



Why People Die By Suicide

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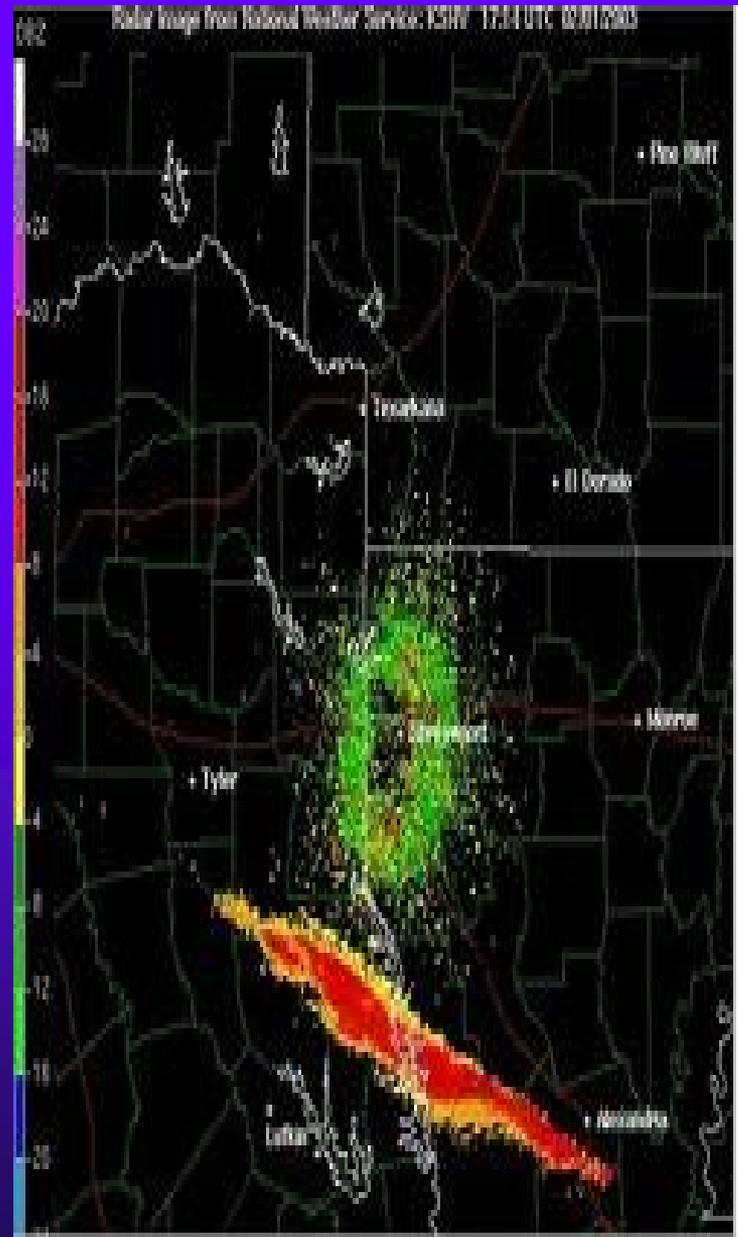


On February 1,
2003, the
space shuttle
Columbia
disintegrated
as it flew over
the western
United
States...





... finally showering down over East Texas and Louisiana in thousands of pieces, killing all seven crew members.



The cause was a dense, dry, brownish-orange piece of foam weighing about 1.7 pounds, 19 inches long and 11 inches wide. The foam hit *Columbia's* left wing traveling 545 mph, causing what investigators now know was a significant breach in the wing.



SUSPECTED CAUSE OF DISASTER

1. Launch: 16 Jan 2003

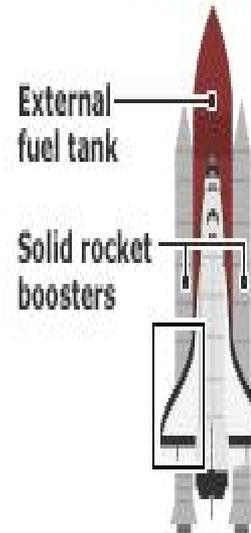
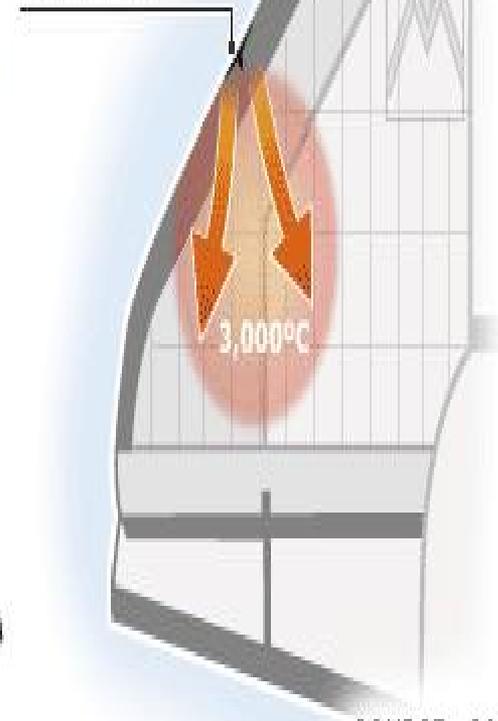
Foam from external tank strikes wing



2. Attempted re-entry: 1 February 2003

Crack in leading edge caused

by impact allows superheated gas to penetrate. Wing interior melts and disintegrates



SOURCE: CAIB



One of the members of the panel investigating the accident said “The excitement that only exists when there is danger was kind of gone – even though the danger was not gone.” Key NASA administrators decided against getting in-flight satellite images of the left wing, in part because their sense of danger about foam strikes has eroded over the years, *due to repeated experience with them.*



Relevance to Suicide

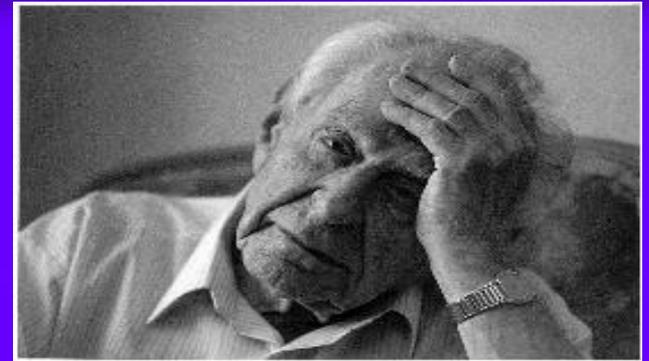
A key point of my theory is that when people get used to dangerous behavior – when they lose “the excitement that only exists when there is danger” in the words of the accident investigator – the groundwork for catastrophe is laid down. Just as NASA administrators became inured to a very real danger, to the point of no longer even worrying about foam strikes, so too, I will argue, do potentially suicidal people lose the danger signals and alarm bells that should accompany self-injury.



The Acquired Ability for Suicide

When self-injury and other dangerous experiences become “unthreatening and mundane” – when people work up to the act of death by suicide by getting used to its threat and danger – that is when we might lose them. That is when they have developed *the acquired ability to enact lethal self-injury*.

A Good Theory



- ◆ Popper: Internally coherent; follows laws of logic; *incremental; survivor of deductive tests.*
- ◆ Parsimony: Occam's razor; Dante: *Omne superfluum Deo et Naturae displiceat* (Everything superfluous is displeasing to God and Nature).





A Good Theory

- ◆ Also, explains the heretofore unexplained....

Why....?

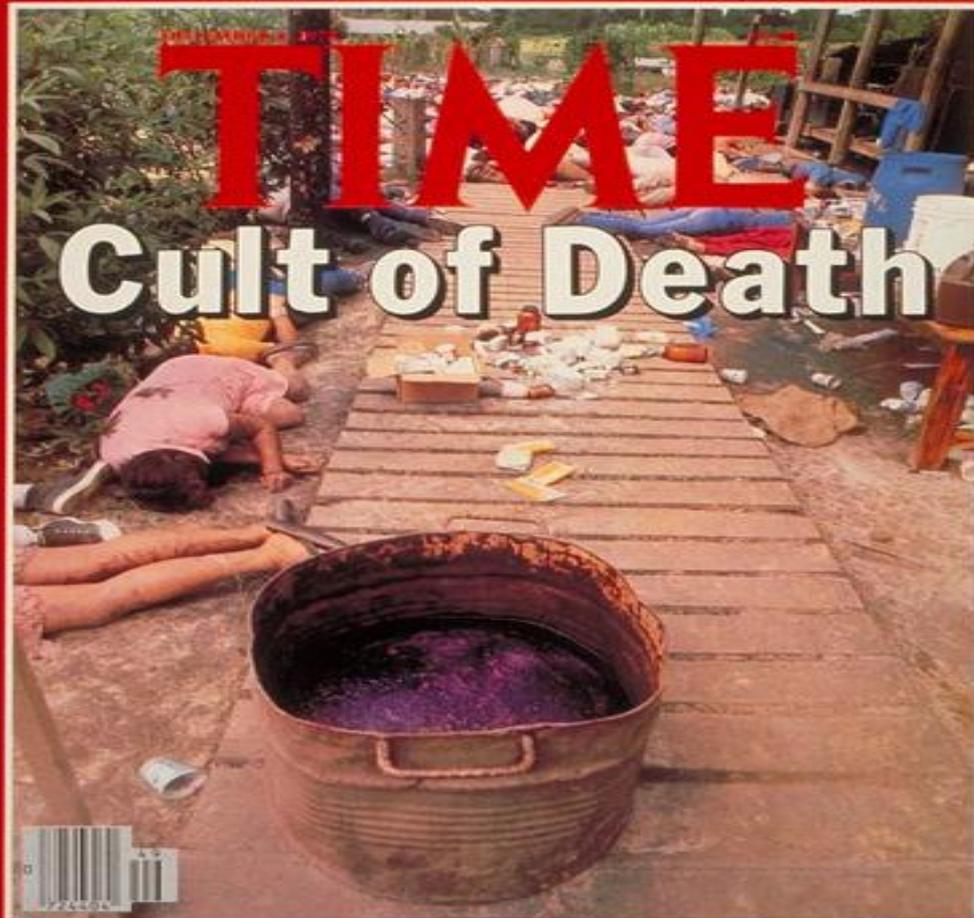


- ◆ do female physicians and prostitutes have high rates of suicide?
- ◆ do suicide rates decrease in times of national crisis and increase when a city's sports team dashes expectations?
- ◆ have societies across history and across culture sanctioned ritual suicide?



How....?

- ◆ to understand mass suicides in cults?





How....?

◆ to understand suicide terrorism?



Tall Order for a Comprehensive Theory of Suicide

- ◆ Not only must the theory illuminate these and other questions, it must also be compatible with these facts:



Facts

- ◆ Suicide rates highest in older people
- ◆ ... and in men (except in China)
- ◆ ... and in Caucasian people in the U.S.
- ◆ Suicide is associated with impulsivity, yet very few die ‘on a whim.’
- ◆ Suicide is more associated with anorexia than with bulimia.



More Facts...

- ◆ Death by suicide is relatively rare – 80 per day die in U.S., compared to 1,900 per day from heart disease.



More Facts...

- ◆ Death by suicide is costly.
 - \$10 billion annually in the U.S. in lost wages alone; \$350,000 per death per year.
 - This does not include other costs: Lawsuits, insurance settlements, investigations, effects on survivors' productivity, etc.

Sketch of the Theory

Those Who
Desire Suicide



Perceived
Burdensomeness

Thwarted
Belongingness

Those Who Are
Capable of Suicide

Serious Attempt or Death by Suicide

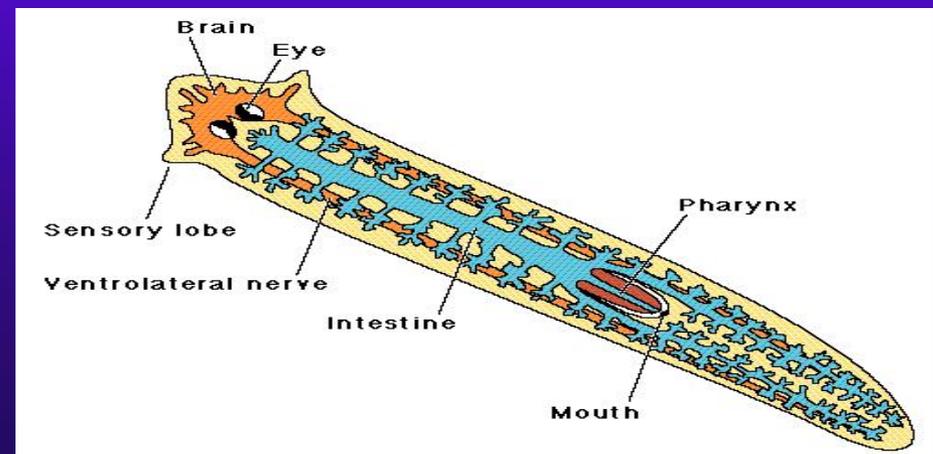
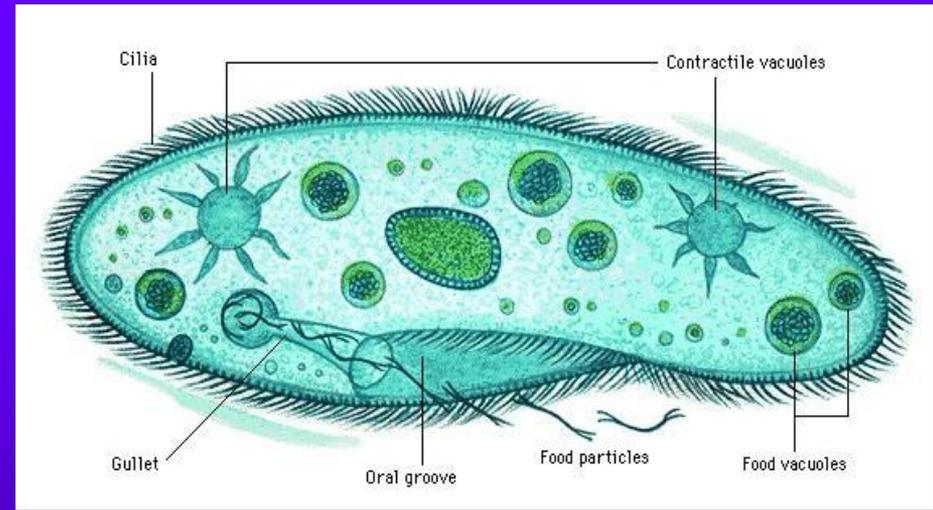


The Acquired Capability to Enact Lethal Self-Injury

- ◆ “It seems rather absurd to say that Cato slew himself through weakness. None but a strong man can surmount the most powerful instinct of nature” – Voltaire.
- ◆ Accrues with repeated and escalating experiences involving pain and provocation, such as
 - Past suicidal behavior, but not only that...
 - Repeated injuries (e.g., childhood physical abuse).
 - Repeated witnessing of pain, violence, or injury (cf. physicians).
 - Any repeated exposure to pain and provocation.

The Acquired Capability to Enact Lethal Self-Injury: Habituation

◆ Habituation:
Response decrement due to repeated stimulation.





The Acquired Capability to Enact Lethal Self-Injury

- ◆ Habituation can occur vicariously (i.e., through observation).
 - “The fact that we have specific emotional reactions to seeing pain inflicted on other people may result from the simple simulation produced [in the cingulate cortex]....



The Acquired Capability to Enact Lethal Self-Injury

- ◆ ...the experience of other people's pain, as handled by the brain's dedicated structures, to some extent overlaps with that of one's own pain.”

-Pascal Boyer, 2001.



The Acquired Capability to Enact Lethal Self-Injury

- ◆ With repeated exposure, one habituates – the “taboo” and prohibited quality of suicidal behavior diminishes, and so may the fear and pain associated with self-harm.
- ◆ Relatedly, opponent-processes may be involved.



The Acquired Capability to Enact Lethal Self-Injury

- ◆ Briefly, opponent process theory (Solomon, 1980) predicts that, with repetition, the effects of a provocative stimulus diminish.... habituation in other words.

BUT....



The Acquired Capability to Enact Lethal Self-Injury

- ◆ Opponent process theory also predicts that, with repetition, the opposite effect, or opponent process, becomes amplified and strengthened.
- ◆ Example of skydiving.



The Acquired Capability to Enact Lethal Self-Injury

- ◆ The opponent process for suicidal people may be that they become more competent and fearless, and may even experience increasing reinforcement, with repeated practice at suicidal behavior.



Empirical Evidence

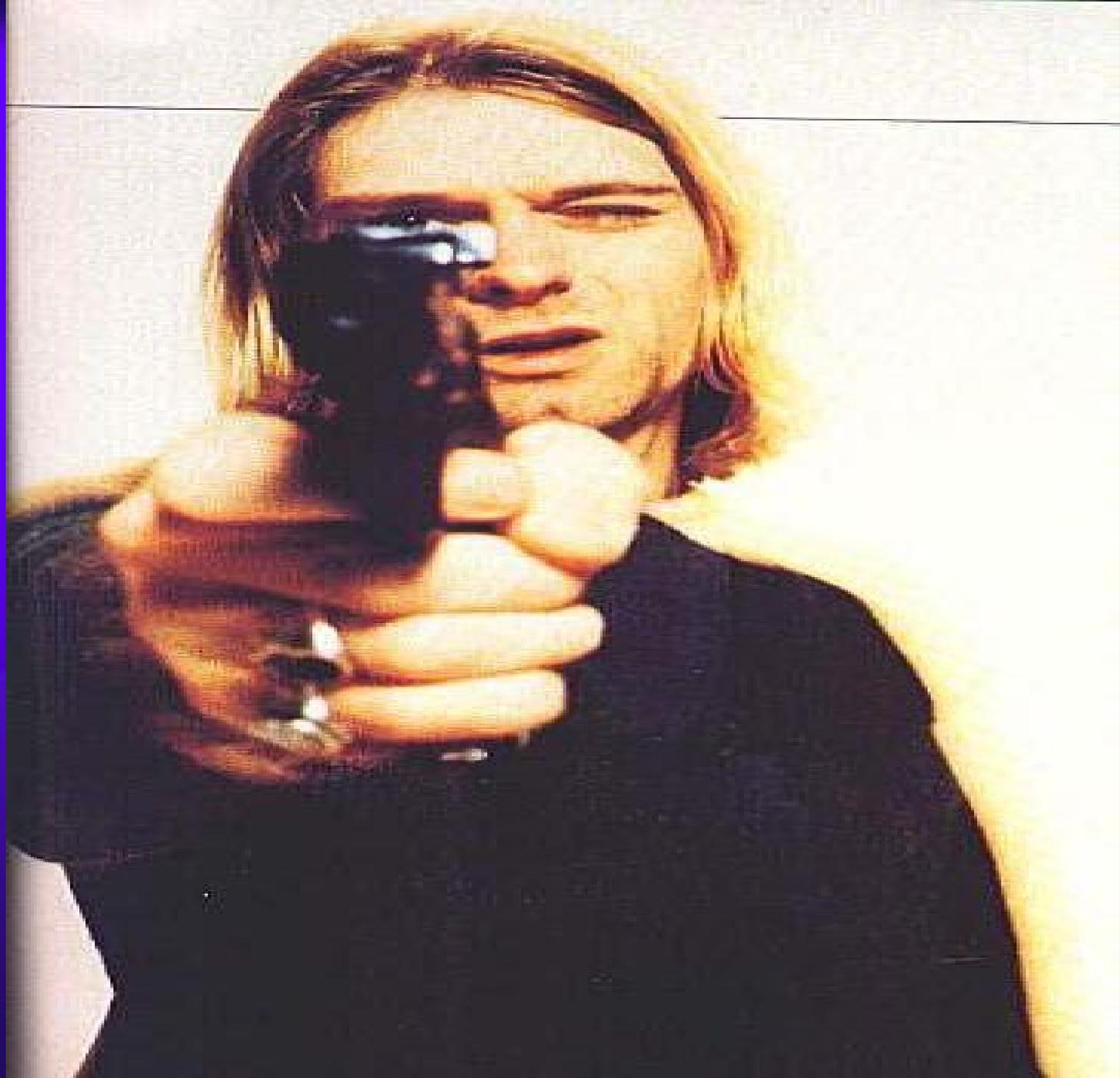
- ◆ Lethality of method and seriousness of intent increase with attempts.
- ◆ People who have experienced or witnessed violence or injury have higher rates of suicide – prostitutes, self-injecting drug abusers, people living in high-crime areas, physicians.
- ◆ Those with a history of suicide attempt have higher pain tolerance than others.



Why I Jumped by Tina Zahn

- ◆ In the midst of a recurrent, very severe (at times near-catatonic) postpartum depression, Zahn decided to jump off a bridge near Green Bay, Wisconsin.
- ◆ She fled relatives in her car, who called police. Police clocked her at 120 mph.
- ◆ Still, she is ambivalent, some signs of which show up in the following video.







Anecdotal Evidence: Cobain

- ◆ Cobain was temperamentally fearful – afraid of needles, afraid of heights, and, crucially, afraid of guns. Through repeated exposure, a person initially afraid of needles, heights, and guns later became a daily self-injecting drug user, someone who climbed and dangled from 30 foot scaling during concerts, and someone who enjoyed shooting guns.



Anecdotal Evidence: Cobain

- ◆ Regarding guns, Cobain initially felt that they were barbaric and wanted nothing to do with them; later he agreed to go with his friend to shoot guns but would not get out of the car; on later excursions, he got out of the car but would not touch the guns; and on still later trips, he agreed to let his friend show him how to aim and fire. He died by self-inflicted gunshot wound in 1994 at the age of 27.



Anecdotal Evidence: Meriwether Lewis (of Lewis & Clark fame)

- ◆ From Stephen Ambrose's biography of Lewis, Undaunted Courage:
 - Lewis paced for several hours (agitation), as others could hear him all night as the floorboards creaked.
 - Two self-inflicted gunshot wounds, neither fatal.
 - Servants found him “busily cutting himself from head to foot.”
 - Lewis said to servants, “I am no coward, but I am strong, it is so hard to die.” He died a few hours later.



Suicide in Anorexia Nervosa

- ◆ Mortality is extremely high in anorexic women (SMR = ~ 60).
- ◆ It is an under-appreciated fact that, should an anorexic patient die prematurely, the cause of death is more likely to be suicide than complications arising from compromised nutritional status.



Suicide in Anorexia Nervosa

- ◆ There are at least two possible accounts of the high association between AN and suicide. In one view, anorexic women die by suicide at high rates because they are unable to survive relatively low lethality attempts and/or they may be less likely to be rescued after an attempt due to their socially isolated status.



Suicide in Anorexia Nervosa

- ◆ In another view, informed by my theory of suicidal behavior, anorexic women die by suicide at high rates because their histories of self-starvation habituate them to pain and inure them to fear of death, and they therefore make high lethality attempts with high intent-to-die.



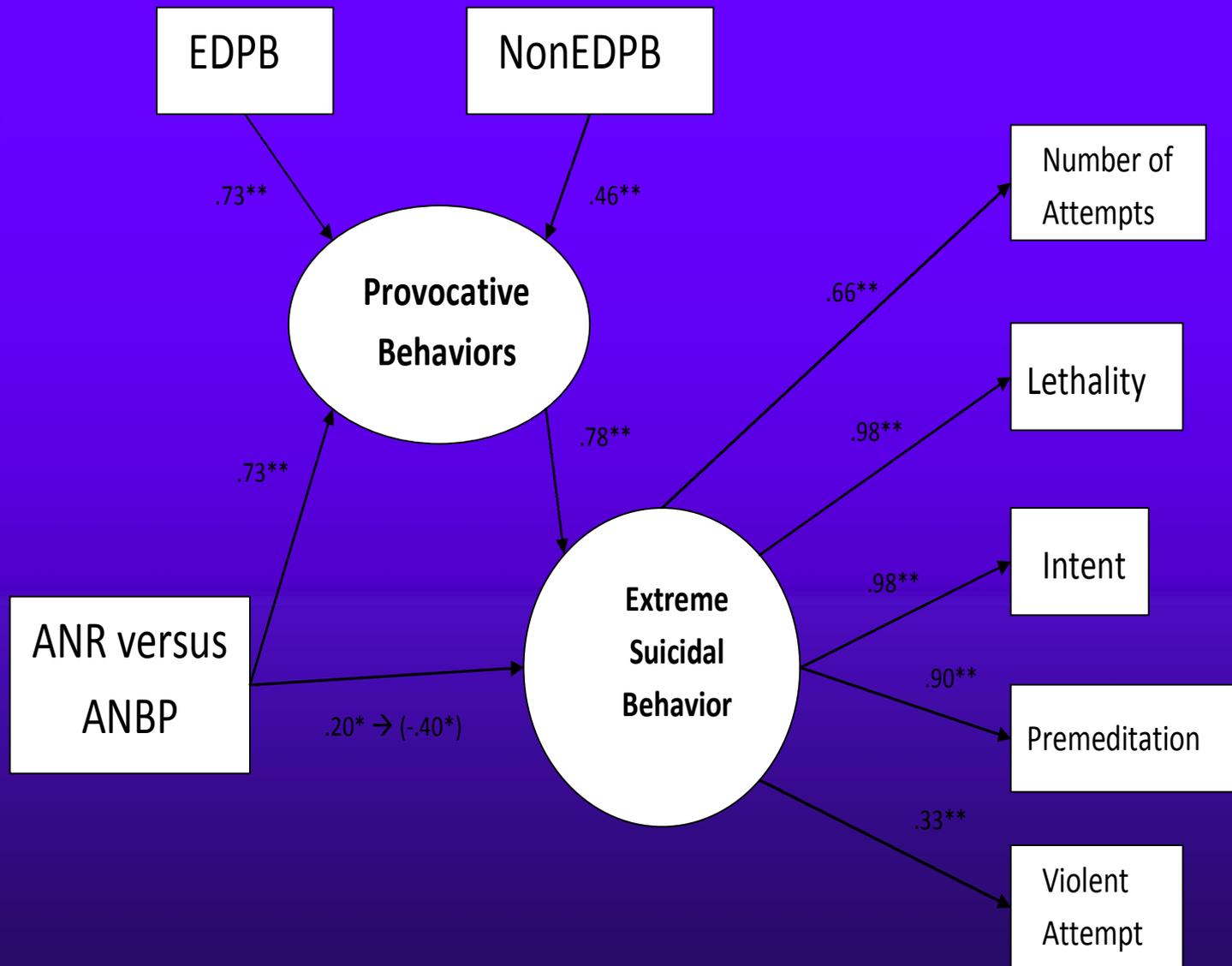
Suicide in Anorexia Nervosa

- ◆ We pitted these two accounts against each other, in a study of 239 women with AN, followed over ~15 years.
- ◆ 9 died by suicide, the leading cause of death among the sample.
- ◆ Of these 9, were they mostly highly lethal methods or not?



Suicide in Anorexia Nervosa

- ◆ The *least* lethal method: Ingestion of 12 oz. of a household cleaning product, along with an unknown amount of a powerful sedative and alcohol (BAC = 0.16%). Cause of death was gastric hemorrhaging due to hydrochloric acid in the cleaning product.
 - Might Bitrix have prevented this?





Those Who Desire Suicide



Those Who Are Capable of Suicide

Serious Attempt or Death by Suicide



Constituents of the Desire for Death

- ◆ Perceived Burdensomeness
- ◆ Thwarted Belongingness



Perceived Burdensomeness

- ◆ Essential calculation:
“My death is worth more than my life to my loved ones/family/society.”



Perceived Burdensomeness: Empirical Evidence

- ◆ Five studies to date have directly tested this view; all support it.
 - For example, we trained raters to evaluate actual suicide notes regarding the following dimensions: perceived burdensomeness; hopelessness; and generalized emotional pain. Unknown to the raters, half of the notes were from people who died by suicide, and half were from people who attempted suicide and survived. The notes from those who died by suicide contained more perceived burdensomeness than notes from attempters; no effects were found regarding hopelessness and emotional pain.

Joiner et al. (2002). Perceived burdensomeness and suicidality: Two studies on the suicide notes of those attempting and those completing suicide. Journal of Social & Clinical Psychology, 21, 531-545

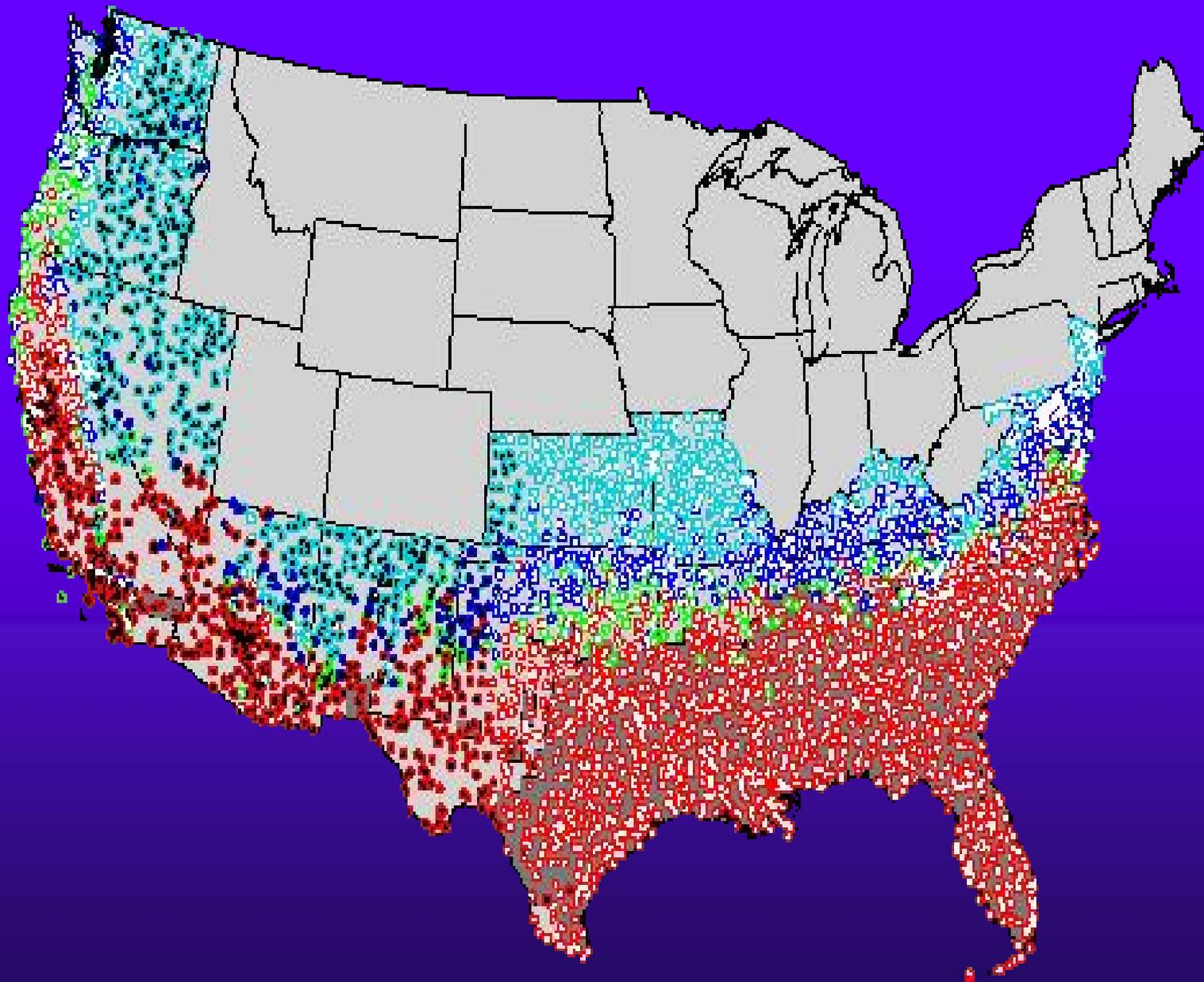
Perceived Burdensomeness: Self-Sacrifice Across Species

- ◆ Fire ants.
- ◆ Pea aphids.
- ◆ Lions.
- ◆ Spiders

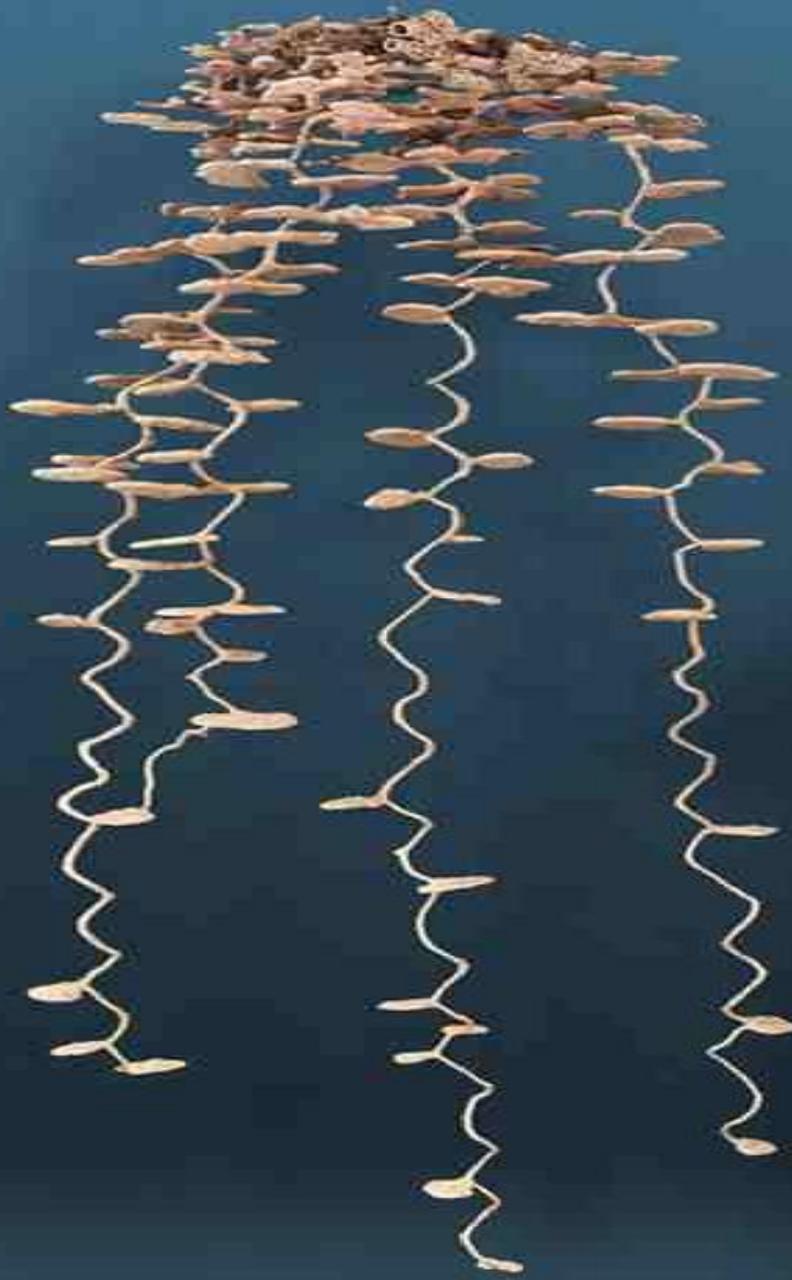
- ◆ even a palm tree.













2 mm





Those Who Desire Suicide



Those Who Are Capable of Suicide

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Thwarted Belongingness: Empirical Evidence

- ◆ Hoyer and Lund (1993) studied nearly a million women in Norway; over the course of a 15-year follow-up, over 1,000 died by suicide. They reported that women with six or more children had one-fifth the risk of death by suicide as compared to other women.

Hoyer, G., & Lund, E. (1993). Suicide among women related to number of children in marriage. Archives of General Psychiatry, 50, 134-137. .

Thwarted Belongingness: Empirical Evidence

- ◆ Twins die by suicide at lower rates than others despite having slightly higher rates of mental disorders.

Tomassini et al. (2003). Risk of suicide in twins: 51 year follow up. British Medical Journal, 327, 373-374 .





Thwarted Belongingness: Empirical Evidence

- ◆ The camaraderie and sense of belongingness from being a fan of sports teams can be considerable, especially under conditions of success...

Thwarted Belongingness: Empirical Evidence

- ◆ ... as many who have lived in university towns can observe for themselves when the university wins a national championship, say, in football, say in 1993 or 1999.





Thwarted Belongingness: Empirical Evidence

- ◆ It is interesting to consider, then, whether teams' success affects suicidality; from the present perspective, it might, in that increased belongingness should be associated with lower suicidality.



Thwarted Belongingness: Empirical Evidence

- ◆ Several studies have documented this association.

Joiner, T., Van Orden, K., & Hollar, D. (2006). On Buckeyes, Gators, the Miracle on Ice, and Super Bowl Sunday: Pulling Together Is Associated With Lower Suicide Rates. Journal of Social & Clinical Psychology.

Fernquist, R.M. (2000). An aggregate analysis of professional sports, suicide, and homicide rates: 30 U.S. metropolitan areas, 1971-1990. Aggression & Violent Behavior, 5, 329-341.

Steels, M.D. (1994). Deliberate self poisoning - Nottingham Forest Football Club and F. A. Cup defeat. Irish Journal of Psychological Medicine, 11, 76-78.

Trovato, F. (1998). The Stanley Cup of Hockey and suicide in Quebec, 1951-1992. Social Forces, 77, 105-126.

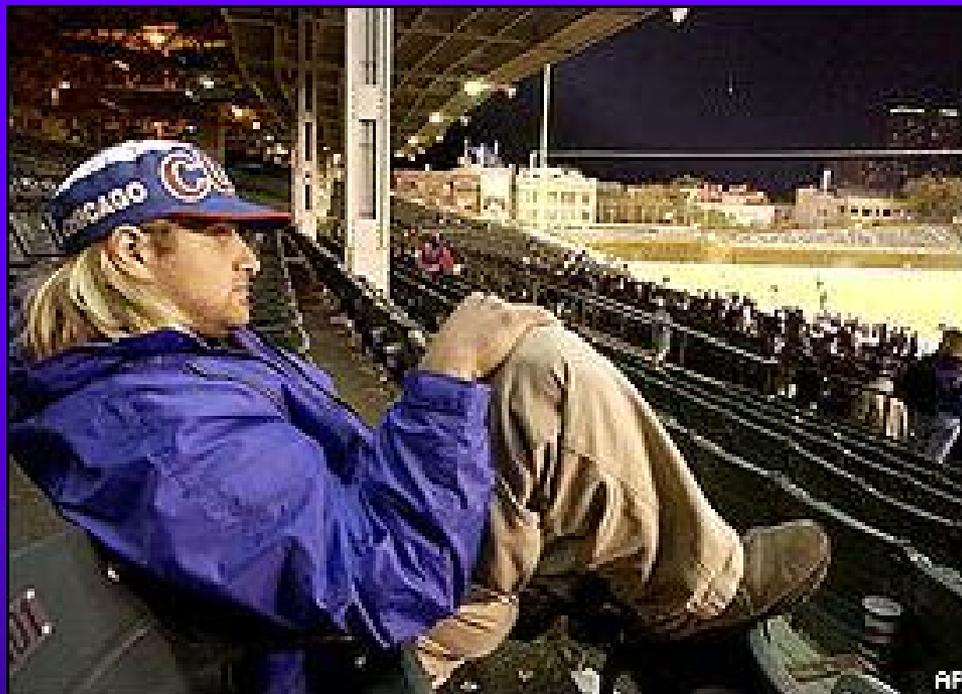
Thwarted Belongingness: Poor Red Sox Fans



Thwarted Belongingness: Poor Red Sox Fans (Well, Until 2004 and 2007)



Thwarted Belongingness: Poor Cubs Fans





◆ Miracle on Ice,
February 22, 1980



Number of Daily Suicides

100
90
80
70
60

1972

Missing

1976

1978

1980

1982

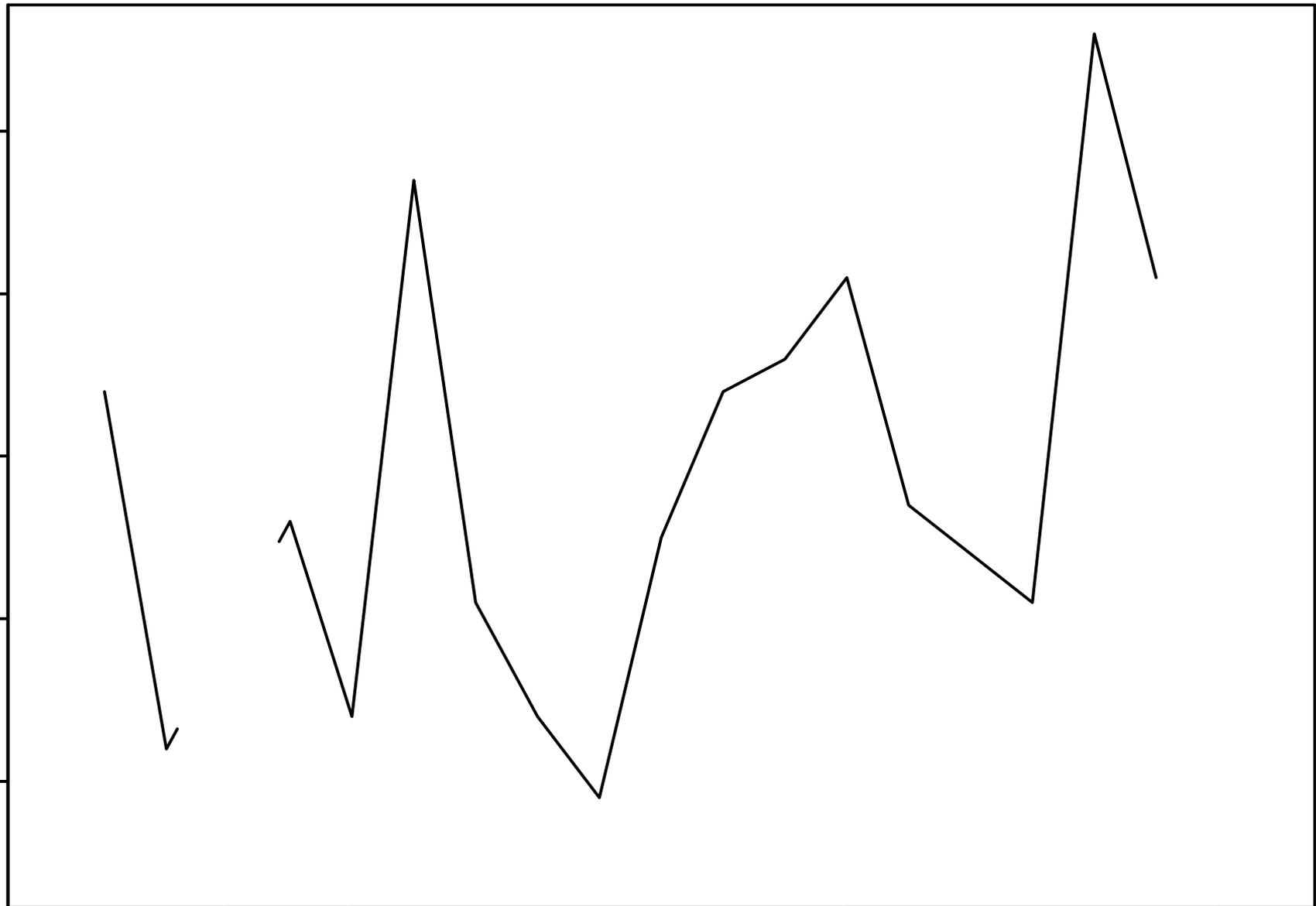
1984

1986

1988

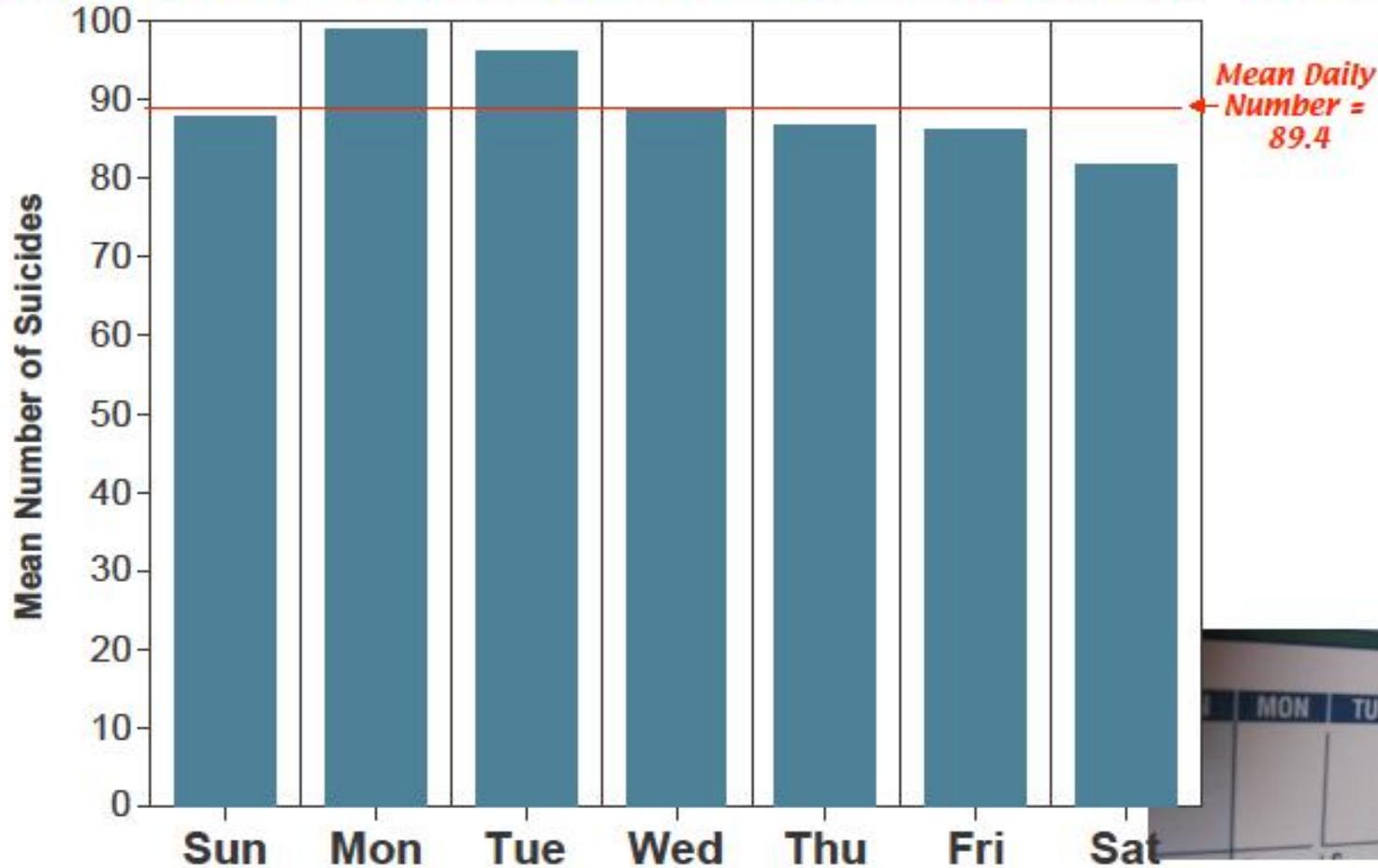
Missing

February 22 (1972-1989)





Suicide Variation by Days of Week

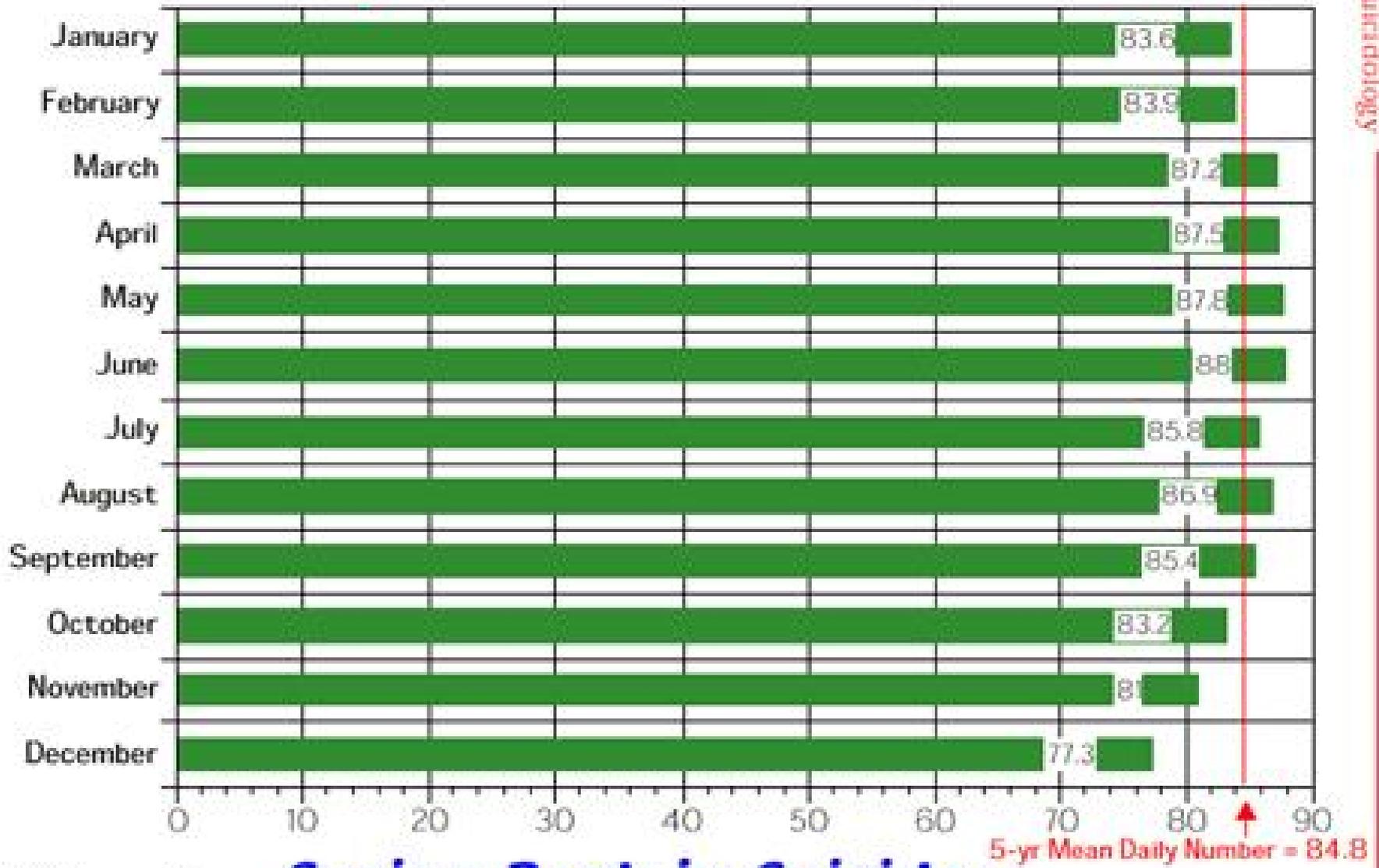


Monday, Tuesday highest; Sunday, Saturday lowest

2005 Data



Monthly Variation in Suicide



1992-96 Average Data

Spring Peak in Suicides



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Those Who
Desire Suicide



Those Who Are
Capable of Suicide

Serious Attempt or Death by
Suicide



Prevention/Treatment Implications

- ◆ The model's logic is that prevention of “acquired ability” OR of “burdensomeness” OR of “thwarted belongingness” will prevent serious suicidality.
- ◆ Belongingness may be the most malleable and most powerful.

NATIONAL

SUI**IDE**
PREVENTION

LIFELINE™

1-800-273-TALK

www.suicidepreventionlifeline.org



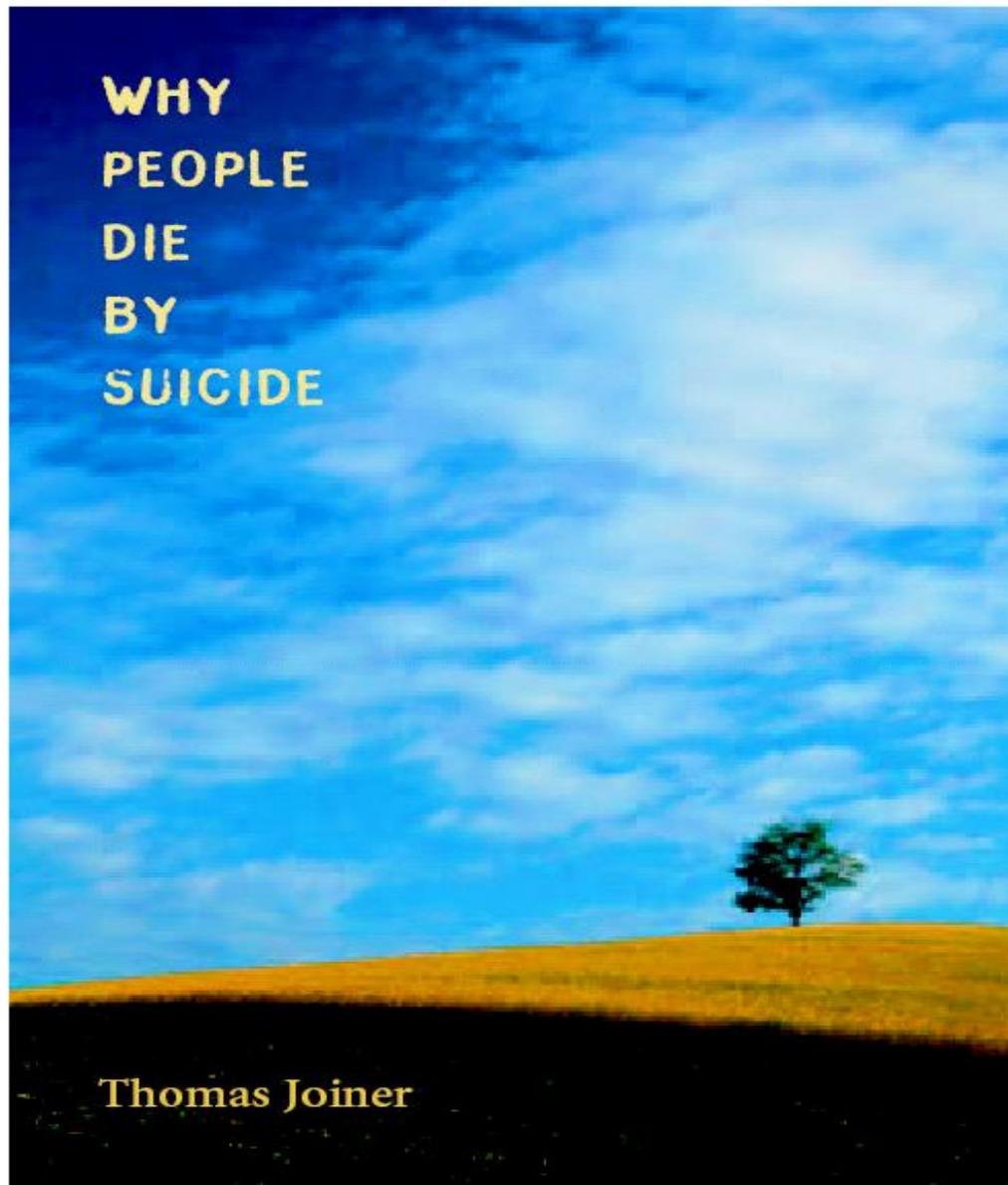
Prevention/Treatment Implications

◆ CBT ->

burdensomeness and
low belonging.



**WHY
PEOPLE
DIE
BY
SUICIDE**



Thomas Joiner

Available at places like [amazon.com](https://www.amazon.com)



The book goes well beyond this talk.

- ◆ 9/11, World Trade Center
- ◆ Suicide in insects and spiders (weird but true)
- ◆ How death merges with life in the minds of suicidal people
- ◆ Lying about suicide
- ◆ Why we scramble to prevent deaths by lightning strike but do less to prevent death by suicide



The book goes well beyond this talk

- ◆ What I told my young sons about how suicide runs in our family
- ◆ The role of serotonin-system genes and other serotonin-system parameters in suicidal behavior
- ◆ Why women with anorexia nervosa and borderline personality disorder are so vulnerable to death by suicide



Thank you for your attention

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