Suicide in the Perspective of Public Policy and Welfare Economics

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* Source of funding: Nil. The authors do not work for organisations that have direct or indirect financial interest in the subject matter of this paper

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ABSTRACT
Suicide has been determined to be an increasing cause of death in the developed world. The occurrence of suicide through time is not uniform across age groups and genders: rates have declined amongst the elderly and have risen sharply amongst the young. Various Western countries have identified suicide as a public issue and have designed ameliorating policies and strategies. Given competing claims of society’s resources, resources should be spent on activities that raise social welfare; resources are wasted when approaches to suicide prevention, or to alternative activities, do not impact positively on social welfare. Suicide prevention policy can be approached along a spectrum of “no government action” towards increasing levels of government preventive strategies. Various groups in society benefit from the position adopted along this spectrum: differing policies affect groups of people (characterised by, say, age, gender, diagnosis etc.) to varying degrees. This article makes explicit the assumptions, in terms of social welfare, underlying relevant empirical research for debating and developing effective suicide prevention policy. The analytical tools of Welfare Economics used here demonstrate that effective suicide prevention raises social welfare. The key assumptions about the social welfare function are made explicit, which also fosters discussion about the relevant assumptions.
Suicide as a cause of death is increasing in the developed world,¹ and is being identified by many Western governments (e.g. the US, the UK and Australia) as a social problem. Various governments have articulated policies concerned with addressing suicide through preventive action.²⁻⁸ This implies an inverse relationship between community welfare and suicide. Furthermore, politicians/bureaucrats say that it is a greater tragedy when young people take their own lives.⁹ Thus, social (community) welfare falls when the young (rather than the old) take their own lives.

However, not all people share a concern about suicide: some admire the suicide of honour, epitomised historically by the well-known acts of Seneca, Lucretia, Brutus and Portia, and Mark Anthony. For others, suicide is an act of personal autonomy, free will or self-determination, and people in the West are often puzzled, for example, by sati (or suttee), the Indian funeral custom in which a widow immolates herself alive on her husband’s funeral pyre. As another example, of more recent origin, a conference participant attending a recent presentation of ours argued that suicide can currently be regarded as a legitimate means to lessening one’s “ecological footprint”.¹⁰ ¹¹ ¹² Yet again, there is the concept of the absurd in existentialist thought that leads to suicide being regarded as quite understandable: as there is no purpose, value on meaning in the world or to life, suicide is an obvious response. (This conception has some similarities with the analysis in Hamermesh and Soss.¹³) Indeed, for Camus, suicide was the “one truly serious philosophical problem”,¹⁴ and his answer was to struggle and revolt against the absurd.¹⁵ Rebellion, for Camus, implies dissatisfaction with the human condition, i.e. one needs to face the absurd, and make a decision in favour of life. See Lengers for a discussion of Camus’ perspective for the role of health professionals.¹⁶

There is a spectrum of approaches to suicide prevention policy: it ranges from no government action towards increasing levels of government preventive strategies, and increasing levels of effectiveness. Various groups in society benefit from the position adopted along this spectrum, and differing policies affect groups of people to varying degrees (i.e. groups characterised by age, gender, diagnosis etc.). In this context, it is valuable to employ the analytic and algebraic tools from the field of Welfare Economics¹⁷ in order to demonstrate in an uncontroversial manner that effective suicide prevention raises social welfare.
One way of describing the points made in the first paragraph is to say that the (partial) social welfare function \( W_1 \) has two arguments, viz. the total social loss from suicide, and the distribution of age-at-death from suicide. Thus,

\[
W_1 = f(SL/S, I_s/E_s)
\]

where \( SL/S \) is the social loss from suicide, and \( I_s/E_s \) is the notation for “inequality/equality” in the distribution of age-at-death from suicide.

Before proceeding to issues of measurement of these two variables in (1), it is relevant to place these concerns in the wider framework of Welfare Economics.

A conventional approach in Welfare Economics is to specify social welfare \( W \) as a function of the utility levels of the \( n \) individuals who comprise the community. Thus we may write:

\[
W = f(U_1, U_2, ..., U_n)
\]

where \( U_i \) is the utility level of person \( i \). Nath has elaborated on the value judgements associated with equation (2).19

Dissatisfaction with such a social welfare function arose during the debate on welfare criteria initiated by Kaldor, and was quickly followed by contributions from Hicks and Scitovsky. This “tortuous debate”, to use Mishan’s phrase, culminated in what is now known as Little’s criterion. Little’s argument essentially is that the attempt to separate production and distribution (as had been the objective of the earlier contributions) was futile.

Thus, following Little, we may write

\[
W = f(U_1, U_2, ..., U_n; I_u/E_u)
\]

where equation (2) is augmented by \( I_u/E_u \), some measure of the distribution of welfare between the members of the community.

These distributional matters received some considerable attention in the literature on social investment appraisal, where a number of different empirical approaches were developed to incorporate distribution in cost-benefit analyses.

The Little criterion involves the provision of efficiency information and distributional information to decision-makers. Marglin then suggested that planners/economists should aim to present information to decision-makers which maximises “a weighted sum of redistribution and efficiency”. Weisbrod devised a
way of implementing Marglin’s suggestion by inferring distributional weights from previous governmental decisions: his procedure involves the simultaneous solution to a system of equations. 26 Neenan applied this technique in his analysis of an X-ray screening programme to detect tuberculosis. 27

Another approach to integrating efficiency and equity, first suggested by Eckstein, 28 is to infer distributional weights from a situation in which redistributional issues are at the forefront of attention: the personal income tax legislation (in western countries) is such a case. Mera devised a procedure to do this 29 and Nwaneri applied the approach in re-working the Roskill analysis of the (then proposed) Third London Airport. 30 Using Australian income tax schedule Doessel applied this technique in his cost-benefit study of four alternative measures of treating end-stage renal disease. 31

It is now not atypical to see welfare functions such as that indicated in equation (3) in the theoretical literature. Graaf’s argument is that there is a need to “dispense with the time-honoured device of drawing a distinction between the size and the distribution of national income and saying that welfare depends on them both”. 32 This statement is reminiscent of Little’s critique of Kaldor: “[Kaldor] suggested not a test, but a definition, which certainly separated out income distribution, but only by ignoring it… We do not believe that any definition of an increase in wealth, welfare, efficiency, or real social income which excludes income distribution is acceptable”. 24 See also Fischer, 33 Sheshinski, 34 and Fields. 35 More recently Sen has re-argued the case for incorporating distribution in (generally) standard-of-living comparisons. 36 He argues that the welfare theory of real national income comparisons is deficient particularly with respect to income distribution. His procedure is to weight goods to different people by distributional judgements. Thus, a concern for \( \frac{I_U}{E_U} \) in the welfare function now has many precedents.

As yet we have not specified the content of the utility function, \( U_i \). It is conventional to say that the arguments in \( U_i \) are goods/services consumed. Thus

\[
U_i = f(X_i, Y_i)
\]

(4)

where \( X_i \) is the amount good \( x \) consumed by person \( i \), and \( Y_i \) is the amount of good \( y \) consumed by person \( i \), and given that,

\[
X = \sum X_i \quad \text{and}
\]
\[ Y = \sum Y_i, \]

then equation (3) can be re-written as

\[ W = f(X, Y; I_u/E_u) \quad (3a) \]

Note that equations (3) and (3a) are timeless.

Although the importance of time has been recognised in economics in the context of investment appraisal since Fisher,\textsuperscript{37} it was not until 1965, with the publication of “A Theory of the Allocation of Time” by Becker,\textsuperscript{38} that time was incorporated into the body of microeconomics. One of Becker’s key points was that the consumption of goods actually takes time: this is clearly recognised in the context of going to the theatre for a musical concert, a play or a film, having a restaurant meal etc: recognition of the jointness of consumption of goods and time leads quickly to the concept of a time-price associated with the money-price of the consumption of a good. In the health sector this has led to the calculation of time-prices associated with the consumption of health care services, the first study being that of Acton.\textsuperscript{39}

It is relevant to observe that this jointness between the consumption of goods and time is not simply restricted to particular consumption goods, but is applicable to all consumption. If we consider the conventional utility function in equation (4), it is clear that this function takes no account of the jointness discussed above. One way to recognise this is to re-write equation (4) as follows:

\[ U_i = f(X_i, Y_i; t_x, t_y) \quad (5) \]

where \( t_x \) and \( t_y \) are the times associated with the consumption of \( X_i \) and \( Y_i \). It is important to note that this equation is exactly the same as Becker’s equation (4), with the exception of notation.

It is recognised in equation (5) that time (associated with consumption) is an argument in the utility function for person \( i \). Summing across \( n \) persons, we have total time (\( T \)) as follows:

\[ T = \sum_{i=1}^{n} t_x, t_y \]

Given that time enters the utility function, there is but a small step to recognise that time also enters the social welfare function (\( W \)). Thus we may re-write equation (3a) as follows:
We assume that $W$ is increasing in $X$ and $Y$: given that $T$ is jointly involved with $X$ and $Y$, it follows that $W$ is also increasing in $T$. Thus the period of time during which consumption is available (i.e. the period of life) of the members of the community is an argument in the social welfare function.

Death from any cause (including suicide) will decrease the value of the social welfare function. Given that inequality/equality (associated with goods) is an argument in the welfare function, and that people jointly combine goods and time, it follows that the distribution of time is also a component of $W$. Thus we may write:

$$ W = f(X, Y; I_U / E_U; T) $$

(3b)

Let us now return to equation (1), a statement of government concern for social loss from suicide and its distribution. This equation was described as a partial social welfare function. Given that time (and its distribution), have now been shown, as in equation (3c), to be arguments in the general social welfare function, the statement of $W_1$ in equation (1), can be seen as a part of $W$ in equation (3c). In other words, a concern for suicide (and its distribution) can be regarded as part of the general body of Welfare Economics.

Thus, extensions of modern Welfare Economics provide a justification for time to enter the social welfare function. In particular, we argue elsewhere\cite{17} that the appropriate approach to detecting whether societal intervention has had an impact on suicide is to gather time series data on both the location and the distribution of suicide, measured not by headcount measures (conventional mortality data), but in terms of the years of unlived lifetime due to suicide, as measured by the Potential Years of Life Lost (PYLL) in populations\cite{40}.
References


