‘Cry of Pain’: Explaining the Gender Difference in Suicidal Behavior

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Abstract

This paper provides a simple model to explain the gender difference in suicidal behavior. The gender difference stems from that men have higher completed suicide rates than women do. This paper offers a unified approach to explain suicidal behaviors. With this, we identify the main factors leading to suicide attempts, precipitating events and mental illness, and then stress the factors affecting the gender difference in suicidal behavior, differences in reference points, perceptive costs of being violent, and valuations of attention from others.

Keywords: gender difference, attempted and completed suicide rates, reference points
JEL Classifications: J16, J17, Z19.

1 Prelude

Everyone dies eventually. Even though no one would doubt that death is inevitable, most people try to prolong their lives and avoid death as much as possible. However, a few people attempt to take their own lives. Throughout the world, the statistics are not insignificant. For example, in the U.S. alone, suicide took the lives of 32,439 Americans in 2004 and is the 11th leading cause of death for all ages and the third leading cause of death for young aged 15-24. Therefore, it is indeed an important public problem that we cannot ignore.

Even though reliable statistics on suicide are rare, the gender difference in suicidal behavior is an exception. According to the Center for Disease Control and Prevention, “4.2 males complete suicides to every 1 female and females attempt suicide three times more often than males.” Helgeson (2002), Jamison (1999), and Williams (1997) documented similar results on the gender difference in suicide behavior. This gender difference has been persistent over time and over different cultures [See Table 1]. This is from the fact that men tend to choose more lethal suicide methods than women do. This paper aims to scrutinize this issue.

Suicide is neither a well-defined nor a well-understood problem. It seems irrational to the eyes of social scientists. Some psychiatrists even regard it as a phenomenon of mental illness

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1This data is taken from Center for Disease Control and Prevention (web-based injury statistics query and reporting system), August 2007.
Table 1: Gender difference in suicide. (Source: Helgeson(2002))

<table>
<thead>
<tr>
<th>Nations</th>
<th>Male : Female</th>
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<tr>
<td>Australia</td>
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<tr>
<td>Austria</td>
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<td>Belgium</td>
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<td>France</td>
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<td>Germany</td>
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such as depression. At the same time, however, suicide appears a choice problem to a certain extent. Thus, the ill-definedness may not be resolved without a model encompassing the wide range of self-destructive behaviors, from an ordinary risky behavior such as smoking or speeding to a fatal one such as discharge of a firearm.

The existing *economics* literature on suicide has been scanty while many psychological studies have paid attention to the self-harming behaviors including suicide. The two exceptions are Hamermesh and Soss (1974) and Cutler, Glaeser, and Norberg (2000). Hamermesh and Soss (1974) was the first economics research on suicide and provided an explanation for the high suicide rate among elders. More recently, Cutler, Glaeser, and Norberg (2000) concentrated on the rise of youth suicide after 1980s. However, both studies take a pure economics approach to examine certain phenomena of suicides.

This paper is unique in combining economic, psychiatric, psychological, and sociological approaches to explain suicides. Suicide attempts usually start with precipitating events. Mental illness such as major depression combined with precipitating shocks often magnifies suicidal mind. Given the magnitude of shocks and depression, we draw the following propositions on the gender difference in suicidal behavior. First, psychological studies indicate that the reference points for men are higher than women. The suffering, therefore, would be larger for men than women and men are more likely to opt for a permanent solution. Second, due to the different perceptive cost of being violent, men are likely to employ more fatal suicide methods than women. Finally, women tend to use suicide attempts as a signal of unhappiness as powerless women are more likely dependent on other people than men. If women value more of perceived response from others than men, our conventional examples show that women employ less lethal suicide methods than men.

This paper is organized as follows. The next section explores some factors leading to suicidal
Section 3 provides a simple model of suicide to explain the gender difference. The final section offers some concluding remarks.

2 Some Thoughts on Suicide Motives

We start with a pure economic approach to suicides. It is based on a comparison of current life utility relative to afterlife utility. As the property right of one’s body belongs to each person, the economic approach to suicides reduces to a choice problem which enables us to discuss strategic motives in suicide attempts. Some suicide attempts appear to demonstrate anger or distress and/or to receive attention from the targets [Cutler, Glaeser, and Norberg (2000) and Lester (1997)]. This strategic choice deliberately aims to manipulate the relationship or hurt people close to the attempters. In this case, the attempters value more of the current life utility relative to the afterlife utility even though their signals have to be credible enough. On the other hand, a completed suicide may be the result of a strong intent to end one’s life. For some reasons, the victim assesses the afterlife utility more attractive than current life utility.²

A challenge with this approach is to rationally estimate one’s afterlife utility. However, this valuation can be personal and subjective. For example, Iannaccone (1998) reported that the major proportion of religious people has tendency to believe in afterlife, heaven and hell, regardless of any scientific backup. For whatever reasons, potential suiciders believe that their afterlife utilities are higher than their current life utilities. The valuation of afterlife relative to the current life is critical in the choice of suicide attempt and the fatality of its method. Furthermore, when one suffers from an adverse shock, one may value death (and afterlife) differently from under the normal event.³ This is why psychiatric, psychological, and sociological factors along with an economic approach should be incorporated in explaining suicides.

Mental illness may influence the valuation of afterlife and thus trigger suicide attempts. Recently, psychiatric and psychological studies have made some progress in relating mental illness to suicides. Some psychiatric studies identify the major depression as the one of the main causes (or symptoms) of suicide [for example, Jamison (1999) and Qin et al (2000)]. Jamison (1999) documented that “one person in every five with major depression will attempt suicide, and nearly one-half of those with bipolar disorder will try to kill themselves at least once.” Furthermore, she also claimed that for those with mood disorders, the risk of suicide is highest if the depression is very severe.⁴ Qin et al (2000) tried to identify the significant risk factors for suicides in Denmark. They examined both psychiatric and socio-economic factors that can explain the gender difference. They too found that the history of mental disorder is a significant risk factor for suicide attempts. Thus, depression is partially responsible for suicides.

But, how do major depressions occur? We do not know for sure. But the existing literature points to the psychological and social as well as the genetic and biological factors of the main causes of depression. Although genetic and biological factors may increase the risk of a suicidal behavior, neither psychiatric nor psychological studies claim that they are solely responsible for it.⁵ Even Jamison (1999) emphasized that severe stress such as divorce, job loss, death in family,

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²Suicides (either attempted or completed) transfer tremendous stresses and suffering to others who wish to see them to live. Nevertheless, suicides generate negative externality on their relatives and friends.

³Readers can consult Tversky and Kahneman (1991) and Brunnermeier (1998) for this point.

⁴But again, the number of studies (including Nazroo (2001)) confirmed that episodes of depression were almost always preceded by a major life-precipitating event as in the case of suicide attempts.

⁵For example, Curtiss (2001) emphasized that depression is a choice rather than anything else.
history of violent behavior, social isolation, as well as major depression are the significant risk factors for suicide attempts. Lewis and Slogget (1998) also confirmed that the unemployment contributed to the rise of suicide rates during the years they studied. Although a few psychological studies have regarded suicides as “an expression of a mental illness,” Baumeister (1990) and also many other psychologists pointed out that a major life event shock to a potential victim is often a necessary condition for attempted suicides.\(^6\)

We can conclude that suicide attempts are caused and influenced by economic, psychiatric, psychological and sociological factors. It is, without doubt, a very complex process. However, we know that, in many cases, precipitating events are the precondition for suicide attempts. Then the irrationality caused by a mental illness such as depression may affect the perceptions and the processes of thought to bring about suicide attempts.

### 3 A Simple Model of Gender Difference in Suicidal Behavior

To explain the difference of completed suicide rates between the genders, we design this as an individual’s choice problem given a possibility of mental illness. The sequence of decision-making can be described as follows:

**Stage 1** A potential suicider forms the expectation of relative income.\(^7\)

**Stage 2** The potential suicider makes a choice of the suicide fatality.

We assume that a potential suicider maximizes the following utility function with respect to \(\theta\):

\[
\max U(\theta) = (1 - \theta)V(r(\theta), z) + \theta W - C(\theta)
\]

\[
\text{s.t.} \quad 0 \leq \theta \leq 1
\]

where \(V\) and \(W\) refer to the current life and afterlife utilities, respectively, depending on the perceptions held by different individuals as discussed in Section 2. The choice variable \(\theta\) determines the suicide fatality. We assume that every self-destructive behavior can be ordered and normalized in the unit “continuum” of [0,1] according to its fatality. For instance, if \(\theta\) is 1, then she will die for sure. Finally, \(C(\theta)\) indicates the cost of employing the suicide fatality, \(\theta\). This cost refers to the effort and fear of employing \(\theta\), assumed to be proportionate to the fatality, i.e., \(C(\theta) \equiv c\theta\), where \(c\) is a positive constant. By letting \(W = W - c\) we can restate (1) as follows:

\[
\max U(\theta) = (1 - \theta)V(r(\theta), z) + \theta W
\]

\[
\text{s.t.} \quad 0 \leq \theta \leq 1
\]

\[
(1')
\]

Two factors may affect current life utility, \(V \equiv V(r(\theta), z)\). First, \(r(\theta)\) represents the perception of expected responses by others when a potential victim employs \(\theta\). We assume that

\[
r'(\theta) > 0 \text{ and } r''(\theta) \leq 0.
\]

\(^6\)Moscicki (1994) also stressed the importance of precipitating events in leading to suicide attempts.

\(^7\)From now on, unless specified otherwise, we assume that the potential suicider is a female.
The first condition indicates that the suicider perceives that others would respond more as she chooses more deadly suicide method. We also assume that $V_r > 0$ for all $r \geq 0$ which captures the idea that when others (close to you) pay more attention to you, you would be better off.\(^8\)

The second argument, $z$ denotes the expected level of happiness given a subjective reference point. Loewenstein, O’Donoghue, and Rabin (2003) presented evidence that people are projecting their current preferences onto their future selves. Moreover, their evidence points to the projection bias in predicting future utility.\(^9\) The expected future level of happiness $z^E$ is given by

$$z^E = (1 - \alpha)z^I + \alpha z^S,$$

where, $z^I$ is the initial level of happiness whereas $z^S$ with $0 \leq z^S \leq z^I$ indicates the current shock. Also $\alpha$ indicates the magnitude of bias or depression. Thus, if $\alpha$ is close to 1, then this person suffers from major depression. On the other hand, if $\alpha$ is close to 0, then her expectation is close to the true estimation and, as a result, she does not suffer from mental illness.\(^10\) We can rephrase (2) as follows: $z^E = z^I + \alpha z^S$, where $\Delta z = z - z^I$, the difference between the happiness levels of shock and initial state. Therefore, the expression (2) captures our discussion in the previous section that the current precipitating shock as well as his perception bias from a mental-illness affects his prediction of future happiness. As one’s expected level of happiness is simply her projection of future happiness given her reference level of happiness, a natural way to define $z$ is

$$z = \frac{z^E}{z^R},$$

where, $z^R$ denotes the reference level of happiness. This idea is consistent with the prospect theory pioneered by Tversky and Kahneman (1981), Loewenstein (1988), and Tversky and Kahneman (1991). Baumeister (1990) also noted that the divergence generates acute disappointment when reality falls short ($z^E$ falls far below $z^R$). Psychological studies indicate that suicidal individuals differ in the way they think about the future [Williams (1997)]. Hence, the belief about what will happen has an independent effect on one’s utility. Notice from the previous section that $z^R$ can be different for the different genders. Apart from genders, this can be also influenced by the differences of cultural orientation and family backgrounds, etc.

If your expectation of future becomes brighter relatively to your reference point, the current life utility increases: $V_z > 0$ for all $z \geq 0$. It is also reasonable to assume that $V_{rr} < 0, V_{zz} < 0$. Then, given in addition that $V_{rr} V_{zz} - V_{rz}^2 > 0$, for all $r \geq 0$ and $z \geq 0$, a set of monotonicity and concavity assumptions are satisfied. We introduce an additional assumption that

$$V_{rz} = \frac{\partial^2}{\partial r \partial z} V \leq 0.$$  

This implies that the value of expected attention (response) from others gets greater when you expect that you would become less happy.\(^11\)

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\(^8\)Cutler, Glaeser, and Norberg (2000) provided a similar setup when they presented a model of youth suicide. In their setup, children send a signal of unhappiness (an attempted suicide) to parents in order to receive more resources from parents.

\(^9\)Notice that true happiness level for the future is independent of current shock.

\(^10\)This idea is partially backed up by Caplan (2002) who discussed economics of insanity.

\(^11\)Cutler, Glaeser, and Norberg (2000) adopted a similar assumption. As they focused on the youth suicide, they assumed that the value of parental resources is greater when the child is exogenously less happy.
The first order condition for (1') and the second derivative are given as follows.

\[
\frac{d}{d\theta} U = W - V + (1 - \theta)V_r r'(\theta) = 0, \tag{4}
\]

\[
\frac{d^2}{d\theta^2} U = -2V_r r'(\theta) + (1 - \theta)(r'(\theta))^2 V_{rr} + V_r r''(\theta) < 0 \text{ for all } \theta. \tag{5}
\]

Note that the negativity in (5) is from (A1) and, hence, the strictly concave \( U \) has a unique optimum \( \theta = \theta^* \). Therefore, if \( dU/d\theta|_{\theta=0} \leq 0 \) in (4), then \( \theta^* = 0. \) Also, if \( dU/d\theta|_{\theta=1} \geq 0 \), then \( \theta^* = 1. \) These are the two extreme cases that she is completely normal or suicidal, respectively. To avoid such trivial cases, we assume

\[
\frac{d}{d\theta} U|_{\theta=0} > 0, \text{ or, equivalently } V(r(0),z) < V_r(r(0),z) r'(0) + W, \text{ and,}
\]

\[
\frac{d}{d\theta} U|_{\theta=1} < 0, \text{ or, equivalently } V(r(1),z) > W. \tag{A3}
\]

Then, from (4), (5), and (A3), there is unique interior point \( \theta^* \) satisfying \( W - V + (1 - \theta)V_r r'(\theta) = 0 \), or equivalently,

\[
1 - \theta = \frac{V(r(\theta),z) - W}{V_r r'(\theta)}. \tag{6}
\]

For each fixed \( z \), write

\[
g(\theta; z) = \frac{V(r(\theta),z) - W}{V_r r'(\theta)}. \tag{7}
\]

First, we argue that \( g(\theta; z) \) can be conveniently assumed to be a monotone increasing function of \( \theta \). The derivative of \( g \) with respect to \( \theta \) is

\[
g'(\theta; z) = \frac{\left(V_r(r(\theta),z)r'(\theta)\right)^2 - \left(V(r(\theta),z) - W\right)(r'(\theta))^2 V_{rr}}{\left(V_r r'(\theta)\right)^2}. \tag{8}
\]

Since \( V_r > 0 \) and \( r'(\theta) > 0 \), (6) implies \( V(r(\theta^*),z) - W > 0 \) at the unique optimum \( 0 < \theta^* < 1 \). Furthermore, once \( V(r(\theta),z) - W \) gets nonnegative at some \( \theta = \theta_0 \), it will remain so thereafter as it is a monotone increasing function of \( \theta \). Since \( V_{rr} < 0 \), (8) implies that \( g'(\theta; z) \geq 0 \) for all \( \theta \geq \theta_0 \), and hence \( g(\theta; z) \) is monotone increasing over the region \( \theta_0 \leq \theta \leq 1 \) that contains \( \theta^* \). Therefore, under (A3) for an interior solution of \( \theta \), we have the following lemma.

**Lemma 3.1** For each fixed \( z \), the unique optimal \( \theta^* \) is attained at the intersection of the monotone increasing function of \( \theta \), \( g(\theta; z) \) and the straight line \( h(\theta) = 1 - \theta \) over \( 0 < \theta < 1 \). (See Figure 1.)

The lemma implies that we may only be concerned about the region \( \theta > \theta_0 \) where \( g(\theta; z) \) is positive. Then \( g(\theta; z) \) is also monotone increasing function of \( z \): if \( z > z' \) then \( g(\theta; z) > g(\theta; z') \) for all \( \theta \). For, in (7), \( V_r(r(\theta),z) \) is a monotone decreasing function of \( z \) while \( V \) is monotone increasing with respect to \( z \). Denote by \( \theta^*(z) \) the optimal choice \( \theta^* \), namely, the intersection point of \( g(\theta; z) \) and \( h(\theta) = 1 - \theta \) for a given \( z \). Then the monotonicity of \( g(\theta; z) \) in \( z \) implies that if \( z > z' \) then \( g(\theta^*(z); z) > g(\theta^*(z); z') \). See Figure 1.

**Lemma 3.2** If \( z > z' \) then \( \theta^*(z) < \theta^*(z') \).
Figure 1: Fatality choice $\theta^*(z)$ for different expectation $z$ of happiness

The gender difference in suicidal behavior is boiled down to the evidence that men employ more fatal means such as gunshots than females when they commit suicide. Williams (1997) documented that females are more likely to choose less lethal means such as a drug overdose than men. From our setup, it is equivalent to $\theta^*_F < \theta^*_M$.

First, the difference of reference incomes between the genders may be partially responsible for the gender difference in suicidal behavior. Rizzo and Zeckhauser (2003) provided some evidence of the reference income difference between the genders. They found that the reference income levels of males are higher than those of females. If one has a high reference point, then he or she has to put up with high level of efforts to keep it up. For example, the unemployment can be regarded as a precipitating event that would substantially lower the future income level relative to the reference point. In this case, if men’s reference point is higher than women’s given the identical shock, then men would suffer more from the precipitating shock due to the unemployment. As a result, it is likely for men to induce more risky and mistaken choices such as suicides than women.\textsuperscript{12} From our model, we can propose that $z_F > z_M$ for the same level of precipitating shock. In this case, from Lemma 3.2, if all the other conditions are the same, then $z_F > z_M$ implies $\theta^*_F < \theta^*_M$.

**Proposition 3.3** *Given the equal severity of shock and magnitude of depression, men choose more lethal suicide methods than women as their standard for reference levels is higher for men than women.*

Second, another intrinsic gender difference stems from the difference with respect to the perception of aggression and violence. Many psychological studies point to the finding that men are more aggressive and violent than women [Kwong et al (1999), for example]. Lester (1997) also claimed that women are even more concerned than men with what happen to their bodies after death. These evidences point to the case where the cost of using a lethal suicide technology may be lower for men than women.

If the other conditions, namely, $z$ and $r$ are the same for both genders, then, from (6), we have

\textsuperscript{12}Several finance literatures indicate that females exhibit less risk-taking than males do. Dwyer, Gilkeson and List (2002) pointed to such evidence.
\[ \theta_F^* < \theta_M^* \iff \frac{V^F(r(\theta_F^*), z) - \overline{W}}{V^F_r(r(\theta_F^*), z) r'(\theta_F^*)} > \frac{V^M(r(\theta_M^*), z) - \overline{W}}{V^M_r(r(\theta_M^*), z) r'(\theta_M^*)}, \]  

(9)

where \( F \) and \( M \), respectively, stand for females and males. If men are more likely to perceive the lower cost of employing a fatal mean than women, i.e., \( c_M < c_F \), then this implies \( \overline{W}_F < \overline{W}_M \). From (9), this yields \( \theta_F^* < \theta_M^* \), if other conditions are equal.

**Proposition 3.4** Given the equal severity of shock and magnitude of depression, men tend to employ more risky methods than women as the perceptive cost of using a lethal suicide technology is lower for men.

Finally, different roles imposed by societies on the different genders may affect suicidal behavior differently. Murphy (1998) emphasized that men value independence and decisiveness, and they regard acknowledging a need for help as weakness and avoid it. Women, on the other hand, value interdependence and readily accept help whenever they need it. Helgeson (2002) emphasized that women are socialized in the ways that lead them to perceive less control than men over their environment.\(^{13}\) In this case, women value attention from others more than men do, i.e.,

\[ V^F_r > V^M_r. \]  

(10)

However, from (9) in which \( V \) and \( V_r \), respectively, are in the numerator and the denominator in their functional forms, we cannot draw any unambiguous result on the gender difference. Thus, in order to capture the essence of our model more thoroughly, we consider the following two conventional examples.

**Example 3.5**

\[ V(r, z) = \delta \ln(1 + r) + (1 - \delta) \ln(1 + z) \]  

for \( r \geq 0 \) and \( z \geq 0 \).

Example 3.5 is a simple modification of the Cobb-Douglas utility function. With this example, all the assumptions made for our model \( (1') \) are satisfied. Especially, \( (A2) \) holds with the equality.

In this case, for each fixed \( z \), \( g(\theta; z) \) from (7) is as follows:

\[ g(\theta; z) = \frac{1 + r(\theta)}{r'(\theta)} \left( \ln(1 + r(\theta)) - \ln(1 + z) + \frac{1}{\delta} (\ln(1 + z) - \overline{W}) \right). \]  

(11)

In examining (11), it is interesting to note the sign of \( (\ln(1 + z) - \overline{W}) \). The sign indicates the potential victim’s mood (level of happiness). For example, if the sign is positive and large, then she is a normal person and does not consider a suicide as an option. If the sign is negative, then she is relatively unhappy and likely to attempt a suicide. Given the negative sign, as \( \delta \) gets larger, \( g(\theta; z) \) gets larger. Then from (6) the optimal \( \theta^* \) becomes smaller. Notice that in Example 3.5, with the same \( r \) and \( z \), a larger \( V_r \) implies a larger \( \delta \). Therefore, given the negative sign, \( \theta_F^* < \theta_M^* \) can be established from the premise \( V^F_r > V^M_r. \)

**Example 3.6**

\[ V(r(\theta), z) = \left( ar(\theta)^\rho + z^\rho \right)^{\frac{1}{\rho}}. \]

\(^{13}\)Similarly, (powerless) teenagers use suicide attempts as a signal of unhappiness to their powerful parents [Cutler, Glasser, and Norberg (2000)].
Example 3.6 is adopted from the CES utility function. To satisfy (A2), we restrict $\rho \geq 1$. Then, the example is complimentary to the previous one in the sense that the isouquant of CES function approaches to that of Cobb-Douglas function as $\rho \to 0$. The partial derivative is given as follows.

$$V_r = \frac{a^\frac{1}{\rho} r^{\rho-1}}{(r^\rho + \frac{1}{a} z^\rho)^{\frac{1}{1-\frac{1}{\rho}}}}.$$  

Thus, when all the other things are the same, $V_r$ becomes larger if and only if $a$ gets larger.

Thus, the condition (10) is reduced to

$$a^F > a^M,$$  

(12)

where, as before, $a^F$ and $a^M$ stand for the coefficient $a$ in the utility function from Example 3.6 of women and men, respectively. Thus, in light of (6), to understand the effects of the different valuation of the attention from others, i.e., (10) on $\theta^*$, one needs to examine the effects of different $a$’s on $g(\theta; z)$. It is easy to see that

$$g(\theta; z) = \frac{1}{r(\theta)^{\rho-1} r'(\theta)} \times \frac{1}{a} \left( (ar(\theta)^\rho + z^\rho - (ar(\theta)^\rho + z^\rho)^{\frac{1}{1-\frac{1}{\rho}}}) W \right).$$

This implies that if $W > z$ then $g(\theta; z)$ is an increasing function of $a$. To demonstrate this, we write $h(a) = \frac{1}{a} \left( (ar(\theta)^\rho + z^\rho - (ar(\theta)^\rho + z^\rho)^{\frac{1}{1-\frac{1}{\rho}}}) W \right)$. Then, it is straightforward to check that

$$h'(a) = \frac{1}{a^2} \left( W (ar^\rho + z^\rho)^{-\frac{1}{\rho}} \left( \frac{a}{\rho} r^\rho + z^\rho \right) - z^\rho \right).$$

(13)

From (13), it is easy to show $h'(a) \geq h'(a)|_{r=0}$, or equivalently, $h'(a) \geq \frac{1}{a^2} (W z^{\rho-1} - z^\rho) = \frac{1}{a^2} (W - z)$. Therefore, when $W > z$, the larger $a$ gets, the larger $g(\theta; z)$ becomes for the same $z$ and $\theta$. This, due to (6), implies a smaller $\theta^*$. Thus, (10) implies $\theta^*_F < \theta^*_M$, as expected.

It is interesting to notice that, in this particular example, the condition $W > z$ is exactly the first part of (A3), the necessary condition for $\theta^* > 0$. In other words, if the victim is ever suicidal, a larger $V_r$ always alleviates the lethality of the suicide method. Thus, for the CES utility function case, $\theta^*_F < \theta^*_M$ is again established (without any additional assumption) from the premise, $V^F_r > V^M_r$. This is consistent with the previous finding with the Cobb-Douglas function.

From the two conventional examples, we are able to crystallize the effect of perception of attention from others on the suicide technology as follows.

**Proposition 3.7** When the victims are unhappy enough to be suicidal, women choose a less lethal suicide methods than men as they give more value to the expected attention from others.

In Cutler, Glaeser, and Norberg (2000), children use attempted suicides as a signal of unhappiness to powerful parents. In return, when the signals are credible enough, their parents transfer resources to them. Their model is virtually a strategic decision-making setup under asymmetric information. The central result of their strategic model is that suicide attempts are more common as parental resources are greater. However, this is a controversial prediction and the evidence is weak.
Our model uses a similar framework where women, instead of children, use attempted suicides as a signal of unhappiness. The main difference of our model from theirs, however, stems from that our model virtually is a one-person decision making problem and stresses the importance of self-perception. Isen (2000) claimed that bad mood usually makes people more self-focused and less aware of others. Hence, when people suffer from bad moods that lead to suicide attempts, they are more likely to make their own decisions based on self-focused perceptions. Strategic motives may not be that important. Even if we perceive that we send our signals to others, it is our perception that matters. In this case, the characteristics of the receivers do not matter as the empirical evidence pointed out in their paper. Our model predicts that if women value the attention from others more than men for sociological reasons, then they choose less lethal suicide methods than men.

4 Concluding Remarks

This paper provides a simple model to explain the gender difference in suicidal behavior. This paper is unique in combining economic, psychiatric, psychological and sociological approaches into a single framework to model a seemingly irrational behavior: suicide. For example, Cutler, Glaeser, and Norberg (2000) had to provide three different models for three different motives of suicides. Instead, we are able to offer a single model of suicide to explain the gender difference in suicidal behavior: men choose more lethal suicide methods than women do.

With this unified approach, the main results of this paper can be summarized as follows. Precipitating events may be the precondition for suicide attempts and some magnitude of mental illness such as depression combined with such events can induce suicidal behavior. Our model predicts the following results on the gender difference. Due to the higher reference points for men than women, given the equal severity of precipitating shocks, the divergence between the reference and the expected future level becomes larger for men than women. As a result, men are more likely to successfully commit suicides. Second, due to the different perception of cost of being aggressive and violent, it is likely for women to employ less fatal suicide methods than men. Finally, when male dominant societies impose women to rely on the interrelationships, women value more of perceptive attention than men. Under such premise, the proposed model combined with conventional examples shows that women employ less lethal suicide means than men and thus tend to use suicide attempts as signals of unhappiness.

References


Curtiss, A. (2001), Depression is a Choice: Winning the Battle without Drugs, Hyperion.

\(^{14}\)Since people are so self-focused when they commit suicides, they blindly ignore the effects of negative externality.

\(^{15}\)In fact, their empirical evidence points to otherwise. The children under rich parents tend to make suicide attempts less than the children under poor parents.


