) of the time.

Table 2 implies that suicides increase more after stories publicized in the *Times* and in the *News* than they do after stories publicized in the *Times* alone. On the average, suicides rise by 22.03 in the month after stories publicized by the *Times* alone (those in category 0).

Suicides increase an average of 51.3 after stories publicized in both the *Times* and the *News* (stories in categories 1-4). Of course, this result would be expected if the Werther effect is related to newspaper publicity.

Coverage in the *Times* and in the *News* might also be related to the size of the Werther effect in another way. If this effect is caused by the suggestive influences of newspaper publicity, then suicides that receive a great deal of publicity in New York City, but very little elsewhere, should elicit large increases in New York City suicide levels, and smaller increases in other parts of the United States. Unfortunately, suicide stories which grip the imagination of the New York public almost always interest the rest of the country as well. Only four suicides are publicized on page one of the *Times* and the *News* but are not publicized on the front page of the *Chicago Tribune*, one of the largest U. S. newspapers outside New York City.⁷

⁶These were Ward, Forrestal and Schupler, who received two, three and three days of coverage, respectively. On the average, the number of national suicides increased 100.3 in the month after each of these three committed suicide; while suicides increased by 33.2 after each of the remaining front page suicides listed in Table 1. One would expect this result if the Werther effect is caused by suggestion.

⁷The assumption that these four suicide stories were relatively unpublicized outside of New York City becomes even more plausible when we learn that all four suicides died in the New York City area and that three of the four were minor local political figures (Stengel, Lord, Schupler) unlikely to excite national interest. However, the fourth suicide

Table 3. The Percentage Rise in Suicides in New York City and in the Rest of the Country after Suicide Stories Publicized Mainly in New York City

Suicide Story	Percentage Rise in Suicides ($\frac{\text{Observed}-\text{Expected}}{\text{Expected}} \times 100$)	
	In New York City	In Remainder of U. S.
Adamic	8.62	1.04
Stengel	13.33	7.97
Schupler	25.58	4.50
Lord	4.58	3.27

NOTE: Source of New York City suicides statistics: New York City, Department of Health, *Vital Statistics*.

Source of U. S. suicides statistics: U. S. Department of Health, Education, and Welfare, Public Health Service, *Vital Statistics of the U. S.*

Table 3 shows that after each of these four publicized suicides, the proportional rise in New York City suicides is greater than the proportional rise in the rest of the country. This result would occur by chance .062 of the time (Wilcoxon's matched pairs signed rank one-tailed test). This result is not statistically significant at the .05 level but is very nearly so. Consequently, one might find it instructive to collect additional data to examine the problem more extensively. If suicide stories generate a rise in suicides mainly in the area where they are most publicized, then two predictions can be made:

1) Suicide stories publicized in the U.S. but not in Great Britain should elicit larger rises in American suicides than in British suicides.

2) Suicide stories publicized in Britain should elicit larger rises in British suicides than stories not publicized in Britain.

The most popular British daily newspaper, *The London Daily Mirror* (Newspaper Press Directory), was used as an indicator of the publicity given to a suicide story in Britain. It was assumed that a story covered by the *Mirror* received wide publicity in Britain, and that a story not covered by the *Mirror* received little or no publicity in Britain. Copies of the *Mirror* are available from 1956 in the Library of Congress. Table 4 indicates which of the suicide stories on the front page of the *New York Times* (1956-1967) were also on the front page of the *Mirror*. Table 4

(Adamic) did have some national reputation as a writer.

also gives the size of the proportional rise in suicides after each suicide story, in the United States and in England and Wales.

As predicted, American suicides generally rise more than British suicides after a suicide story publicized in the U. S. but not in Britain. This result is significant at .005 (Wilcoxon matched pairs signed ranks test, one tail). On the average, British suicides decreased by 2.72% after suicide stories not publicized in Britain. In contrast, suicides increased an average of 13.54% after the two stories that did appear on the front page of the *Mirror*. These two, which are the most heavily publicized of all the stories in Table 4, produce the first and third largest rises in British suicide in that table. A result as extreme as this one would occur less than .025 of the time by chance (Mann-Whitney two sample U-Test). Thus, as predicted, the stories publicized in Britain produce significantly larger rises in British suicides than stories not publicized there.⁸

SOME POSSIBLE ALTERNATIVE EXPLANATION OF THE WERTHER EFFECT

The data I have presented are consistent with the idea that the Werther effect is caused

⁸In this study, I have found no conclusive evidence that the means used by the publicized against the "suggestion hypothesis." However, failure to imitate one aspect of the front page suicide need not imply that the front page suicide is imitated in no respect whatever.

Table 4. Percentage Rise in Suicides in the U. S. and in Britain (England and Wales) after Suicide Stories always Publicized in the U. S. and Occasionally in Britain, 1956-1967

Suicide Story	Publicized in Britain	Percentage Rise in U. S. Suicides: $\frac{\text{Observed}-\text{Expected}}{\text{Expected}} \times 100$	Percentage Rise in British Suicides: $\frac{\text{Observed}-\text{Expected}}{\text{Expected}} \times 100$	Difference between Percentage Rise in U.S. & Percentage Rise in Britain, after Suicide Stories not Publicized in Britain
Norman	No	-8.40	- 2.63	-5.77
Young	No	.66	-11.77	12.43
Schupler	No	5.36	.11	5.47
Quiggle	No	4.69	- 1.09	5.78
Zwillman	No	6.09	- 5.52	11.61
Bang-Jensen	No	3.79	-10.03	13.82
Smith	No	3.73	- 8.59	12.32
Gedik	No	-3.72	-13.23	9.51
Monroe	Yes	12.04	9.83	
Ward	Yes	9.78	17.26	
Heyde and Tillman	No	3.94	6.60	-2.66
Lord	No	3.33	- 9.88	13.21
Burros and Morrison	No	3.51	- 6.75	10.26
Mott	No	2.33	- .85	3.18
Pike	No	3.35	12.04	-8.69
Kravchenko	No	3.67	8.67	-5.00
Lo Jui-Ching	No	6.06	- 2.06	8.12
Amer	No	2.11	- 3.96	6.07

NOTE: Source of U. S. suicide statistics: U. S. Department of Health, Education, and Welfare, Public Health Service, *Vital Statistics of the U. S.* Source of British suicide statistics: Great Britain, General Register Office, *The Registrar General's Statistical Report for England and Wales.*

by newspaper publicity and suggestion. However, one might prefer a more conventional explanation of the Werther effect if this explanation were also consistent with the data. Three such conventional explanations will be suggested and examined in turn.

Possible Influence of Bereavement on the Werther Effect

Several investigators have found that the suicide rate of bereaved persons is higher than

expected soon after their bereavement. MacMahon and Pugh (1965) found that the risk of suicide is high in the four years after the death of a spouse and particularly high in the first year. Bunch and Barraclough (1971) found that suicides tend to kill themselves close to the anniversary of the death of their fathers. Other studies on the effects of bereavement on suicide are reviewed by Rushing (1968) and by Lester (1972).

MacMahon and Bunch did not show that

suicides increase within a month after bereavement, but such an increase is certainly consistent with their findings. Thus, because of these and other studies, one might well claim that the Werther effect results from bereavement at the occurrence of publicized suicides.

It is probable that dying persons are most likely to elicit widespread intense grief if they have been widely known and admired for some time. Most persons whose suicides were reported on the front page of the *Times* were not widely known until they killed themselves; in addition, many were in trouble with the law and thus not likely to be admired by the general public. Consequently, it is difficult to believe that these persons could elicit sufficient grief to increase the national level of suicides.

The "bereavement explanation" can also be evaluated more empirically by examining the level of suicides after the deaths of U. S. Presidents. In general, Presidents are among the most famous and admired persons of their day. If the Werther effect is caused by grief at a publicized death, then U. S. suicides should increase significantly after Presidential deaths. Furthermore, Presidential deaths should generally elicit a much larger rise in suicides than is elicited by the more obscure and less admired persons in Table 1.

These predictions are not confirmed by the data. Monthly suicide statistics are available for many of the years 1900-1968. These statistics enable us to calculate the number of suicides after eight Presidential deaths. Table 5 shows that the level of suicides increases after five Presidential deaths; while, it decreases after three Presidential deaths. If Presidential deaths have no effect on the level of suicide, one would observe five or more rises out of eight, .363 of the time. Consequently, there is no statistically-significant tendency for suicides to increase after Presidential deaths. On the average, suicides rise by 24.81 after a Presidential death; yet they rose by more, 37.0, after the less famous, less admired suicide stories in the *Times*. These data are not consistent with the notion that suicides rise after front-page suicide stories because of the grief elicited by these stories.

Prior Conditions May Cause Both the Front Page Suicides and the Rise in Suicides Thereafter

A prior change in social conditions might

produce the association between a front page suicide and a rise in national suicide levels. Perhaps the social integration of the society declines and thus produces a general increase in publicized *and* unpublicized suicides.

This explanation seems implausible for two reasons.

1) If prior conditions create a wave of suicides of which the front page suicide is merely a publicized example, one would expect the front page suicide to occur some time during the suicide wave. In fact, however, this does not happen: The front page suicide does not seem to occur during the suicide wave, but before it.

2) The "prior conditions" explanation implies that there is no causal link between the characteristics of front page suicide stories and the rise in national suicide levels. If no such link exists, it is difficult to explain the observed association between the publicity given to a suicide story and the rise in suicide levels thereafter. Until these two difficulties are resolved, the "prior conditions" explanation remains implausible.

Misclassification of Deaths as a Cause of the Werther Effect.

Suicides can be misclassified in various ways, but only one of these (to be called "type A") is capable of producing the Werther effect. It is possible that a front page suicide story affects the suggestible mind of the coroner rather than the mind of the potential suicide. After reading the suicide story, he may be unusually likely to classify an ambiguous death as a suicide instead of as an accident or homicide.

If the Werther effect is caused by this "type A" misclassification, then accidental and homicidal poisonings should decrease after a suicide story by as much as suicidal poisonings increase, because the coroner "shifts" deaths from accidents and homicides into the category of suicides. Similarly, accidental and homicidal firearm deaths should decrease by as much as suicides by firearms increase, and so on for other modes of suicide like falls and strangulation. In a sequel to this paper, I will examine extensively the covariation of suicides, accidents, and homicides. Space does not permit such an examination here. At the moment, it is sufficient to note

Table 5. Fluctuation in U. S. Suicides after Deaths of U. S.^a Presidents,^b 1900-1968

President	Date of Death	Observed Number of Suicides in the Month after ^c the Presidential Death	Expected Number of Suicides in the Month after the Presidential Death
Harrison	March 13, 1901	292	297
McKinley	September 14, 1901	314	311.5
T. Roosevelt	January 6, 1919 ^d	764	627.5
Taft	March 8, 1930	1514	1515.5
Coolidge	January 5, 1933	1673	1550
F. Roosevelt	April 12, 1945	1219	1307
Kennedy	November 22, 1963	1664	1637.5
Hoover	October 20, 1964	1758	1753.5

^aData for 1933-1968 are for the U. S.: from 1903 to 1932, data are for the U. S. death registration states, which consisted of all states whose statistics met certain standards of accuracy; prior to 1903, data are for the U. S. death registration area, which included all the death registration states and the cities with accurate statistics that were not in death registration states.

The number of death registration states and the size of the death registration area have changed over time as the statistics of localities improved. These increases must be corrected for before one can draw valid inferences about the fluctuation of suicides after presidential deaths. The method of correction used for the figures in this table can be illustrated with the statistics examined for Coolidge's death: suicides in January, 1932, 1933, 1934. The death registration states included Texas in 1933 and in 1934, but *not* in 1932. In order to make the death registration states of 1933 and 1934 comparable with the death registration states of 1932, Texas suicides were excluded from the analysis of 1933 and 1934 data. A similar correction procedure was followed for other presidential deaths.

^bBecause the necessary data are unavailable, one cannot calculate the fluctuations in suicides for presidents who died before 1900, after 1968, or for Cleveland, Harding, and Wilson.

^cSee text for rules determining the month to be examined.

^dData for the control years 1918, 1944 exclude suicides of the armed forces. This small bias slightly increases the changes of finding a rise in suicides after the death of Presidents T. and F. Roosevelt; hence, the bias favors the bereavement explanation.

NOTE: Sources of data: U. S. Department of Commerce, Bureau of the Census, *Mortality Statistics*, yearly volumes, 1900-1936. U. S. Department of Health, Education, and Welfare, Public Health Service, *Vital Statistics of the U. S.*, yearly volumes, 1937-1968.

that I have found no evidence for that particular type of misclassification (type A) capable of producing the Werther effect.

I have now examined three alternative explanations of the Werther effect.⁹ None of

⁹A fourth, minor, alternative explanation might also be mentioned here. Beginning in 1968, a new disease category was introduced "Injuries undetermined whether accidentally or purposely inflicted." This new category tended to reduce the number of

deaths reported as suicides in 1968, because some of the deaths that would have been recorded as suicide were instead recorded as "Injuries undetermined" in 1968. This tendency for reported suicides to be decreased in 1968 affects our analysis of the rise in suicides after two suicide stories (Amer and Lo Jui-Ching). Amer's case will serve as an illustration. Amer killed himself in September, 1967; and the number of U.S. suicides in September of 1967 was high compared with the number in September 1966 and 1968. This result could occur because the

these explanations seems consistent with the data. At present, the best available explanation of the Werther effect is that it is caused by suggestion. In the next sections, the sociological importance and usefulness of the Werther effect will be evaluated.

DURKHEIM AND THE WERTHER EFFECT

We recall that Durkheim felt the effects of suggestion on suicide are unimportant for three reasons. First, he claimed, suggestion has only a local effect on suicide. A person's suicide may influence those in his immediate vicinity, but the national suicide level does not respond to suggestion. Secondly, those who are prompted by suggestion to commit suicide would have done so anyway, but perhaps a little later. And thirdly, even on the local level, the effect of suggestion is small, being limited to a few individuals. Each of these claims can be examined in turn.

1) The evidence contradicts Durkheim's claim that the effects of suggestion are only local. We have seen a nationwide increase in suicides in the U. S. and in Great Britain after a suicide story is publicized. Indeed, after some suicide stories, like Marilyn Monroe's or Stephen Ward's, the increase in the suicide level is international.

2) Durkheim also claimed that suggestion serves merely to precipitate a suicide a little

number of suicides in September of 1967 was unusually high, or because the number of suicides in September of 1968 was unusually low, following the introduction of the new disease category "Injuries undetermined." Similarly, the apparent rise in suicides after Lo Jui-Ching's death might also be explained as an artifact of the new category introduced in 1968. The introduction of this category cannot explain the suicide rise after the remaining thirty-one stories in Table 1, because the rise in suicides after these thirty-one stories was not calculated with 1968 data.

At present, one cannot determine whether the introduction of the new category in 1968 explains away the entire rise in suicides after the deaths of Amer and of Lo Jui-Ching. Some of the suicide rise after their deaths may be due to imitation, and some may be due to the introduction of the new category. But even if one assumes that the rise in suicides after their deaths is entirely due to the new category, the results in Table 1 are still statistically significant. Eliminating Amer and Lo Jui-Ching from the analysis of Table 1, we have thirty-one suicide stories; U. S. suicides increased after twenty-four of these stories and decreased after seven. This result is significant at .0017 (one-tailed binomial test, $p = .5$; $X \geq 24$; $n = 31$).

sooner than it would otherwise have occurred. If Durkheim is correct, then the peak in suicides after a front-page suicide story should be matched soon afterwards by an equally large dip in suicides, this dip being caused by suicides "moving up" their deaths by a month or two. Referring to Figure 1, we see that no such dip can be found in the months immediately after the rise in suicides. Thus, front page suicide stories do not seem to precipitate suicides by a month or two, although suicides may be precipitated by a somewhat larger period. Figure 1 is consistent with three alternative hypotheses: a) The excess suicides after a suicide story would have killed themselves anyway, but several months or several years later; b) The excess suicides would not have killed themselves if the suicide stories had not occurred; c) A third hypothesis, combining the two previous ones, is also possible: Newspaper suicide stories precipitate some suicides, and create others. Pending future research, one cannot discriminate between these three hypotheses.

3) Durkheim is partly correct in maintaining that suggestion has only a small effect on suicide: Some suicide stories elicit small rises in national suicides; however, other suicides stories elicit much larger rises. On the average, the U. S. suicide level increased by only 2.51% after the suicide stories publicized in the *New York Times*. This increase is somewhat larger, 3.27%, after stories appearing in the *New York Daily News*, a newspaper with more than twice the circulation of the *Times*. The rise in British suicide levels is still larger, 13.54%, after stories appearing in the *London Daily Mirror*, which has more than twice the circulation of the *Daily News*.¹⁰ The largest increases in British and American suicides occurred after the deaths of Marilyn Monroe, the actress, and Stephen Ward, the British osteopath involved in the Profumo affair. In the United States, suicides increased by 12%

¹⁰ On the average, the persons whose suicides are publicized in the *Daily News* or in the *Daily Mirror* are perhaps more prestigious than persons whose suicides are publicized in the *Times*. At the present stage of the investigation, one cannot separate the effects of a suicide's prestige from the effects of the publicity given to his death. Consequently, one cannot be certain that the response to the *Daily Mirror* stories is greater than the response to the *Times* stories because the former newspaper has a much larger circulation than the latter.

in the month after Marilyn Monroe's death and by 10% in England and Wales. In the two month period following Miss Monroe's death, there were 303 excess suicides in the U. S. and sixty excess suicides in England and Wales. Thus, Marilyn Monroe's death alone seems to have elicited 363 (= 303 + 60) excess suicides in two countries, (and other countries may also have experienced a rise in suicides). In the month after Dr. Ward's death, British suicides rose by 17%; while American suicides increased by 10%. In the two-month period after Dr. Ward's death, there were 104 excess suicides in England and Wales and 198 excess suicides in the United States, for a total of 302 suicides.

Considering that the observed increases in suicides after all front-page stories represent more than two thousand "excess" suicides, one might be a little callous in claiming that these increases are unimportant. But for sociologists, the Werther effect is probably more important for its theoretical implications. These will be discussed in the next section.

SOME THEORETICAL RELATIONSHIPS BETWEEN SUICIDE, SUGGESTION, SOCIAL MOVEMENTS, AND ANOMIE

Sociologists have long believed Durkheim's proposition that anomic individuals are susceptible to suicide. The findings I have reported suggest that this proposition needs to be elaborated: Anomic individuals may be particularly susceptible to suicide when the notion of suicide has been heavily publicized. The link between anomie and susceptibility has also been discussed in the literature on collective behavior, and this fact suggests some interesting relationships between the literature on suicide and the literature on collective behavior.

Studies of suicide and of collective behavior indicate that anomic persons are susceptible to solutions to their anomie. But the former studies indicate that anomic persons are susceptible to suicide as a solution; while, the latter studies show that they are susceptible to certain social movements, which aim to reduce anomie. For example, persons who find no meaning in life are thought to be susceptible to religious and political movements, which provide them with coherent belief systems that reduce their anomie (Kornhauser, 1959; Cantril, 1963; Toch, 1965;

Klapp, 1969). Persons without friends are considered susceptible to advertisements from lonely hearts clubs (Toch, 1965:93-8) or to "befriending" groups like the Samaritans (Fox, 1968) and may join them to counter their intense isolation. Alcoholics, who are often isolated, may be susceptible to the appeals of Alcoholics Anonymous as a collective solution to their problems. Persons with incurable diseases may be susceptible to the appeals of faith-healing cults or of other religious groups (Toch, 1965:120). The lonely, the alcoholic, and the incurably ill are also susceptible to suicide (studies on these topics have been reviewed by Lester, 1972). Thus, people suffering anomie and its associated problems seem to be susceptible both to suicide and to certain social movements that relieve anomie. This suggests a conclusion seldom proposed in the literature on suicide: Committing suicide or joining certain social movements may be alternative solutions to the general problem of anomie or to the specific problems, like alcoholism, associated with it.¹¹ A person who finds no meaning in life may kill himself; but, on the other hand, he may join a religious or political movement that provides him with meaning. An intensely lonely person may "choose" suicide as a solution to his loneliness or he may instead join a movement like the Samaritans that provides him with companionship. Alcoholics may kill themselves or join Alcoholics Anonymous; terminal cancer patients may commit suicide or join faith-healing cults.

If suicide and social movements are sometimes alternative solutions to the problem of anomie, then some interesting questions are raised. Why do some anomic individuals "choose" suicide, a degenerative, individual

¹¹ The relevant literature bears only indirectly on the notion that some social movements may be alternatives to suicide. Perhaps Fox (1968) has come closest to suggesting that joining a social movement (the Samaritans) may be a substitute for suicide. But even Fox did not appear to generalize his discussion to include other social movements. Farberow (1968) has suggested the formation of groups to promote "the reestablishment of feelings of belonging" in the potential suicide. But the groups he envisaged were to be formed through group psychotherapy, not through social movements. Stengel (1968) has noted that a suicide attempt may be a potential suicide's plea to be reintegrated into the group. But Stengel did not consider the social movement as one way to achieve reintegration.

solution to their problems, while other anomic persons choose regenerative collective solutions like social movements? Social movements are often regarded as drastic solutions to life's problems, to be taken only when conventional institutional solutions are unavailable or inadequate (Cantril, 1963:16; Lang and Lang, 1961:492; Wilson, 1973:32-84). Suicide is an even more drastic solution than joining a social movement and perhaps is chosen only when appropriate anomie-reducing movements are unavailable or inadequate. If so, then the following predictions should hold: In any given location, the introduction of an anomie-reducing social movement should lower the suicide rate of that location, because some potential suicides have been diverted from the more drastic solution of suicide to the less drastic one of joining a social movement.¹² Suicides in a region should decrease after a revival movement begins to recruit members there. Similarly, the growth of Wallace's "American Party" or of Thurmond's "Dixiecrats" should be accompanied by a fall in suicides, especially in the areas where these movements were most successful. This predicted drop in suicides actually occurs, as will be shown in a sequel to this paper. One would also predict that anomic persons who join a social movement should be less likely to kill themselves than anomic persons who do not join a movement. For example, alcoholics who join Alcoholics Anonymous should be less likely than other alcoholics to kill themselves; and persons with terminal cancer should be less likely to kill themselves if they belong to a faith-healing cult than if they do not. Finally, anomic persons who are committed to one movement should have a lower suicide rate than anomic persons who are less committed and continually switch allegiance from one movement to another.

Although suicide may generally be a less attractive solution than joining a social movement, in some special circumstances the two

solutions may be equally attractive. In this case, the choice of suicide over an alternative may depend on 1) the relative amount of publicity given to the alternative and to suicide 2) the type of publicity given to the alternative and to suicide. Earlier in this paper, I predicted and found that the more publicity given to front-page suicides, the more suicides increase in the area where the publicity occurs. The converse predictions should also hold: The more publicity given to an alternative to suicide, the more the suicide rate should decrease. For example, if these arguments are correct, during the election of a Pope, when much publicity is given to Catholicism, suicides should decrease.

The type of publicity devoted to suicide or to an alternative should also affect the suicide rate. Studies of suggestion (reviewed in Lang and Lang, 1961:255-89) indicate that a model is more likely to be imitated if he is prestigious and if his circumstances are thought to be similar to those of the imitator. If these conclusions can be generalized to include the imitation of suicide, then the following predictions should hold: When the amount of publicity given to a suicide is controlled for, the more prestigious the publicized suicide, the more it should be imitated. Thus, for example, Secretary Forrester or Marilyn Monroe should be imitated more often than less prestigious suicides with equivalent publicity. Controlling for the amount of publicity devoted to a suicide story, one might also expect that persons who are the most similar to the front page suicide should be the most likely to imitate it. Thus, for example, Americans should imitate the front-page suicide of an American more often than the front-page suicide of a foreigner. Furthermore, Americans like Mott or Quiggle who killed themselves abroad under exotic circumstances should be imitated less often than Americans who killed themselves at home in familiar circumstances. Finally, well-known female suicides should affect women more than men; while the opposite should be true for well-known male suicides; famous white suicides should affect whites more than blacks; the suicides of the old should be copied more often by the old than by the young; and so on.¹³ Clearly, the theoretical relationships

¹²Toch (1965:124) cites the example of a woman who felt ready to gas herself, then met a member of the Seventh Day Adventists and became a member herself. In general, Toch and other students of collective behavior do not explore the notion that committing suicide may be an alternative to joining certain social movements. See the brief comments of Toch (1965:15-16) and of Wilson (1973:36) on this issue.

¹³These predictions cannot be tested with confidence until many more suicide stories have been

between suicide, social movements, suggestion, and anomie need to be further explored.¹⁴

collected and their effects examined. Some of the predictions discussed cannot be checked with data from monthly suicide tables, because these are not subclassified by race, sex and age. However, these predictions can be checked with data taken directly from death certificates, which provide more detail on the characteristics of each suicide.

¹⁴One might also try to generalize this discussion to other behaviors that might be influenced by suggestion and might be alternatives to suicide. For example, Henry and Short (1954) have claimed that homicide may be an alternative to suicide in certain circumstances. If Henry and Short are correct, and if homicide is affected by suggestion, then the following predictions should hold: 1) homicides should increase after a publicized homicide story (see Berkowitz and Macaulay (1971) for evidence of this increase), 2) homicides should decrease after a publicized suicide story, 3) suicides should decrease after a publicized homicide story.

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