

Do Suicide Barriers on Bridges Save Lives?



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The Cold Spring Bridge Barrier Project

- A suicide barrier has been proposed for the Cold Spring Bridge.
- This bridge sees an average of 1 suicide per year.
- The total cost for the barrier is projected to be \$3.2 million.
- Will this barrier save lives?



The Theory: Means Restriction

- Clinical research suggests many suicidal individuals are ambivalent about suicide, decision to commit suicide can be “impulsive.”
- Studies on means restriction have found suicide rates fall when access to some types of lethal agents is restricted (primarily household items).
- Some have argued that these findings can be extrapolated to bridges.

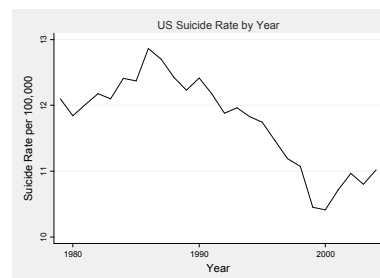
The Competing Theory: Substitution

- Preventing suicides at a particular location is not the same thing as saving lives.
- *Substitution*: a barrier at one location simply leads suicidal individuals to substitute a new location or method for suicide.
- What must be done to rule out this alternative theory?

Preventing Suicides at a Location versus Saving Lives

- We can't just look at the suicide rate on the bridge to know if barriers work, as this does not rule out substitution.
- **A hypothetical example**: a bridge with 10 suicides per year.
- With barriers, all 10 are diverted from the bridge, but commit suicide elsewhere.
- With phones, 5 jump from the bridge, but 5 pick up the phone and are saved.
- Barrier reduces the suicide rate at the bridge more than the phone, but saves fewer lives than the phone.

Don't Confuse Long-Term Trends with a Barrier Effect



How Do We Distinguish Between These Competing Theories?

- If barriers save lives, there must be evidence that fewer people are committing suicide after a barrier is installed.
- We are looking for a *statistically significant* drop in the suicide rate in a community after a barrier is installed.
- An effect is statistically significant if we can be reasonably sure that the change we see is not just due to natural variation in the suicide rate.

Commonly Cited Studies in the Debate

Seiden (1978)

- Tracked 515 individuals prevented from jumping from the Golden Gate Bridge. 94% were still alive after 7 years.
- Not actually a test of barrier effectiveness – suicides in this study were prevented by human intervention.
- Does not address the substitution question – would these people have gone elsewhere if there was a barrier?
- Possible self-selection problem.

Taft/Ellington Bridge Study (1994)

- Suicide barrier installed on Ellington Bridge in Washington DC. Suicides there stop, do not increase at neighboring Taft Bridge.
- This study is often cited as proof there is no substitution.
- However, this assumes the Taft Bridge is the only other possible suicide option.
- Authors point this out, caution their study does not prove that barriers save lives.

A quote from this study:

- “Are the data provided sufficient to substantiate the effectiveness (or lack thereof) of bridge barriers as a means to prevent suicide? The answer is no, the data are not sufficient to answer that question, because they do not touch on the issue of whether persons who would have committed suicide by jumping from the Ellington Bridge went on to commit suicide by other means. ... [P]ersons frustrated in their efforts to commit suicide by jumping from the Ellington Bridge are in no sense restricted to committing suicide by jumping from the Taft Bridge.” (p. 92)

Beautrais (2001)

- Found when a barrier was removed from a bridge, suicides from that bridge increased substantially.
- Note this bridge was adjacent to the region’s largest inpatient psychiatric unit, which would seem to make it a more likely site for “impulsive” suicides than the Cold Spring Bridge.
- No statistically significant change was detected in the region’s suicide rate.

A quote from this study:

- “The weight of evidence from these studies clearly suggests reductions in the rate of suicide by jumping from the sites following the introduction of barriers. However, the extent to which such changes lead to (i) an overall reduction in suicide or, (ii) increased preferences for other sites or methods of suicide remains contentious.” (p. 561)

Pelletier (2007)

- Found that a suicide barrier on the Memorial Bridge in Maine reduced suicides at that location.
- Suicide by jumping from other structures remained unchanged after installation of the barrier.
- However, “the decline in the suicide rate in Augusta after installation of the safety fence was not statistically significant.” (p. 58).

Reisch et al. (2007)

- Most recent study (published December 2007).
- “Barriers on bridges may prevent suicides but also may lead to a substitution of jumping site or method.” (p. 681)
- “The question of whether restricting the availability of a specific method will reduce the overall frequency of suicide is controversial.” (p. 681)

Summary of Previous Research

- To date, no study has found a statistically significant decline in the suicide rate after installation of a barrier.
- This could be because we don’t have enough data to clearly detect the decline (suicide by jumping is rare).
- It could also be because suicide barriers are ineffective.
- As of now, we cannot rule out substitution – nobody knows if suicide barriers save lives or not.

Public Health Officials Recognize This Uncertainty

- “In addition to the measures described, whose efficacy is attested to by the scientific literature, it is thought that other measures, such as the use of fencing on high buildings and bridges, could also contribute to a reduction in suicide rates, although there is no definitive evidence to support this idea.”

(World Health Organization, 1998, p. 87)

Conclusion

- Barriers have proven to be effective at preventing suicides at a particular location.
- However, there is no scientific evidence that barriers save lives.
- What should be done in the case of the Cold Spring Bridge?