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The Interpersonal Theory of Suicide

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Suicidal behavior is a major problem worldwide and, at the same time, has received relatively little empirical attention. This relative lack of empirical attention may be due in part to a relative absence of theory development regarding suicidal behavior. The current article presents the interpersonal theory of suicidal behavior. We propose that the most dangerous form of suicidal desire is caused by the simultaneous presence of two interpersonal constructs—thwarted belongingness and perceived burdensomeness (and hopelessness about these states)—and further that the capability to engage in suicidal behavior is separate from the desire to engage in suicidal behavior. According to the theory, the capability for suicidal behavior emerges, via habituation and opponent processes, in response to repeated exposure to physically painful and/or fear-inducing experiences. In the current article, the theory's hypotheses are more precisely delineated than in previous presentations (Joiner, 2005), with the aim of inviting scientific inquiry and potential falsification of the theory's hypotheses.

Keywords: suicide, suicidal behavior, burdensomeness, belonging, opponent processes

Approximately one million individuals worldwide died by suicide in 2000, and estimates suggest that 10 to 20 times more individuals attempted suicide (World Health Organization, 2008). Only two interventions have been shown to prevent deaths by suicide (Fleischmann et al., 2008; Motto & Bostrom, 2001), and only one form of psychotherapy has been shown to prevent suicide attempts in more than one clinical trial (Linehan et al., 2006). Why is the state of knowledge for such a devastating psychological phenomenon relatively lacking?

One answer may be that suicidal behavior is difficult to study (for a discussion of this issue, see Prinstein, 2008). First, very large samples are needed because the base rates of suicide attempts and deaths are low in the general population (Moscicki, 2001). Second, individuals with suicidal behaviors are often excluded from clinical trials due to safety concerns on the part of researchers (Rudd, Joiner, & Rajab, 2001). Finally, individuals who die by suicide are not available for psychological assessments, thus limiting methods researchers can use.

Another explanation may lie with the status of theory in the suicide literature. Prinstein (2008) noted,

> few theoretical models have been offered to help understand self-injury in the manner that other manifestations of psychopathology have been examined. In particular, few studies have considered integrative models that address interplay between dynamic systems within the individual and between individuals and their environments. (p. 2)

Thus, another explanation for the relatively low number of empirical advances in understanding the causes and correlates of suicide, as well as methods for suicide prevention, may be the absence of a theory that can comprehensively explain known facts about suicide, as well as reliably and precisely identify risk for future occurrences of suicidal behavior.

Here, we propose the *interpersonal theory of suicide* to explain heretofore unexplained facts about suicide and to increase our understanding of the etiology of suicide. Briefly, according to the theory, the most dangerous form of suicidal desire is caused by the simultaneous presence of two interpersonal constructs—thwarted belongingness and perceived burdensomeness—and further that the capability to engage in suicidal behavior is separate from the desire to engage in suicidal behavior. The model is depicted graphically in Figure 1, with the relatively small area of overlap in the Venn diagram representing the small minority of individuals who possess both desire and capability for suicide. In the current article, the theory's hypotheses are more precisely delineated than in previous presentations (Joiner, 2005), with the aim of inviting

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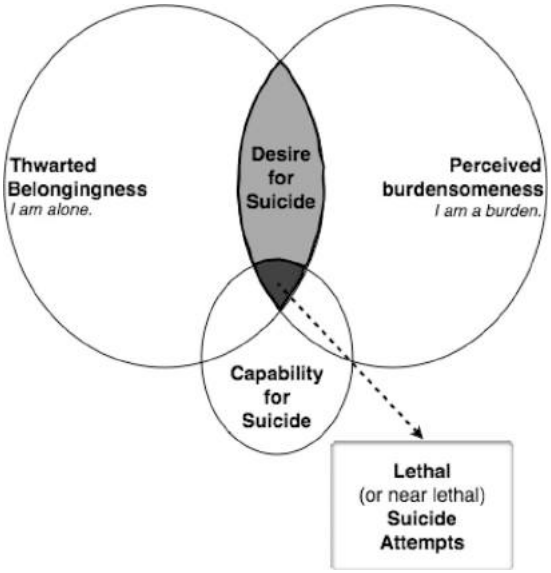


Figure 1. Assumptions of the interpersonal theory of suicide.

scientific inquiry and potential falsification of the theory's hypotheses. We first ground our theory in the context of previous empirical research and theorizing on suicidal behavior. In reviewing and integrating the literature, we reflect on the status of theory regarding suicidal behavior and indicate areas of relative weakness. Next, we describe our interpersonal theory of suicide and indicate how we address (or fail to address) areas of need delineated above. Finally, we close with future directions for theory-based research on suicidal behavior.

Defining Suicidal Behavior

An ongoing task for the field involves refining definitions of key suicide-related constructs to increase precision of measurement and standardize usage of terms across studies (Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007a). Our discussion below draws on—and is consistent with—a recently revised nomenclature (Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007b), which posits that suicide-related behaviors (previously referred to as suicidality) can be classified as ideations (i.e., thoughts), communications, and behaviors. The authors of the nomenclature further posit that all suicide-related behaviors are self-initiated. Further, these behaviors can vary in terms of the presence or absence of intent to die and the presence or absence of physical injury sustained. In the absence of intent to die, the term self-harm is used (e.g., self-cutting in the service of emotion regulation). As the current theory is concerned with ideations, communications, and behaviors that involve some degree of intent to die, we use the term *suicidal behavior* rather than *suicide-related behaviors*. Our primary focus in the current theoretical account is on near-lethal and lethal suicide attempts. The nomenclature states that suicide attempts possess the following qualities: (a) self-initiated, potentially injurious behavior; (b) presence of intent to die; and (c) nonfatal outcome. The term *suicide* is reserved for those cases in which a suicide attempt results in death. As this distinction is potentially confusing, whenever possible, we refer to nonlethal suicide attempts (i.e., suicide attempts with nonfatal outcomes) versus lethal suicide attempts (i.e., suicide attempts with fatal outcomes), with the latter term synonymous with deaths by suicide. The theory defines *serious suicidal behavior* as lethal and near-lethal attempts. Near-lethal attempts are a type of nonlethal suicide attempts (i.e., death does not result) for which the person presumably survived by chance (e.g., individuals do, on occasion, survive jumps from the Golden Gate bridge).

One could argue that a phenomenon is not yet ready to be studied empirically until all definitional issues have been addressed. We take a different stance and believe that theory-driven, empirical research could—and should—be used to inform and define the nomenclature and taxonomy of suicide-related behaviors. The definitional issues reviewed above regarding distinctions among ideations, attempts, and deaths highlight the multidimensional nature of suicide and suicide-related behaviors (Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007a).

The value of theory-driven investigations of the taxonomy of suicidal behavior becomes clear on consideration of the prevalence of suicidal behavior. Arguably the most difficult aspect of the prediction of suicidal behavior is the finding replicated worldwide and over time: Only a small subset of those who think about suicide will go on to attempt, and even fewer will die by suicide (World Health Organization, 1998). Both suicidal ideation and nonlethal attempts are vastly more common than lethal attempts. As described in more detail below, current theories of suicidal behavior are inconsistent with this striking aspect of the phenomenon of suicidal behavior and instead address the phenomenology of suicidal behavior broadly, as a unitary construct. Without clearly differentiating among thoughts about suicide, nonfatal suicidal behaviors, and fatal suicidal behaviors, current theories are inconsistent with the taxonomy of suicidal behavior. This results in a number of theories being overly sensitive in the prediction of suicidal behavior at a severe cost in specificity (see Empirical and Theoretical Foundations section below).

In defining a phenomenon, the boundaries of the construct must also be considered—what is, and what is not, suicidal behavior? Our theory is primarily concerned with what might be termed the prototype of suicide-related behaviors—near-lethal and lethal suicide attempts. At the same time, our theory assumes that a core set of processes and conditions underlie near-lethal and lethal suicide attempts and that these processes are operative, to varying degrees, in other suicide-related behaviors on the periphery of the construct. The extent to which our assumption of core processes in suicidal behavior is supported may help delineate the boundaries of suicidal behavior, thus indicating a role for theory in clarifying definitions and taxonomies.

Empirical and Theoretical Foundations

Risk factors are variables that are associated with an increased probability that an outcome will occur, whereas causal processes explain an outcome. However, when a risk factor is shown to temporally precede the outcome and is shown to be nonspurious, a causal relation may be present (Wagner, 1997). In addition, risk factors can be conceptualized as indicators of underlying causal processes that lead to outcomes (Cicchetti & Cohen, 1995); in this way, examining risk factors can be viewed as a stepping-stone to the construction of etiological models. Finally, a useful theory of

suicide must be consistent with—and able to account for—empirically documented risk factors for suicide.

In the section that follows, we examine the literature on risk factors for suicidal behavior and follow it with a discussion of theoretical perspectives. As practicalities limit the inclusion of all variables associated with suicidal behavior, we limit our discussion to those risk factors shown to be associated with increased risk for lethal suicidal behavior, as this is the primary outcome of the theory. Table 1 lists these risk factors, grouped by the degree of support that has been found for the association between each factor and lethal suicidal behavior (i.e., number of studies documenting such an association). The literature indicates the most consistent and robust support for the following as risk factors for suicide: mental disorder, past suicide attempts, social isolation, family conflict, unemployment, and physical illness. However, the literature also indicates the presence of other risk factors for suicide, which are also listed in Table 1. Some of these risk factors with less empirical support may in fact be robust predictors of suicide but have not yet been studied as frequently as other risk factors (e.g., there is consensus in the field that hopelessness is an important predictor of suicide), thus we discuss these risk factors as well, but in relatively less depth.

Family Conflict

Indices of family conflict are robust risk factors for lethal suicidal behavior across the lifespan, with studies listed in Table 1 documenting associations among suicide and familial discord, domestic violence, familial stress, and perceptions that one is a burden on one's family.

Mental Disorders

The vast majority of people who die by suicide (i.e., approximately 95%) suffer from mental disorders (Cavanagh, Carson, Sharpe, & Lawrie, 2003)—and it is quite possible that the remaining 5% suffer from subclinical variants of mental disorders or presentations of disorders not detected by methodologies such as psychological autopsies (Ernst et al., 2004). In addition, certain mental disorders confer higher risk for suicidal behavior than others. The studies listed in Table 1 indicate that the following disorders are associated with particularly elevated rates of suicide: major depressive disorder, with suicide rates between 2% and 6% (Bostwick & Pankratz, 2000); bipolar disorder, with estimates suggesting a 15-fold increased risk for suicide (Harris & Barraclough, 1997); borderline personality disorder, with suicide rates between 4% and 5% (Duberstein & Witte, 2008); anorexia nervosa (AN), with a suicide rate 58 times that which was expected (Herzog et al., 2000); schizophrenia, with suicide rates between 1.8% and 5.6% (Palmer, Pankratz, & Bostwick, 2005); substance abuse, with a suicide rate 5.7 times that of the general population (Harris & Barraclough, 1997); and conduct disorder in youth, with a sixfold increase in risk for suicide, compared with community controls.

However, the studies listed in Table 1 also indicate that the vast majority of individuals diagnosed with the above disorders do not die by suicide. For example, among depressed individuals, approximately one quarter make a nonfatal suicide attempt during their lifetime (Verona, Sachs-Ericsson, & Joiner, 2004), and at least 25% report having experienced suicidal ideation in the past 2 weeks (Goldney, Dal Grande, Fisher, & Wilson, 2003). Further, although depression greatly increases risk for suicidal ideation, it does not increase risk for suicide attempts above and beyond its association with ideation (Nock, Hwang, Sampson, Kessler, Angermeyer, et al., 2009). Disorders with anxiety and agitation as characteristic symptoms (i.e., generalized anxiety disorder, social phobia, posttraumatic stress disorder, bipolar disorder) or impulse-control deficits as characteristic symptoms (i.e., conduct disorder, intermittent explosive disorder, substance use disorders) are predictive of the transition from suicidal ideation to nonlethal suicide attempts (Nock, Hwang, Sampson, & Kessler, 2009). These data indicate that depression is likely associated with the development of desire for suicide, whereas other disorders, marked by agitation or impulse control deficits, are associated with increased likelihood of acting on suicidal thoughts.

Previous Suicide Attempt(s)

The studies listed in Table 1 indicate that one of the most reliable and potent predictors of future suicidal ideation, attempts, and death by suicide across the lifespan is having a prior history of this type of behavior. The presence of multiple past attempts is an especially strong predictor of lethal suicidal behavior in both adolescents (Kotila & Lönnqvist, 1987) and adults (Christiansen & Jensen, 2007; Haw, Bergen, Casey, & Hawton, 2007; Suominen, Isometsa, Haukka, & Lönnqvist, 2004; Zonda, 2006), as is a previous attempt with high medical lethality (S. J. Gibb, Beautrais, & Fergusson, 2005). A 37-year longitudinal study indicated that the elevation in risk for lethal suicidal behavior conferred by a history of a previous attempt persists over the lifetime (Suominen, Isometsa, Suokas, et al., 2004).

Physical Illness

A review by Whitlock (1986) demonstrated that more than one third of people who die by suicide had a medical illness at the time of their death, and numerous studies (listed in Table 1) have documented a relation between the presence of physical illness and suicide. However, the majority of medical illnesses do not appear to actually increase risk for suicide, including rheumatoid arthritis, diabetes, and hypertension (Harris & Barraclough, 1997; Stenager & Stenager, 1992). One disease with a particularly high risk for suicide is HIV–AIDS, which has been shown to confer approximately a sevenfold risk for suicide as compared with the general population (Conwell, 1994; Harris & Barraclough, 1997). Another illness that appears to confer suicide risk is brain cancer, which has a ninefold increased risk for suicide as compared with the general population and a fourfold risk as compared with individuals with other forms of cancer (Harris & Barraclough, 1997). Finally, amyotrophic lateral sclerosis has an estimated sixfold increased risk (Fang et al., 2008), and multiple sclerosis has a twofold risk (Harris & Barraclough, 1997).

The relationship between physical illness and suicide is likely indirect and accounted for by a multitude of other risk factors, including comorbid mental disorders (O'Mahony, Goulet et al., 2005; Rasic, Belik, Bolton, Chochinov, & Sareen, 2008), functional limitations (R. D. Goodwin, Marusic, & Hoven, 2003; Kaplan, McFarland, Huguet, & Newsom, 2007), and social isola-

Table 1
Empirically Demonstrated Risk Factors for Suicide

Risk factor	Studies demonstrating associations
	>15 studies
Mental disorders	Brent et al. (1993); Goodwin & Jamison (2007); Harris & Barraclough (1997); Hawton et al. (2005); Moskos et al. (2005); Nock, Hwang, Sampson & Kessler (2009); Nock, Hwang, Sampson, Kessler, Angermeyer et al. (2009); Shaffer et al. (1996); Wilcox et al. (2004). (Includes meta-analysis)
Previous suicide attempts	Beautrais (2002); Brent et al. (1999); Christiansen & Jensen (2007); Conwell et al. (2000); Coryell & Young (2005); Fawcett et al. (1990); Gibb et al. (2005); Haste et al. (1998); Haw et al. (2007); Hoffmann & Modestin (1987); Jokinen et al. (2007); Kotila & Lonnqvist (1987); Kullgren (1988); Li et al. (2008); Limosin et al. (2007); Maser et al. (2002); Nordstrom et al. (1995); Owens et al. (2003); Phillips et al. (2002); Pompili et al. (2009); Renaud et al. (1999); Shaffer et al. (1996); Shafii et al. (1985); Suominen, Isometsas, Suokas, et al. (2004); Tidemalm et al. (2005); Tsai et al. (2002); Yim et al. (2004); Zonda (2006).
Social isolation	Appleby et al. (1999); Beautrais (2002); Brent, Johnson et al. (1994); Cantor & Slater (1995); Conner et al. (1999); Conwell et al. (1990); Dervic et al. (2008); Duberstein, Conwell, Conner, Eberly, Evinger, & Caine (2004); Durkheim (1897); Fazel et al. (2008); Fleischmann, et al. (2008); Gove & Hughes (1980); Groholt et al. (1998); Heikkinen et al. (1994); Hoyer & Lund (1993); Koivumaa-Honkanen et al. (2001); Kposowa (2000); Maris (1969); Miller (1978); Motto & Bostrom (2001); Murphy et al. (1992); Nickel et al. (2006); Obafunwa & Busuttil (1994); Pokorny (1983); Qin & Nordentoft (2005); Rubenowitz et al. (2001); Sainsbury (1955); Shafii et al. (1985); Sourander et al. (2009); Stack (1990); Thoresen et al. (2006); Turvey et al. (2002); Waern et al. (2003); Wyder et al. (2009).
Physical illness	Bagley et al. (1976); Bastia & Kar (2009); Blackmore et al. (2008); Chynoweth et al. (1980); Conner et al. (1999); Conwell et al. (1990); Fang et al. (2008); Harris & Barraclough (1997); Harwood et al. (2006); Heikkinen & Lönnqvist (1995); Hem et al. (2004); Hunt et al. (2009); Kaplan, McFarland, et al. (2007); Llorente et al. (2005); Marshall et al. (1983); Miller et al. (2008); Obafunwa & Busuttil (1994); Quan & Arboleda-Florez (1999); Rubenowitz et al. (2001); Timonen et al. (2002); Walker et al. (2008).
Unemployment	Abe et al. (2004); Bastia & Kar (2009); Breault (1986); Brown et al. (2000); Conner et al. (1999); Faupel et al. (1987); Gruenewald et al. (1995); Gururaj et al. (2004); Heikkinen & Lönnqvist (1995); Hutchinson & Simeon (1997); Inoue et al. (2007); Kreitman & Platt (1984); Platt (1992); Preti & Miotto (1999); Schony & Grausgruber (1987); Sholders (1981); Waern et al. (2003); Yim et al. (2004).
Family conflict	Bastia & Kar (2009); Brent, Baugher, Bridge, Chen, & Chiappetta (1999); Brent, Johnson, et al. (1994); Brent, Perper, Moritz, Liotus, Schweers, Balach, et al. (1994); Duberstein, Conwell, Conner, Eberly, & Caine (2004); Filiberti, et al. (2001); Foster (2003); Gould, Fisher, Parides, Flory, & Shaffer (1996); Gururaj, Isaac, Subbakrishna, & Ranjani (2004); Hawton, Fagg, & Simkin (1996); Heikkinen, Aro, & Lönnqvist (1994); Heikkinen & Lönnqvist (1995); Joiner, et al. (2002); Leighton & Hughes (1955); Motto & Bostrom (1990); Rubenowitz, Waern, Wilhelmson, & Allebeck (2001); Samaraweera, Sumathipala, Siribaddana, Sivayogan, & Bhugra (2008); Waern, Rubenowitz, & Wilhelmson (2003).
	6–15 studies
Family history of suicide	Agerbo et al. (2002); Kim et al. (2005); McGirr et al. (2006); Qin et al. (2002); Roy & Segal (2001); Roy et al. (1991); Rubenowitz et al. (2001); Runeson & Asberg (2003); Shafii et al. (1985); Tsai et al. (2002).
Impulsivity	Brent, Johnson, et al. (1994); Dumais et al. (2005); Maser et al. (2002); McGirr, Paris, Lesage, Renaud, & Turecki (2007); McGirr et al. (2008); Renaud et al. (2008); Zouk et al. (2006).
Incarceration	Binswanger et al. (2007); Dooley (1990); DuRand et al. (1995); Fazel et al. (2008); Fruehwald et al. (2000); Hayes (1989); Kariminia et al. (2007).
Hopelessness	Abramson et al. (1989); Beck, Brown, & Steer (1989); Beck, Steer, & Trexler (1989); Brown et al. (2000); Huth-Bocks et al. (2007); McMillan et al. (2007); Nock & Kazdin (2002); Smith et al. (2006); Suominen, Isometsa, Ostamo, & Lönnqvist (2004); Wagner et al. (2000); Wen-Hung et al. (2004).
Seasonal variation	Ajdacic-Gross et al. (2003); Chew & McCleary (1995); Christodoulou et al. (2009); Fossey & Shapiro (1992); Preti & Miotto (2001); Rocchi & Perlini (2002); Yip et al. (2000).
Serotonergic dysfunction	Anisman et al. (2008); Arango et al. (1995); Arranz et al. (1994); Bach-Mizrachi et al. (2008); Cheetham et al. (1989); Cui et al. (2008); Fudalej et al. (2009); Gibb et al. (2006); Hrdina et al. (1993); Lopez de Lara et al. (2006); Mann et al. (2000); Mann et al. (1986); Pandey et al. (2002); Rosel et al. (2000); Zill et al. (2004).
	5 or fewer studies
Agitation or sleep	Barraclough & Pallis (1975); Farberow & MacKinnon (1974); Fawcett et al. (1990); Goldstein et al. (2008); Pompili et al. (2009).
Childhood abuse	Beautrais (2001); Brent et al. (1999); Brent, Perper, et al. (1994); Plunkett et al. (2001); Renaud et al. (1999).

(*table continues*)

Table 1 (*continued*)

Risk factor	Studies demonstrating associations
Exposure to suicide	Exeter & Boyle (2007); Insel & Gould (2008); McKenzie et al. (2005).
Homelessness	Babidge et al. (2001); Barak, Cohen, & Aizenberg (2004); Bickley et al. (2006); Haw et al. (2006)
Combat exposure	Adams et al. (1998); Bullman & Kang (1996); Kang & Bullman (2008).
[Low] Openness to experience	Duberstein (2001); Duberstein et al. (1994).
Pulling together	Biller (1977); Joiner et al. (2006); Salib (2003). (Protective effect)
Self-esteem, shame	Brevard et al. (1990); Chatard et al. (2009); Foster (2003); Pompili et al. (2009).

tion (Carrico et al., 2007; Flavin, Franklin, & Frances, 1986; Rasic et al., 2008). As one example, among patients with end-stage cancer, the will to live was negatively associated with patients' apperceptions of burdensomeness on others and was positively associated with perceived social support (Chochinov et al., 2005).

Social Isolation

Social isolation is arguably the strongest and most reliable predictor of suicidal ideation, attempts, and lethal suicidal behavior among samples varying in age, nationality, and clinical severity (Conwell, 1997; Dervic, Brent, & Oquendo, 2008; Joiner & Van Orden, 2008; Trout, 1980). Numerous empirical studies (listed in Table 1) have demonstrated associations between lethal suicidal behavior and various facets of social isolation, including loneliness, social withdrawal, living alone and having few social supports, living in nonintact families, losing a spouse through death or divorce, and residing in a single prison cell. In contrast, marriage, children, and a greater number of friends and/or family are associated with decreased risk for lethal suicidal behavior.

Unemployment

Numerous studies (listed in Table 1) have demonstrated that unemployment is a common factor among individuals who have died by suicide and is associated with elevated risk for lethal suicidal behavior. However, several studies examining associations between unemployment and suicide rates at the population level have failed to show an association, whereas studies examining smaller, more homogeneous populations (that also tend to be higher risk samples) tend to show an association (Lester & Yang, 2003; Stack, 2000). This pattern of findings indicates that many individuals who die by suicide are unemployed and that the vast majority of unemployed individuals do not die by suicide. Thus, it may be that unemployment is associated with elevated risk only among vulnerable individuals or only when it results in certain negative outcomes. Similarly, economic recessions are associated with increased suicide rates, but only those recessions with marked elevations in negative outcomes such as job losses and home foreclosures (American Association of Suicidology, 2009).

Other Risk Factors

Several warning signs for suicide (i.e., signs of acute risk) have empirically demonstrated associations with lethal suicidal behavior—agitation, hopelessness, and sleep disturbances including nightmares (see Table 1 for references). Consistent and robust support has been found for hopelessness and sleep disturbances. Less research has been conducted on agitation, but available data indicate that agitation is a pernicious sign of elevated risk. Several severely stressful life events are associated with elevated risk for lethal suicidal attempts: studies listed in Table 1 indicate that individuals who have experienced childhood abuse, military combat, homelessness, and incarceration are at elevated risk for lethal suicidal behavior. The studies listed in Table 1 also include several psychiatric and medical history variables that are associated with elevated risk for lethal suicidal behavior. Finally, the literature also indicates the presence of environmental factors that are associated with elevated risk for suicide, including easy access to lethal means, clustering or exposure to suicidal behavior, and seasonal variation in rates of suicidal behavior, as well as increases in connectedness through pulling together effects that are protective against suicide.

Theoretical Perspectives

Although much research on suicidal behavior has been conducted in an atheoretical context, theories of suicide spanning diverse perspectives—including biological, psychodynamic, cognitive–behavioral, and developmental and systems etiologies—have been proposed. In biological theories, it is proposed that suicidal behavior results from the dual presence of a biologically based diathesis (such as dysregulation of the serotonergic system in the ventromedial prefrontal cortex) and an activating psychosocial stressor (Mann, 2003; Plutchik, Van Praag, & Conte, 1989; van Pragg, 2001). In psychodynamic theories, it is proposed that suicide is caused by unconscious drives (Menninger, 1938), intense affective states (Hendin, 1991), desire for escape from psychological pain (Baumeister, 1990; Shneidman, 1998), existential drives for meaning (Rogers, 2001), and disturbed attachment (Bowlby, 1973). Cognitive–behavioral theories posit causal roles for hopelessness (Beck, Brown, Berchick, Stewart, & Steer, 1990; Beck, Steer, Kovacs, & Garrison, 1985), the suicidal cognitive mode (Beck, 1996; Rudd, Joiner, & Rajab, 2001), autobiographical memory deficits and perceptions of entrapment (Williams, 2001; Williams, Van der Does, Barnhofer, Crane, & Segal, 2008), and emotion dysregulation (Linehan, 1993). Developmental/systems theories posit causal roles for disturbed social forces (Durkheim, 1897) and family systems (Richman, 1986; Sabbath, 1969).

Each of these theories is able to explain part of the landscape of suicidal behavior. For example, theories on hopelessness are readily able to account for the relationship between hopelessness and later death by suicide, biological theories are able to explain the association between serotonergic functioning and suicide, and family systems theories are able to explain the association between family conflict and suicide. However, individuals who die by suicide present with numerous risk factors, rather than a single risk factor in isolation (Maris, Berman, & Maltsberger, 1992). Thus, theories of suicide should be able to account for the diverse array of factors associated with lethal suicidal behavior. Our review of risk factors indicates the most robust support for associations with suicide and mental disorders, previous suicide attempts, social isolation, family conflict, unemployment, and physical illnesses. Thus, a theory of suicide should illuminate how these diverse factors are related to suicidal behavior.

Theories must also be able to account for the imprecision of the risk factors listed above—each risk factor in isolation is limited as a predictor of suicide, and each risk factor has complex relations with suicidal behavior. To take a couple of prominent examples, a history of past attempts (see references in Table 1), especially multiple past attempts (Christiansen & Jensen, 2007; Haw et al., 2007; Kotila & Lönnqvist, 1987; Suominen, Isometsa, Haukka, & Lönnqvist, 2004; Zonda, 2006), is a robust predictor of death by suicide, yet many individuals who die by suicide do so on their first attempt (i.e., up to half; Rudd, Joiner, & Rajab, 1996). The vast majority of those who die by suicide suffer from mental disorders (Cavanagh et al., 2003); however, the vast majority of those with mental disorders, including disorders with the highest suicide rates, will not attempt or die by suicide, though many will think about suicide (Bostwick & Pankratz, 2000; Hawton, Sutton, Haw, Sinclair, & Harriss, 2005; Herzog et al., 2000; Palmer et al., 2005).

A comprehensive theory of suicidal behavior must also be able to account for other demographic differences in suicide rates, including that suicide rates vary by gender, age, and culture. One of the most consistent findings with regards to the epidemiology of suicidal behavior is its gender distribution. With the exception of China, male suicides outnumber female suicides in every nation, worldwide (World Health Organization, 2003). In the United States, the ratio of male to female deaths by suicide is 4 to 1, whereas for nonlethal attempts, female attempts outnumber male attempts at a 3 to 1 ratio (American Association of Suicidology, 2006). Nonlethal suicide attempts greatly outnumber lethal attempts (at a ratio of 25 to 1), which means that every day, far more women and girls than men and boys are engaging in (ultimately nonlethal) suicidal behavior. These data indicate that although women die by suicide at much lower rates than do men, it is more common for women to desire and thus attempt suicide. Suicide rates also vary by age, with the highest suicide rate (in the United States) among the elderly (Gould, Shaffer, & Greenberg, 2003). However, suicidal behavior does occur in children: In 2003, 250 children between the ages of 5 years and 14 years died by suicide (Hoyert, Heron, Murphy, & Hsiang-Ching, 2006). Suicide rates have also been found to differ by race and ethnicity. In the United States, European Americans die by suicide approximately twice as often as members of other minority groups, with the exception of Native Americans (American Association of Suicidology, 2006). Suicide rates also vary by occupation, with, for instance, female physicians having a particularly elevated rate compared with the general population (Lindeman, Laara, Hakko, & Lönnqvist, 1996).

Finally, the observation about suicidal behavior that is arguably the most difficult to grapple with theoretically is the fact that only a small subset of those who think about suicide go on to attempt it, and even fewer will die by suicide (World Health Organization, 2008). Estimates from nationally representative studies indicate that each year, 3.3% of Americans seriously consider suicide (i.e., active suicidal ideation), 1.0% develop a plan for suicide, and 0.6% attempt suicide (Kessler, Berglund, Borges, Nock, & Wang, 2005). Yet, each year, only 0.01% of Americans die by suicide (American Association of Suicidology, 2006). It is this observation about suicide that underlies many of the limitations of the risk factors listed above. At a minimum, theories of suicide must be able to account for these data on the epidemiology of suicidal behavior and those factors shown to be associated with elevated risk for suicide. Optimally, theories could build on this empirical foundation by delineating putative etiological connections among risk factors and the outcome of interest, suicidal behavior.

Several comprehensive models of suicide have been presented that can account for several risk factors simultaneously, as well as the prevalence of suicidal behavior. These models are structured to describe (i.e., model) suicidal behavior, compared with theories that are structured to explain (i.e., predict) suicidal behavior. Blumenthal and Kupfer (1986) propose that suicidal behavior results from the joint presence of risk across five domains: biology, psychosocial life events and chronic medical illness, personality traits, family history and genetics, and psychiatric disorder. This model can be graphically depicted as a Venn diagram with five overlapping circles, with the greatest risk for suicide represented by the area of overlap from all five circles. Maris (1991, 2002) proposes a comprehensive model of suicidal behavior from a developmental (or life-course) perspective that emphasizes the study of multiple interacting factors within life histories of individuals who die by suicide, which he denotes as *suicidal careers*. The interaction of factors across several domains of risk (including time) allows these models to account for differential prevalence of suicide ideation, nonlethal attempts, and deaths by suicide, with the assumption that deaths by suicide occur at the intersection of numerous facets of risk, that nonlethal attempts occur with fewer facets of risk, and that ideation occurs with even fewer.

However, although the models described above are comprehensive and thereby able to account for the prevalence of suicidal behavior, they are not structured with a degree of precision that would allow for the falsification of the model and the prediction of suicidal behavior. Thus, what is needed to improve prediction of suicidal behavior is a theory that is both precise—allowing scientific falsifiability and clinical usefulness—and comprehensive—allowing the theory to account for both suicidal ideation and suicide attempts. Shneidman's (1998) psychache theory involves the proposals that the simultaneous presence of three factors is necessary for lethal suicidal behavior to occur—psychache, press, and perturbation—and that the presence of these factors will create the strongest, and most lethal, level of desire for suicide. It is this assumption about suicidal behavior—that individuals who think about suicide versus those who attempt suicide differ in terms of how much they desire suicide—that is challenged by the interpersonal theory of suicide. It is this level of empirical precision and

opposing hypotheses open to falsification that is needed to advance the scientific study of suicidal behavior.

Constructs of the Interpersonal Theory of Suicide

The foundation of the interpersonal theory, as discussed above, is the assumption that people die by suicide because they can and because they want to (Figure 1). Within the framework of our theory, three constructs are central to suicidal behavior, two primarily related to suicidal desire—thwarted belongingness and perceived burdensomeness—and one primarily related to capability—acquired capability for suicide. The theory also includes a specification of the relations between these constructs in the form of four hypotheses (listed in Table 2) and thereby includes a specification of a causal pathway for the development of the desire for suicide and the capability to engage in serious suicidal behavior (i.e., lethal or near-lethal attempts). Below, we describe both the theory's constructs and its hypotheses with a level of detail that opens it to possible falsification and invites tests of its hypotheses and comparisons with other theories of suicidal behavior.

We begin by describing the constructs of thwarted belongingness, perceived burdensomeness, and acquired capability. To do so, we use Figures 2–4, each of which graphically depicts components of the constructs, as well as relations with the empirically demonstrated risk factors discussed in the previous section. The figures feature many conventions of structural equation modeling for ease of interpretation, including that latent variables are denoted by circular shapes and observable variables are denoted by rectangles. In addition, hierarchical latent variables "cause" the lower level latent variables (as well as observable variables) they are connected to; thus, arrows point from the latent variable to the observable and lower level latent variable. In contrast, emergent variables (i.e., those caused by variables depicted earlier in the causal chain of the model) are depicted with causal arrows pointing toward them from other variables. To illustrate how individuals experiencing these constructs might describe their experiences, sample items from self-report measures designed to measure the constructs (i.e., the Interpersonal Needs Questionnaire for thwarted belongingness and perceived burdensomeness and the Acquired Capability for Suicide Scale for the acquired capability) are included in italics within the circles representing the constructs. The behavioral (observable) indicators of the constructs in these figures are the empirically supported risk factors for lethal suicidal behavior (discussed above) that according to the theory's definitions of the constructs represent behavioral indicators of thwarted belongingness, perceived burdensomeness, or acquired capability.

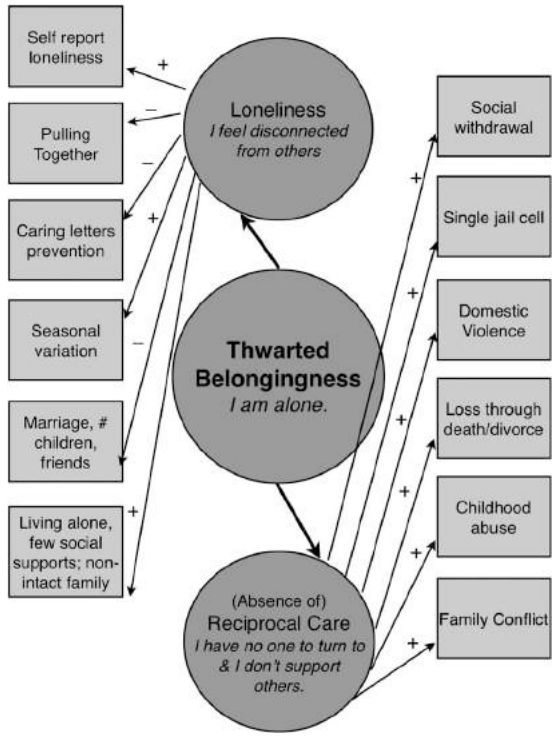


Figure 2. Dimensions and indicators of thwarted belongingness. A + sign indicates a positive association; a − sign indicates a negative association.

Table 2
Hypotheses of the Interpersonal Theory of Suicide

Number	Hypothesis
1	Thwarted belongingness and perceived burdensomeness are proximal and sufficient causes of passive suicidal ideation.
2	The simultaneous presence of thwarted belongingness and perceived burdensomeness, when perceived as stable and unchanging (i.e., hopelessness regarding these states), is a proximal and sufficient cause of active suicidal desire.
3	The simultaneous presence of suicidal desire and lowered fear of death serves as the condition under which suicidal desire will transform into suicidal intent.
4	The outcome of serious suicidal behavior (i.e., lethal or near lethal suicide attempts) is most likely to occur in the context of thwarted belongingness, perceived burdensomeness (and hopelessness regarding both), reduced fear of suicide, and elevated physical pain tolerance.

Thwarted Belongingness

As noted above, social isolation is one of the strongest and most reliable predictors of suicidal ideation, attempts, and lethal suicidal behavior across the lifespan. Social isolation can be conceptualized as measuring one facet of the higher order construct of social connectedness (or social integration), which can be measured at multiple levels (Berkman, Glass, Brissette, & Seeman, 2000). Our review also indicated that other facets of social connectedness (e.g., loneliness and loss of a spouse) are also predictive of lethal suicidal behavior. We propose that these social connectedness variables are associated with suicide because they are observable indicators that a fundamental human psychological need is unmet; this need is described by Baumeister and Leary (1995) as the "need to belong" (p. 1). According to the theory, when this need is unmet—a state we refer to as thwarted belongingness—a desire for death develops (also referred to in the suicidology and clinical literature as passive suicidal ideation). Other suicide theorists have also proposed a central role for social connectedness (see below),

though the proposed mechanisms for the relations between social connectedness and suicide differ across theoretical accounts.

According to Durkheim (1897), dysregulation of social forces—specifically, degrees of social integration—results in suicide. He proposed that too little social integration leads to an increase in suicide because individuals lack a connection to something that transcends themselves. When examining changes in suicide rates for a population over time, Durkheim's theory could provide explanations for—and facilitate prediction of—patterns and shifts in suicide rates. However, in his theory, Durkheim pays little attention to individual factors: if all individuals in a society are exposed to the shifts in social forces, why then do only particular individuals, and a very small subset of them at that, die by suicide?

In contrast, Shneidman (1987) articulated a theory of suicide focused on individual factors, with psychache—psychological and emotional pain that reaches intolerable intensity –as the primary factor causing suicide. Shneidman (1985) further posited that psychache is intolerable because it results from basic needs that have been thwarted. Shneidman (1998) proposed an extensive list of basic needs, seven of which he argued are most commonly thwarted in suicidal individuals, ranging from "affiliation" to "shame avoidance" to "order and understanding." In contrast to Shneidman's model, we propose that the need to belong is the need central to the development of suicidal desire, consistent with the wealth of findings linking social connectedness to suicidal behavior.

Thus, the interpersonal theory is consistent with past theoretical accounts of suicidal behavior through its proposal for a key role for social connectedness. However, the interpersonal theory diverges from previous theories in its proposal that an unmet "need to belong" (Baumeister & Leary, 1995, p. 1) is the specific interpersonal need involved in desire for suicide. The theory also differs in that we propose that thwarted belongingness is a multidimensional construct. Figure 2 depicts in greater detail the proposed definition of the construct of thwarted belongingness (analogous to a latent variable measurement model). The figure depicts a hierarchical latent variable model, with thwarted belongingness as a higher order latent variable with two subordinate factors. Consistent with this, Baumeister and Leary (1995) proposed that the need to belong comprises two facets: "People seem to need frequent, affectively pleasant or positive interactions with the same individuals, and they need these interactions to occur in a framework of long-term, stable caring and concern" (p. 520). We conceptualize these two dimensions of interpersonal functioning that are posited to compose thwarted belongingness as loneliness and the absence of reciprocally caring relationships. These constructs are depicted in Figure 2 as latent variables caused by (i.e., components of) the latent construct of thwarted belongingness.

Drawing on Russell's (1996) and Joiner and colleagues' (Joiner, Lewinsohn, & Seeley, 2002) conceptualization of the construct, loneliness is conceptualized as an affectively laden cognition that one has too few social connections, which also maps onto Baumeister and Leary's (1995) first facet of the need to belong (i.e., frequent and positive interactions). For example, an individual experiencing the mental state of thwarted belongingness might express the loneliness component of the construct by stating, "I did not have a satisfying social interaction today," or "I feel disconnected from other people." The second component of thwarted belongingness according to the interpersonal theory is the absence of reciprocally caring relationships (i.e., ones in which individuals both feel cared about and demonstrate care of another). For relationships to meet the need to belong, they must be characterized by positive feelings and must occur in a supportive context (Baumeister & Leary, 1995), and when they are not, relationships cease to meet the criteria as reciprocally caring. An individual with an absence of reciprocally caring relationships might express the experience by stating, "I am not a support for others," or "There are no people I can turn to in times of need" (see Figure 2).

In addition to depicting the multidimensional nature of thwarted belongingness, Figure 2 also further clarifies the definitions of these constructs by including observable indicators of the constructs of loneliness and reciprocally caring relationships—all of which are associated with elevated risk for lethal suicide attempts (and were discussed above in the Other Risk Factors section). The loneliness factor is posited to give rise to six observable risk factors for lethal suicidal behavior (citations for the elevation of risk for lethal attempts are provided in Table 1): self-report loneliness, pulling together effects, caring letters interventions (interventions designed to increase social contacts through long-term follow-ups, thereby decreasing loneliness and thus lowering risk for suicide), seasonal variation (reductions in social interactions that lead to increased feelings of loneliness have been posited as the mechanism whereby the spring peak in lethal suicidal behavior occurs), presence of marriage and number of children and friends, and living alone and reporting few to no social supports. The absence of reciprocally caring relationships factor is posited to give rise to six observable risk factors for lethal suicidal behavior: social withdrawal, low openness to experience, residing in a single jail cell, domestic violence, childhood abuse, and familial discord.

The interpersonal theory includes the assumption that thwarted belongingness is a dynamic cognitive–affective state rather than a stable trait, which is influenced by both interpersonal and intrapersonal factors. These include an individuals' actual interpersonal environments (e.g., number of individuals in the social network; Hawkley et al., 2008), activated interpersonal schemas (e.g., proneness to interpret others' behavior as indicative of rejection; Downey & Feldman, 1996), and current emotional states (e.g., depressed mood; Cacioppo et al., 2006). Thus, the theory presumes that an individual's degree of belongingness is likely to vary over time.

The theory also includes the assumption that the need to belong is a dimensional phenomenon rather than a categorical phenomenon. This is in line with Baumeister and Leary (1995) who proposed that "partial deprivation" (p. 511) occurs when the need to belong is partially, but not fully, met. At what point and under what conditions does a thwarted need to belong lead to suicidal thoughts? Research from our laboratory group demonstrated a significant linear relationship between self-reported thwarted belongingness and suicidal ideation among participants who also endorsed high levels of perceived burdensomeness (Van Orden, Witte, Gordon, Bender, & Joiner, 2008). This study indicated that even among participants with high levels of thwarted belongingness (i.e., those at the 90th percentile in the sample), elevations in suicidal ideation were not evident unless high perceptions of burdensomeness were also present. These data suggest that one condition under which thwarted belongingness may cause suicidal ideation is when it is experienced concurrently with perceptions of burdensomeness. We return to this idea in subsequent sections.

However, numerous studies have documented independent associations between indices of thwarted belongingness and suicide. To what degree must the need to belong be thwarted in order for suicidal ideation to result? Empirical studies have not directly examined this question, but data on the association between thwarted belongingness and other deleterious health outcomes speak to this question. Chronic feelings of loneliness (i.e., one facet of thwarted belongingness) are associated with elevated salivary cortisol levels, suggesting higher levels of a physiologic stress response (Cacioppo et al., 2000). Chronic feelings of loneliness are also associated with numerous negative emotional and interpersonal states, including elevations in negative emotions (i.e., anxiety and anger), pessimism, fear of negative evaluation, and shyness, as well lower levels of social support, agreeableness, and sociability (Cacioppo et al., 2006). These data suggest that a significant parameter along which thwarted belongingness may vary with regards to psychological and health outcomes is chronicity, as chronic loneliness was the key variable in the two preceding studies. Thus, we propose that when thwarted belongingness is prolonged, suicidal ideation is more likely to result.

Thwarted belongingness can also vary in terms of its magnitude. A robust association has been documented between social isolation—a relatively severe manifestation of thwarted belongingness as it involves few to no social relationships—and suicide (as reviewed above). Thwarted belongingness has also been experimentally induced in the laboratory by randomly assigning participants to receive feedback that they are likely to end up alone later in their lives. This experimental manipulation has been shown to cause numerous deleterious effects on cognition and behavior, including self-regulatory impairments (Baumeister, DeWall, Ciarocco, & Twenge, 2005), executive functioning impairments (Baumeister, Twenge, & Nuss, 2002; Campbell et al., 2006), reduced prosocial behaviors (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007), aggressive behaviors (Twenge, Baumeister, Tice, & Stucke, 2001), hostile social–cognitive processing biases (DeWall, Twenge, Gitter, & Baumeister, 2009), unintentional self-defeating behaviors, including risky behaviors (Twenge, Catanese, & Baumeister, 2002), and a state of inner numbness (Twenge, Catanese, & Baumeister, 2003). However, the same experimental manipulation of thwarted belongingness has also been shown to cause increased attention to stimuli relevant to belongingness (DeWall, Maner, & Rouby, 2009) as well as increased motivation to connect with others (Maner, DeWall, Baumeister, & Schaller, 2007). This raises the question: What conditions tend to elicit positive versus negative behavioral outcomes? To answer this question, in the latter study (Maner et al., 2007) researchers also investigated "boundary conditions" (p. 52) for the increases in affiliative behaviors. The authors found that those with thwarted needs to belong did not tend to engage in affilitative behaviors under two conditions: (a) if the person with whom affiliation could be increased was the person who caused the lowered belongingness (i.e., someone who rejected the participant) or (b) if the persons with whom affiliation could be increased would not be available for in-person interactions. It follows then that individuals who perceive others in their social networks as individuals who rejected them or as unavailable for in-person interactions would be less likely to engage in affiliative behaviors but would be just as likely (or more likely) to engage in the self-defeating behaviors that accompany thwarted belongingness. The data from the cited studies suggest that this more extreme form of thwarted belongingness may result in a more extreme form of self-defeating behavior, of which suicidal behaviors are an example. The theory is concerned with this most severe form of thwarted belongingness that involves perceptions that meaningful and mutually supportive connections are completely absent, with chronicity likely increasing these perceptions.

Perceived Burdensomeness

Family conflict, unemployment, and physical illness were three of the risk factors for suicide (discussed above) with the most robust support for their association with suicide. These three factors are all types of negative life events. Why might these three types of negative life events be particularly associated with suicide? Recall that one form of family conflict that has been shown to be associated with lethal suicidal behavior is the perception that one is a burden on family members. We propose that the elevated likelihood of developing perceptions of burdensomeness on others is the common thread among family conflict, unemployment, and physical illness that can account for the associations with suicide.

Perceptions of burdensomeness on family are also the key factor in Sabbath's (1969) family systems theory of adolescent suicidal behavior. The theory emphasizes adolescents' perceptions that they are expendable members of the family. The causal factors leading to adolescent suicidal behavior, according to the theory, are pathogenic parental attitudes toward the adolescent that are interpreted by the adolescent that he or she is not needed in the family and, in fact, that the family would be better off if the adolescent were dead. In a direct test of Sabbath's theory, perceptions of expendability in the family were found to be positively correlated with suicidal behavior in adolescents (Woznica & Shapiro, 1990). Converging results were found in a sample of preschoolers: Suicidal children were significantly more likely to be the product of unwanted pregnancies (Rosenthal & Rosenthal, 1984). However, Sabbath's theory does not account for the fact that the majority of youth who perceive that their families would be better of without them do not die by suicide.

The interpersonal theory is consistent with past conceptual work (e.g., Sabbath, 1969), as we posit a key role for perceptions of burdensomeness in the etiology of suicide. However, the interpersonal theory differs in that the construct is broader and in that perceptions of burdensomeness on close others, including but not limited to family members, are associated with desire for suicide. Further, according to the theory, perceived burdensomeness comprises two dimensions of interpersonal functioning—beliefs that the self is so flawed as to be a liability on others and affectively laden cognitions of self-hatred. These two dimensions are depicted as subordinate latent variables in Figure 3. An individual experiencing the mental state of perceived burdensomeness might express the liability component of the construct by stating, "I make things worse for the people in my life," whereas someone expressing self-hatred might directly state, "I hate myself" or "I am useless" (also depicted in Figure 3).

As was done for thwarted belongingness, observable indicators of the dimensions of perceived burdensomeness are depicted in Figure 3. The liability factor is posited to give rise to six observable risk factors for lethal suicidal behavior (citations for the elevation of risk for lethal attempts are provided in Table 1):

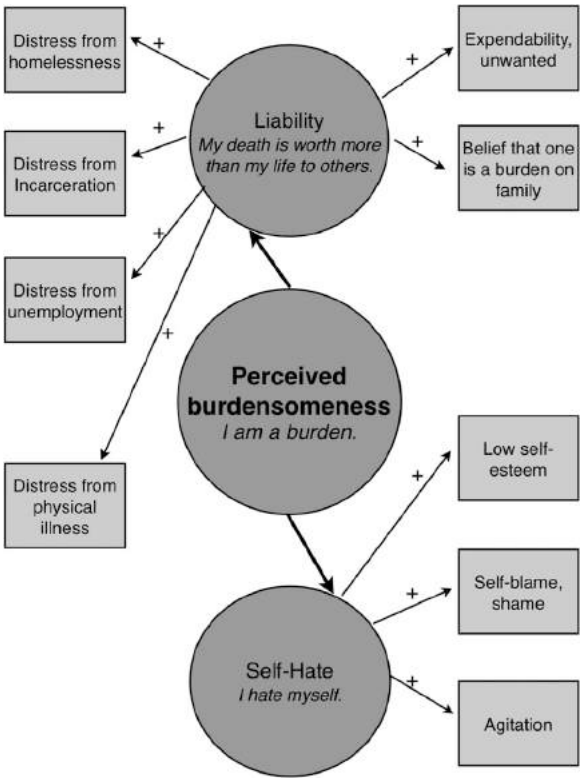


Figure 3. Dimensions and indicators of perceived burdensomeness. A + sign indicates a positive association; a − sign indicates a negative association.

distress caused by unemployment (the theory is able to account for mixed findings regarding the relation between unemployment and suicide: unemployment should elevate risk for suicide, according to the interpersonal theory, only when the stress of unemployment results in perceptions that one is a liability to oneself and others), distress from incarceration (in this way, the theory is consistent with the fact that markedly elevated rates of suicide are found in incarcerated [and recently incarcerated] populations), homelessness, serious physical illnesses, and direct statements in suicide notes or verbal communications that individuals perceive that they are expendable, unwanted, or burdens on others. It should be noted that we posit that in the vast majority of cases (if not all), these perceptions of liability are misperceptions amenable to therapeutic modification. The other dimension of perceived burdensomeness is the affectively laden construct of self-hate, with three corresponding observable indicators with empirically demonstrated associations with lethal suicidal behavior: low self-esteem, self-blame and shame, and mental state of agitation (in part, because it indicates that an individual may be experiencing a degree of self-hatred and anguish that is so elevated as to manifest physiologically).

As with thwarted belongingness, perceived burdensomeness is presumed to be a dynamic cognitive affect state, as well as a dimensional phenomenon. Thus, individuals' levels of perceived burdensomeness are likely to vary over time, over relationships, and along a continuum of severity. Thus, it is necessary to define the point at which perceptions of burdensomeness are relevant to suicidal behaviors. What does previous research on the construct suggest with regards to the critical level?

A psychological autopsy study of terminal cancer patients who died by suicide indicated that self-perceptions of being a burden on others was a key characteristic likely contributing to desire for suicide (Filiberti et al., 2001). In a comparison of suicide notes of individuals who made lethal versus nonlethal attempts, the presence of perceptions of burdensomeness on others differentiated between those who attempted and survived and those who attempted and died—with perceptions of burdensomeness characterizing the notes of those who died (Joiner, Pettit, et al., 2002). In addition, in the same study, greater perceptions of burdensomeness in the notes predicted the use of more lethal means among the sample of notes from individuals who died. A prospective study following psychiatric patients at high risk for suicide found that statements about feeling like a burden on others significantly elevated risk for suicide during a 60-day follow-up period after an evaluation (Motto & Bostrom, 1990).

Self-perceptions that one is a burden on others also differentiate between individuals with histories of suicide attempts and individuals with no attempts (R. M. Brown, Dahlen, Mills, Rick, & Biblarz, 1999; Van Orden, Lynam, Hollar, & Joiner, 2006) and are also associated with suicidal ideation (R. Brown et al., 2009; de Catanzaro, 1995; Van Orden, Lynam, Hollar, & Joiner, 2006). Similar to perceiving that one is a burden, the desire to make others better off was shown to be a more common reason given for suicide attempts versus episodes of self-harm without suicidal intent (M. Z. Brown, Comtois, & Linehan, 2002), and the belief that someone wishes one dead was shown to differentiate between suicidal and nonsuicidal individuals (Rosenbaum & Richman, 1970). Recall also that perceptions of expendability have been shown to characterize suicidal adolescents (Woznica & Shapiro, 1990). Similarly, suicidal preschoolers (compared with preschoolers with behavior problems) have been shown to be more likely to be unwanted by their parents (Rosenthal & Rosenthal, 1984).

These studies indicate that perceptions of burdensomeness on multiple others, rather than on a single individual, may be particularly deleterious. It may also be that extreme perceptions of burdensomeness within a single relationship are most strongly related to suicidal ideation. We take the former stance (while acknowledging that this is ultimately an empirical question) and propose that when an individual holds perceptions of burdensomeness for all significant others in his or her life and the person endorses some degree of self-hate regarding those perceptions, a critical threshold is crossed—and it is this severe level of perceptions of burdensomeness that is relevant to the theory.

Relations Between Thwarted Belonging and Perceived Burdensomeness

The theory involves the proposal that other more distal risk factors exert their influence on desire for suicide by increasing levels of thwarted belongingness, perceived burdensomeness, or some combination of the two. Childhood maltreatment and mental disorders are not conceptualized as indicators that an individual is currently experiencing thwarted belongingness or perceived burdensomeness (and are not caused by either construct); thus, they are not included in Figures 2 or 3. However, these risk factors are relevant to the development of both constructs. For example, both are life experiences that may increase an individual's risk for

developing social isolation and/or feelings of loneliness. Indeed, social alienation (cf., thwarted belongingness) has been proposed as the mechanism whereby the experience of childhood abuse increases risk for suicidal behavior (Twomey, Kaslow, & Croft, 2000). Insofar as childhood maltreatment and mental disorders predispose individuals to perceive that they are unwanted or expendable, these experiences may also elevate risk for perceptions of burdensomeness. Thus, we posit that these risk factors increase risk for suicide through their relationship with both thwarted belongingness and perceived burdensomeness.

Thwarted belongingness and perceived burdensomeness are presumed to be distinct but related constructs. This assumption raises important issues with regard to the definitions of the constructs. One could argue, for example, that if an individual's need to belong is completely thwarted, perceptions of burdensomeness are not possible because human connections are a prerequisite for the development of perceived burdensomeness. We suggest that this is not the case because the presence of perceptions of connections to others does not equate with meeting the need to belong. In other words, the construct of thwarted belongingness is not synonymous with a lack of human connections, and conversely, the need to belong is not fulfilled by the mere presence of perceptions of connections to others.

Another question arises concerning relationships that are characterized by perceptions of burdensomeness—can those relationships satisfy the need to belong? Does the presence of perceptions of burdensomeness preclude the satisfaction of the need to belong? Imagine a prison inmate whose wife and children come to visit each month. This individual might feel cared about by his family and experience positive interactions during these visits. However, imagine also that this individual believes that the stress of his incarceration on his family is too much for them and that they would be better off if he were gone. In this instance, a degree of belongingness is evident in the presence of strong perceptions of burdensomeness.

But what about the prison inmate who has no family or friends—what about individuals for whom meaningful connections are absent? Does this condition preclude the development of perceptions of burdensomeness—as raised above—is some degree of belonging necessary for the development of perceptions of burdensomeness? Again, we suggest that this is not the case because the presence of human connections does not in itself satisfy the need to belong; thus, even the most isolated individuals typically possess some degree of connection to others (e.g., estranged family members, health care providers, neighbors), and those connections could be characterized by perceptions of burdensomeness. In addition, those individuals who perceive total isolation from others are most likely alienated to the point that they perceive themselves as completely inconsequential and/or unwanted—a state akin to perceptions of expendability posited to function as behavioral indicators of perceived burdensomeness. Thus, according to the theory, thwarted belongingness and perceived burdensomeness are related but distinct constructs. Empirical findings are supportive, with prior studies indicating a significant correlation of moderate magnitude between the two constructs (e.g., zero order correlation coefficient of .58; Van Orden, Witte, Gordon, Bender, & Joiner, 2008).

Acquired Capability for Suicide

The models of suicide described above assume that suicide is multifactorially caused, such that suicidal ideation results from the fewest number of co-occurring risk factors, suicide attempts result from a greater number, and death by suicide results from the co-occurrence of the greatest number. These models also assume that risk for suicide is elevated due to greater risk for suicidal desire and, perhaps, increasingly severe forms of suicidal desire. These assumptions remain unchallenged by current theories and models of suicide. In contrast, according to the interpersonal theory, desire to die by suicide is not sufficient for lethal suicidal behavior to result because, simply put, dying by suicide is not an easy thing to do. Consider the following case example of a woman who died by suicide (Holm-Denoma et al., 2008):

> Case #7 was described as being socially isolated when she attempted suicide with an unknown quantity and type of pain medication and also opened her wrist arteries. This action led to some degree of unconsciousness, from which she awoke . . . . She then threw herself in front of a train, which was the ultimate cause of her death. (p. 233)

In this case, initial behaviors were not lethal, and to bring about death, the individual engaged in another method of suicide. These are frightening and painful behaviors.

According to the theory, to die by suicide, individuals must lose some of the fear associated with suicidal behaviors, and it would be very uncommon (if not impossible) to find someone born with a level of fear low enough to engage in suicide. Why might this be the case? Ohman and Mineka (2001) proposed an evolutionary-based model of fear grounded in the hypothesis that natural selection processes have shaped the human fear system so that it functions as a signal for the presence of "potentially life-threatening situations in the ecology of our distant forefathers" (p. 484). Thus, these authors posit that the adaptive value of fear (i.e., why humans who possess the fear system are more likely to survive and thus reproduce) lies in its potential to aid humans in the identification of stimuli associated with threats to survival. The interpersonal theory draws on—and extends—evolutionary models of fear and anxiety by proposing that humans are biologically prepared to fear suicide because suicidal behavior involves exposure to stimuli and cues that have long been associated with threats to survival.

And yet, some individuals die by suicide. According to the theory, it is possible to acquire the capability for suicide, which is composed of both increased physical pain tolerance and reduced fear of death through habituation and activation of opponent processes in response to repeated exposure to physically painful and/or fear-inducing experiences. In other words, through repeated practice and exposure, an individual can habituate to the physically painful and fearful aspects of self-harm, making it possible for him or her to engage in increasingly painful, physically damaging, and lethal forms of self-harm. Further, acquired capability is presumed to be a multidimensional emergent latent variable that involves the dimensions of lowered fear of death and increased physical pain tolerance, as depicted in the top of Figure 4.

Lowered fear of death. Fear of suicide is one category of reasons that individuals give when asked why they do not engage in suicidal behavior (Linehan, Goodstein, Nielsen, & Chiles, 1983). Further, an investigation of reasons for living, including

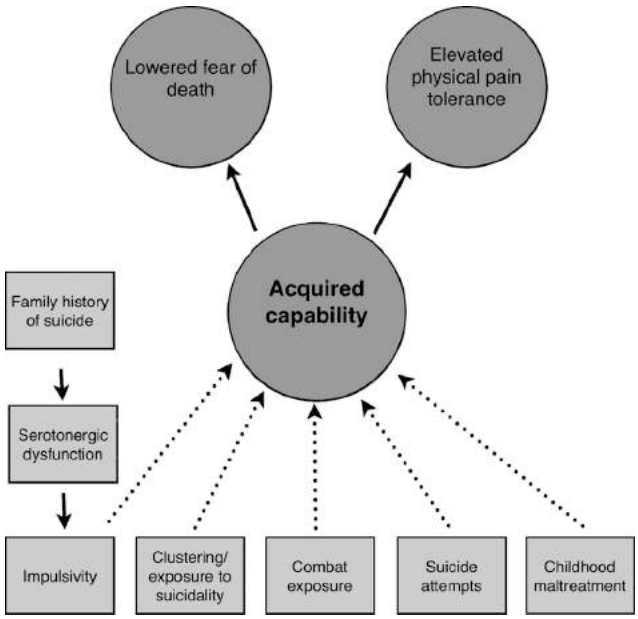


Figure 4. Dimensions and indicators of acquired capability. Dotted arrows represent habituation and strengthening of opponent processes.

fear of suicide, found that individuals who reported a history of "past serious ideation" (p. 280) about suicide but who had not attempted suicide reported higher levels of fear of suicide, compared with individuals with serious ideation who had acted on this ideation through suicidal behaviors (Linehan, Goodstein, Nielsen, & Chiles, 1983). These data suggest that suicidal ideation (cf., suicidal desire) is not sufficient for suicide attempts to result; rather, suicidal desire must occur in the context of reduced fear of suicide. Fear of suicide is presumed to be a dimensional construct varying from very high levels to negligible levels of fear, and further, for active suicidal desire to progress toward more severe manifestations of suicide risk (i.e., intent for suicide), fear must be reduced to the point that individuals endorse a nonzero degree of fearlessness regarding suicidal actions. To operationalize this construct and thus potentially falsify the theory, fearlessness about suicide can be measured by asking, "Do you think you have the capability or courage to kill yourself?" Any response other than a definitive "no" indicates nonzero fearlessness. In support of this threshold for fear reduction, self-reported fearlessness about engaging in suicide is strongly associated (i.e., $r = .79$) with a self-report measure of acquired capability (Van Orden, Witte, Gordon, Bender, & Joiner, 2008).

Elevated physical pain tolerance. Dying by suicide is not only frightening, but physically painful. Consider the following case example of a woman who died by suicide (Holm-Denoma et al., 2008): "Case #1 ingested an unknown quantity of chloral hydrate and 354.9 mL of Lysol Toilet Bowl Cleaner [which contains hydrochloric acid (HCl)] . . . and died 4 hours after being transported to the emergency room due to gastric hemorrhaging" (p. 233). Swallowing hydrochloric acid requires a tolerance for physical pain that most do not possess. The empirical literature concurs with this case example: Individuals with recent suicidal behavior demonstrate elevated physical pain tolerance (as measured by electric shock and thermal pain), compared with nonsuicidal psychiatric patients and individuals in the community (Orbach, Mikulincer, King, Cohen, & Stein, 1997; Orbach, Palgi, et al., 1996) and compared with individuals admitted to the emergency room due to accident injuries (Orbach, Stein, et al., 1996). The latter finding indicates that elevated pain tolerance is likely specific to suicidal behavior rather than physical injury. In addition, more serious levels of suicidal ideation have been shown to predict higher levels of self-administered shock (Berman & Walley, 2003).

Pain tolerance is conceptualized as a dimensional phenomenon. What level of pain tolerance is necessary to allow lethal (or near lethal) suicidal behavior to occur? First, this construct is likely highly method-specific, thus someone gaining the requisite pain tolerance to engage in cutting behaviors will not necessarily have gained the same tolerance for other methods, such as jumping. In this way, we are able to provide an explanation for data indicating that method substitution does not typically occur. In addition, the type of actions involved must also be considered. For example, cutting one's wrists requires sustained behavior on the part of the suicidal individual, and this individual must continue cutting his or her wrist in spite of the physical pain endured. An individual swallowing pills must continue to do so in spite of feelings of nausea or dizziness. In contrast, pulling the trigger on a gun or jumping off a building typically require a single action. We propose that both expectations about pain-to-be-experienced (e.g., "I won't feel anything once I pull the trigger"), physiological habituation to physical pain sensations, and cognitive appraisals of the tolerability of expected and/or experienced pain are key factors in determining individuals' tolerance for the pain involved in a specific suicide method. According to the theory, the common and proximate factor among all methods that serves as either a barrier to or a facilitator of lethal (or near lethal) suicidal behavior is the presence of a cognitive appraisal that the pain involved in the chosen method of suicide is tolerable. For lethal (or near lethal) suicide attempts to result, this cognitive appraisal must be nonambivalent and held with a strength of conviction of 100% (with duration of nonambivalence varying by method).

Habituation and opponent processes. The theory also includes a description of mechanisms whereby individuals acquire the capability for suicide; it is for this reason that the acquired capability latent variable is depicted in Figure 4 as an emergent variable (i.e., one that is caused by other variables in the model). How does the acquired capability develop? We propose that the mechanisms whereby individuals acquire the capability for lethal self-injury are habituation (to fear and pain involved in self-injury) and the strengthening of opponent processes (in response to fear and pain); both processes are described by opponent process theory (Solomon & Corbit, 1974). Opponent process theory states that observed emotional responses are a function of the summation of two underlying, oppositely valenced processes (i.e., opponent processes). Further, with repeated exposure, the emotional effects of the opposite process become amplified (whereas the primary emotional effects of a stimulus remain stable). This results in a net change in the observed response to be more similar to the valence of the opponent process, which behaviorally manifests as habituation. For example, an individual's initial, primary response to a stimulus such as bungee jumping will likely be fear. However with repeated exposure to bungee jumping, the effect of the primary

process (e.g., fear) will remain stable, whereas the effect of the opponent process (e.g., exhilaration) will become amplified, yielding a net observed emotional response of decreased fear. If the process is continued long enough, eventually the strength of the opponent process will be such that the valence of the observed emotional experience shifts from negative to less negative to positive.

The interpersonal theory involves an application of Solomon and Corbit's (1974) ideas to self-harm behaviors such that that the primary effect of painful and provocative stimuli (e.g., self harm) is fear and pain and that the opponent processes are relief and analgesia. However, the interpersonal theory differs in that it includes a proposal that the primary process also weakens. Thus, through repeated practice, what was originally a painful and/or fear-inducing experience (i.e., self-injury) may become less frightening as well as a source of emotional relief, thereby rendering individuals capable of engaging in what were previously painful and frightening behaviors. Although it has been observed that increases in positive affect may occur subsequent to self-harm without suicidal intent (Brain, Haines, & Williams, 1998; Muehlenkamp et al., 2009), data about changes in positive affect during or after suicidal behaviors are not available.

Painful and provocative experiences. The risk factors depicted in Figure 4—childhood maltreatment, clustering, combat exposure, impulsivity, and previous suicide attempts—are posited to increase risk for lethal suicidal behavior because they are physically painful and/or sufficiently frightening to engage habituation and opponent processes with regards to the pain and fear involved in self-harm. In addition, factors such as limiting access to lethal means may serve to block acquired capability, thus reducing rates of suicide.

Our review of risk factors for suicide indicates that a history of a past suicide attempt is another of the strongest and most reliable predictors of suicidal behavior; however, the literature also indicates that the majority of individuals who attempt suicide will not eventually die by suicide and that many individuals (i.e., up to half) who die by suicide do so on their first attempt (Rudd, Joiner, & Rajab, 1996). The construct of acquired capability provides a framework for understanding the complex relations between a history of past attempts and risk for future suicidal behavior. According to the theory, the most direct route (but not the only route) to acquiring the capability for suicide (i.e., the most potent painful and provocative experience) is by engaging in suicidal behavior, either through suicide attempts, aborted suicide attempts (preparing for the attempt and nearly carrying it out), or practicing and/or preparing for suicidal behavior (e.g., tying a noose; buying a gun with intent to engage in suicidal behavior; imagining one's death by suicide). Suicide attempts are the most potent of these behaviors with regards to acquiring the capability for suicide; thus, a potential way to falsify the theory would be to show that individuals with histories of past attempts have equivalent levels of acquired capability to those without past attempts.

Initial tests conducted by our laboratory group on acquired capability opened the theory to falsification by examination of the association between number of past suicide attempts and self-reported level of acquired capability, as measured by a self-report measure, the Acquired Capability for Suicide Scale (ACSS; Van Orden et al., 2008). The ACSS assesses fearlessness about lethal self-injury as well as self-perceived ability to tolerate the pain involved in self-injury (e.g., "I can tolerate more pain than most people" and "The pain involved in dying frightens me" [reversed]). Results indicated that number of past attempts positively correlated with levels of acquired capability, with highest levels of acquired capability reported by individuals with multiple past attempts. Further, a study on military personnel found that the branch of service (e.g., Army vs. Navy) was associated with a specific method of suicide (i.e., guns for Army; hanging and knots for Navy; falling and heights for Air Force). These data suggest that habituation to the pain and fear in suicide may be method specific and is acquired through exposure.

However, the capability for self-harm can be acquired through behaviors other than suicide attempts; thus, the theory would not generate the prediction that all individuals who die by suicide would necessarily have histories of prior attempts. This aspect of the theory is depicted graphically by the presence of other painful and provocative experiences in Figure 4 that are posited to activate habituation and opponent processes, thereby giving rise to acquired capability. In addition to previous suicidal behavior, other less potent pathways may also exist through the experience of other fear-inducing, risky behaviors. This aspect of the theory organizes a great deal of the literature on risk factors (described above) that otherwise appears disparate. Childhood maltreatment that involves physical and sexual abuse may activate habituation with regards to fear of self-injury as well as increased pain tolerance. Exposure to others who have engaged in suicidal behavior may activate habituation to the fear of suicidal behavior, thus accounting for clustering of suicidal behavior as a byproduct of elevated acquired capability. Combat exposure, which involves exposure to the fear of one's own possible death, as well as killing others, represents a relatively direct pathway, according to the theory.

In support of a less direct route to acquired capability, one study showed that individuals who reported engaging in more painful and provocative experiences (e.g., shoplifting, promiscuous sex, played contact sports, got a piercing, shot a gun, intentionally hurt animals, physical fights, jumped from high places) also reported higher acquired capability scores (Van Orden e al., 2008). These results persisted after controlling for potentially confounding variables, including current level of suicidal ideation, age, gender, and depressive symptoms. Suicidal ideation was controlled for in this particular analysis because, according to the theory, it is possible to be capable of suicidal behavior without desiring suicide.

Veterans are at increased risk for lethal suicidal behavior and are more likely to use firearms as the suicide method (Kaplan, Huguet, McFarland, & Newsom, 2007); the increased risk for use of firearms is notable, given that this population has extensive exposure to firearms, thus providing ample opportunities to habituate to the fearsome aspects of the use of firearms. A psychological autopsy study showed that retrospectively assessed levels of acquired capability—sample items included the prior engagement in suicide-preparatory behaviors, past suicide attempts, and problems with impulsivity—discriminated between living controls and those who died by suicide in a military sample (Nademin et al., 2008).

The theory does not preclude more complex relations between risk factors. Studies document a relationship between the trait of impulsivity and suicidal behavior: Impulsive people do not necessarily make impulsive suicide attempts; in fact, people who have engaged in more impulsive behaviors have been shown to engage

in more prior planning for suicide attempts and to use more medically serious methods. The construct of acquired capability provides a parsimonious explanation for this array of facts: impulsive and/or aggressive individuals are more likely to engage in behaviors that are painful and provocative (e.g., physical fights, injecting drugs). Because of this, we propose that impulsive individuals have higher levels of acquired capability for suicide, and it is this consequence of impulsivity that elevates risk for suicidal behavior. Regarding the relationship between the planfulness of suicide attempts and their lethality, we propose that this is also related to habituation to painful and provocative experiences. Specifically, an individual who spends a great deal of time planning an attempt is not only making pragmatic arrangements for his or her death but is also habituating to the fear associated with making a suicide attempt (i.e., is engaging in mental practice). Thus, although the capability for suicide is conceptualized as a capability that is gained over time, we also propose that through genetic and/or temperamental predispositions to fearlessness, impulsivity, or greater physical pain tolerance, some individuals are more susceptible to acquiring the capability for suicide, given exposure to painful and provocative events, or are even more likely to seek such events out.

The proposal that mental practice is an element of acquiring the capability for suicide provides one possible explanation for the fact that method substitution—when access to a means for suicide is blocked—does not occur. Working up to the act of suicide is quite difficult to do; habituating to one means does not necessarily result in habituation to another. Theoretical accounts of suicide that focus only on suicidal desire struggle to account for these data on method substitution (and for many other findings too).

The Proximal Causal Pathway to Suicide

Hypothesis 1: Passive Suicidal Ideation

The theory involves four hypotheses that are listed in Table 2. These hypotheses are depicted graphically in Figure 5, which illustrates the etiology of suicide according to the interpersonal theory. The causal process is depicted from left to right, beginning with thwarted belongingness and perceived burdensomeness and ending with lethal (or near lethal) suicidal behavior at the far right. The model also contains latent variable interactions, moderating effects, and emergent variables, each of which are discussed in detail. The interpersonal theory is concerned with proximal risk factors—the mental states and behavioral capacities that will be evident in an individual at varying degrees of nonzero risk for lethal suicidal behavior, ranging from individuals evidencing passive suicidal ideation to those demonstrating imminent risk for lethal suicidal behavior. The causal process depicted in Figure 5 also illustrates those factors that are present at varying degrees of risk, with the lowest level of risk for suicide toward the left of the figure and risk incrementally increasing toward the right end of the figure.

The theory's first hypothesis is that thwarted belongingness and perceived burdensomeness are proximal and sufficient causes of passive suicidal ideation. Individuals who possess either complete thwarted belongingness or complete perceived burdensomeness will experience passive (versus active) suicidal ideation, which may manifest as cognitions such as "I wish I was dead" or "I would be better off dead." In contrast, active suicidal ideation is marked by an active desire to engage in behaviors to take one's life (e.g., "I want to kill myself"). This hypothesis is depicted in the far

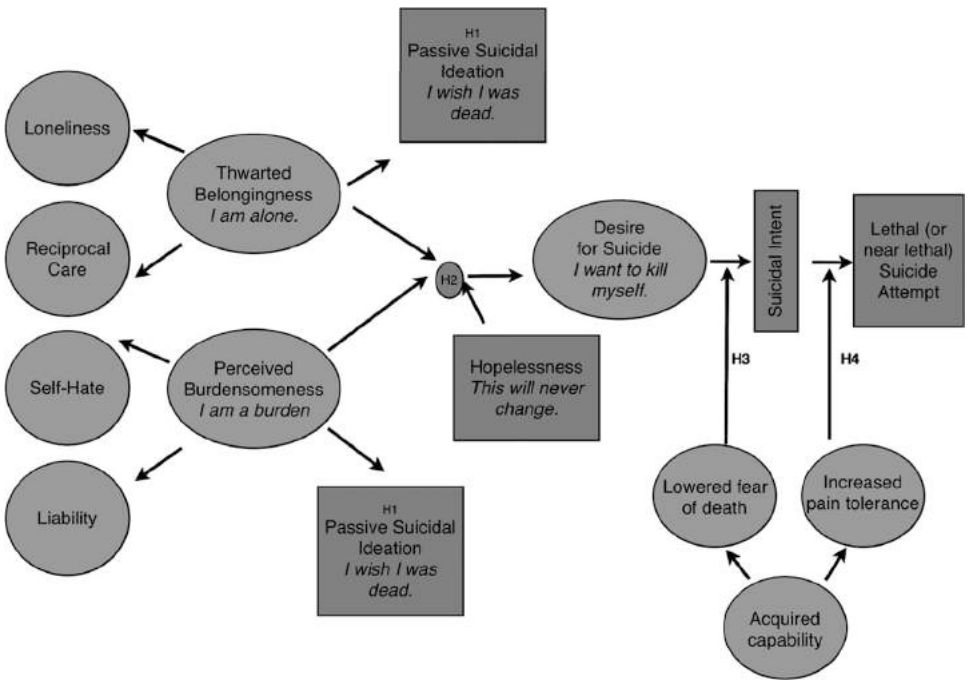


Figure 5. Causal pathway to lethal suicidal behavior. For text of hypotheses, see Table 1. H1 = Hypothesis 1; H2 = Hypothesis 2; H3 = Hypothesis 3; H4 = Hypothesis 4.

left of Figure 2, which also illustrates independent causal paths between thwarted belongingness and passive suicidal ideation and perceived burdensomeness and passive suicidal ideation. Note, however, that these causal paths do not continue beyond passive suicidal ideation, a point addressed by the next hypothesis.

The theory could be falsified if studies do not document independent associations for both thwarted belongingness and perceived burdensomeness with suicidal ideation or behaviors. Two studies have opened the theory to falsification by examining the hypothesized relation between perceived burdensomeness and indices of suicidal behavior. First, perceived burdensomeness measured by self-report in a clinical sample was shown to cross-sectionally predict greater severity of suicidal ideation and greater numbers of past suicide attempts, while controlling for age, gender, personality disorder status, depressive symptoms, and hopelessness (Van Orden et al., 2006). Second, an examination of the content of suicide notes showed higher levels of perceived burdensomeness in notes from individuals who died by suicide, compared with notes from individuals who attempted but survived (Joiner, Pettit, et al., 2002). Results of these studies indicate an association between perceptions of burdensomeness and suicidal ideation (though thwarted belongingness was not measured in either study, thus precluding conclusions regarding the effects of the presence of both constructs).

In several studies, researchers have examined the relation between thwarted belongingness and indices of suicidal behavior. In one study, researchers examined the relation between thwarted belongingness measured by self-report and likelihood of having a past suicide attempt (Conner, Britton, Sworts, & Joiner, 2007) among methadone maintenance patients at an urban university hospital. Results indicated that a one-point increase on the belongingness subscale (indicating greater belongingness) decreased the odds of having a past suicide attempt by 6%; the same association did not hold for accidental overdoses, supporting the specificity of thwarted belongingness to suicidal behavior. The relationship between thwarted belongingness and suicidal desire was also supported by a series of studies investigating the phenomenon of pulling together after positive collective experiences, in this case, sporting events (Joiner, Hollar, & Van Orden, 2006). These studies indicated that lower suicide rates were associated with sports team successes, which is consistent with the hypothesis that sporting events may foster increased belongingness and thereby buffer suicide rates.

Regarding thwarted belongingness, this hypothesis could be falsified if studies do not demonstrate the presence of passive suicidal ideation among all individuals with a completely thwarted need to belong (i.e., those holding perceptions that all meaningful and reciprocally caring relationships are absent). Regarding perceptions of burdensomeness, this hypothesis could be falsified if studies do not demonstrate the presence of passive suicidal ideation among all individuals with global perceived burdensomeness (i.e., those who perceive themselves as a burden on all significant others and who experience a nonzero degree of self-hate secondary to these perceptions). Note, however, that this hypothesis does not posit that these factors are necessary but does instead allow for situations in which passive suicidal ideation may result from other causes. The degree to which the theory's constructs are necessary for suicidal behavior remains an empirical question and is addressed in later sections.

Hypothesis 2: Suicidal Desire

The literature on suicide indicates that among those who have passive thoughts of suicide (e.g., "I would be better off dead"), most will not experience active suicidal ideation involving thoughts of killing themselves (Thomas, Crawford, Meltzer, & Lewis, 2002). Consistent with this fact, the theory includes the hypothesis that in order for a passive desire for suicide to intensify into an active desire for suicide, a completely thwarted need to belong must be accompanied by global perceived burdensomeness, as well as hopelessness regarding these two painful states. Thus, the theory's second hypothesis states that a mental state characterized by the simultaneous presence of thwarted belongingness, perceived burdensomeness, and hopelessness about one's interpersonal connections is a proximal and sufficient cause of suicidal desire. This hypothesis is graphically depicted in the middle of Figure 5 with the intersection of thwarted belongingness, perceived burdensomeness, and hopelessness regarding these states causing desire for suicide (e.g., thoughts such as "I want to kill myself").

According to the theory, the absence of either thwarted belongingness (perceived as unchanging) or perceived burdensomeness (also perceived as unchanging) is likely to be lifesaving, as active suicidal desire develops only in the confluence of both factors. Thus, this hypothesis could be falsified if individuals who are elevated on only thwarted belongingness or perceived burdensomeness demonstrate more severe (or equivalent) suicidal ideation than do individuals who are elevated on both. Two studies have opened the theory to falsification by examining this prediction. In the first study (Van Orden et al. 2008), the most severe levels of suicidal desire (operationalized as suicidal ideation on the Beck Suicide Scale) were reported by undergraduates at the most severe levels (in the sample) on both thwarted belongingness and perceived burdensomeness, relative to individuals with severe levels of only thwarted belongingness or perceived burdensomeness. This result was observed above and beyond age, gender, and level of depression. In the second study (Joiner et al., 2009), of an ethnically diverse community sample, young adults with low levels of both family support (cf. low belongingness) and mattering to others (cf. perceived burdensomeness) demonstrated the most severe levels of suicidal ideation. The study included both six-month and lifetime histories of depression as covariates, indicating that the theory's variables predicted suicidal desire above and beyond the contribution of depression. Findings from these studies suggest that when people hold two psychological states in their minds simultaneously—low belongingness and perceived burdensomeness—risk for the development of suicidal desire is elevated (and this occurs beyond the effects of depression).

However, in order for active suicidal desire to develop, individuals must perceive their levels of belongingness and burdensomeness to be stable and permanent—in other words, they must be hopeless about their perceived interpersonal status. This hypothesis builds on the empirical and theoretical literature on the association between hopelessness and lethal suicidal behavior (see Table 1). A meta-analytic review showed that the Beck Hopelessness Scale (BHS; (Beck, Weissman, Lester, & Trexler, 1974), with a cutoff score of 9, is predictive of both lethal and nonlethal suicide attempts (McMillan, Gilbody, Beresford, & Neilly, 2007). The sensitivity (i.e., the probability of a positive test result among

individuals who went on to die by suicide) of the BHS was .80 for predicting death by suicide and .78 for nonfatal suicide attempts. This indicates that approximately 80% of people who engaged in serious suicidal behavior score above this cutoff point on the BHS. This finding is certainly supportive of the notion that hopelessness is associated with suicidal behavior. Nevertheless, the specificity of the BHS (i.e., the probability of a negative test result among those who did not engage in suicidal behavior) was .42 for both fatal and nonfatal suicide attempts. This indicates that nearly 60% of those who did not make a suicide attempt had a cutoff score above 9 on the BHS. Taken together, these data indicate that hopelessness is sensitive in the prediction of suicidal behavior, but it performs less well regarding specificity: Most hopeless individuals will not die by suicide.

We propose that one explanation for this well-replicated finding is that the content of hopeless beliefs—what individuals are hopeless about—is relevant in the prediction of suicidal behavior. We propose that it is only hopelessness regarding complete and pervasive thwarted belongingness and perceived burdensomeness that will cause active suicidal desire because it is only at this juncture of mental states that individuals see no possibility of positive change. This hypothesis could be falsified if individuals demonstrating hopelessness about thwarted belongingness and perceived burdensomeness are more likely to report passive rather than active suicidal ideation; for example, a counterhypothesis could propose that hopelessness causes individuals to shut down so that active behavior and ideation, including suicide-related, are suppressed.

Hypothesis 3: Suicidal Intent

Intent to engage in suicidal behavior has been found to be part of a pernicious group of suicidal symptoms termed "resolved plans and preparation" (Joiner, Rudd, & Rajab, 1997; Witte et al., 2006) and has been shown to predict death by suicide in adults (Conner, Duberstein, & Conwell, 1999; Harriss, Hawton, & Zahl, 2005; Obafunwa & Busuttil, 1994). Current intent for suicide is a key component of suicide risk assessment protocols (Brent, 2001; Jobes, 2006; Joiner, Walker, Rudd, & Jobes, 1999; Linehan, Comtois, & Murray, 2000; Reynolds, 1991; Shea, 1999; Simon, 2006) and is conceptualized as a necessary component of serious, imminent risk for suicide. Thus, the presence of intent can also be conceptualized as the level of suicidal desire that is most likely to translate into behavior. However, we posit that in order to possess suicidal intent, individuals must have habituated to the fear involved in suicide to an extent that they are able to imagine, plan, or decide to engage in suicidal actions. Thus, it is hypothesized (as depicted in Figure 5) that the simultaneous presence of suicidal desire and the first component of acquired capability—lowered fear of death—serves as the condition under which suicidal desire will transform into suicidal intent.

This hypothesis would be falsified if, among those with suicidal desire, studies documented a lack of an association between fear of suicide and suicidal intent. Stronger tests could examine the sensitivity and specificity of decreased fear of suicide (e.g., a nonzero response on a measure of confidence regarding suicide) in the identification of suicidal intent among individuals with suicidal desire. The strongest test would involve examining the prediction that among individuals with suicidal intent, all would demonstrate fearlessness of suicide.

Hypothesis 4: Lethal (and Near Lethal) Suicide Attempts

The theory's final hypothesis directly addresses the relative rarity of lethal suicidal behavior, compared with nonlethal attempts and suicidal ideation. As depicted in Figure 1, the theory involves the assumption that there are relatively large numbers of people who desire suicide and moderate numbers of those who have developed the capacity for suicidal behavior, but the presence of both should be comparatively rare. The theory's fourth hypothesis is that the outcome of serious suicidal behavior (i.e., lethal or near lethal suicide attempts) is most likely to occur in the context of suicidal intent (which results from thwarted belongingness, perceived burdensomeness, and hopelessness regarding both), reduced fear of suicide, and elevated physical pain tolerance. This hypothesis is depicted in Figure 5 as the final causal arrow from suicidal intent to lethal (or near lethal) suicide attempts. Notice that this causal path is moderated by the presence of increased pain tolerance: suicidal intent does not result in lethal (or near lethal) suicide attempts unless increased pain tolerance that allows an individuals to endure the pain involved in dying by suicide is present.

To examine the theory's prediction regarding the role of physical pain tolerance as a final barrier to the outcome of lethal suicidal behavior, longitudinal studies could examine physical pain tolerance and follow individuals over time to see whether physical pain tolerance is elevated among individuals who die by suicide. Another approach could compare individuals who survived attempts that are almost always lethal (e.g., jumping from the Golden Gate Bridge) to survivors who called for help after engaging (or beginning to engage) in suicidal behavior. Although this approach would necessarily involve retrospective reports (thereby introducing recall biases), cognitive appraisals of the degree to which pain associated with the chosen suicide method was tolerable at the time of the intent could be compared between the groups. The theory's hypothesis would be falsified if individuals who called for help reported greater appraisals of tolerability, compared with the individuals whose survival could be attributed to chance.

The theory's final hypothesis can also be empirically examined with regard to the prediction that the greatest risk for suicide is conferred by the simultaneous presence of thwarted belongingness, perceived burdensomeness, hopelessness in relation to both, and acquired capability for lethal self-injury. Psychological autopsy methods, whereby the characteristics of individuals who died by suicide are assessed, could be used to examine the proportion who evidenced all of the theory's constructs. This proportion could be compared with the proportion from a sample of nonlethal suicide attempters. The theory's hypothesis would be falsified if a greater proportion of nonlethal attempters evidenced all of the theory's constructs, compared with lethal attempters.

This hypothesis would also be falsified if greater risk for suicide was not found among those demonstrating more severe levels of the theory's constructs. One study with a sample of clinical outpatients had self-reports of perceptions of burdensomeness and acquired capability as (partial) indices of suicidal desire and ca-

pability for suicide, respectively, and measured risk for suicidal behavior, as rated by clinicians, with a standardized risk assessment framework (Joiner et al., 1999; Van Orden et al., 2008, Study 3). Consistent with Hypothesis 4, results indicated a significant interaction between perceived burdensomeness and acquired capability in the prediction of clinician-rated risk for suicide, above and beyond the effects of other risk factors (i.e., depression scores, gender, and age). In line with predictions, the form of the interaction indicated that individuals high on both perceived burdensomeness and acquired capability were rated at highest risk for suicide by clinicians. The limitation of this finding, of course, is that desire was only partially measured—belongingness was not included.

To remedy this, members of our research group studied a sample of young adults experiencing a suicidal crisis (Joiner, Van Orden, Witte, & Rudd, 2009, Study 2). Some participants' crises involved a suicide attempt, whereas others experienced serious suicidal desire in the absence of attempts. Results were consistent with the theory and indicated that the three-way interaction of thwarted belongingness, perceived burdensomeness, and acquired capability (measured by number of past suicide attempts) predicted whether participants' current suicidal crises involved suicide attempts. Results indicated that the combination of high levels of both thwarted belongingness and perceived burdensomeness was most likely to translate into suicide attempts in the presence of higher levels of acquired capability (i.e., greater numbers of past attempts). Results were obtained above and beyond the contribution of numerous documented risk factors for suicidality, including depression, hopelessness, and borderline personality disorder features.

If empirically supported with lethal suicidal behavior, the final hypothesis of the theory could provide an explanation for the imprecision of the individual risk factors: unless a risk factor causes both desire and capability for suicide, its specificity in the prediction of lethal suicidal behavior will be low. The interpersonal theory's final hypothesis provides a parsimonious account for mechanisms whereby risk factors for suicide confer risk: risk factors—such as mental disorders and childhood abuse—confer risk for suicidal behavior indirectly by increasing—or indicating the presence of—experiences of thwarted belongingness, perceived burdensomeness, and pain and/or provocation.

Consider the role of mental disorders: Individuals who suffer from mental disorders are at elevated risk for suicide (with some disorders conferring greater risk than others), but the vast majority of these individuals will not demonstrate suicidal behaviors. As one example, consider borderline personality disorder. A hallmark feature of BPD is repeated nonlethal, self-injurious behavior, which according to the theory represents a relatively direct pathway to the acquired capability to lethal self-injury. This hypothesis that individuals with BPD may be more likely to have acquired the capability for lethal self-injury is consistent with the fact that approximately 60%–70% of people with BPD have made at least one severe suicide attempt (Gunderson, 2001). Another hallmark feature of BPD is extreme fear of abandonment (American Psychiatric Association, 2000), a symptom that likely relates to thwarted belongingness. In fact, it is often during threatened or real abandonment episodes when individuals with BPD engage in self-injurious behavior (American Psychiatric Association, 2000). Research also suggests that individuals with BPD may be more prone to perceptions of burdensomeness: self-hate, self-blame, and strong feelings of shame are common among individuals with BPD (Linehan, 1993; Rizvi & Linehan, 2005), and it is likely that feelings of shame accompany perceptions that one is a burden on others. Thus, according to the interpersonal theory, high rates of suicidal behavior among individuals with BPD may be due to the fact that these individuals are more susceptible to thwarted belongingness and perceived burdensomeness and more likely to engage in painful and provocative events that lead to an acquired capability.

Consider also that AN is associated with a high suicide rate (Keel et al., 2003). Members of our research group examined methods of suicide among a sample of 9 women with AN who died by suicide, to investigate competing hypotheses about the relation between AN and suicidal behavior (Holm-Denoma et al., 2008). One possibility is that these women were physically fragile due to AN and died using methods that would be relatively less lethal among physically healthy adults (i.e., those without compromised body weight). Another possibility is that these women died using methods that would be highly lethal among physically healthy adults because they had acquired the capability for suicidal behavior through the painful experience of self-starvation. Results were consistent with the latter hypothesis: Of the 9 women with AN who died by suicide, all used methods that would be lethal for physically healthy individuals (e.g., jumping in front of a train), and 7 were unlikely to be rescued following their attempts. This study suggests that the high rate of suicidal behavior among individuals with AN may be accounted for, in part, by experiences of pain and provocation that are a central component of the disorder (e.g., self-starvation) and that may foster acquired capability for suicidal behavior.

Conclusions and Future Directions

In the current article, we examined the literature on empirically demonstrated risk factors for suicidal behavior and demonstrated how the interpersonal theory is able to account for these facts about suicidal behavior. The theory involves the assumption that to a large extent, the same mental processes underlie all forms of suicidal behavior. Thus, when looking to the literature on suicidal behavior, available data should be consistent with the role of all constructs in the development of suicidal desire. Figures 2–4 depict the hypothesis that empirically supported risk factors for suicide elevate risk because they are indicators of thwarted belongingness, perceived burdensomeness, or acquired capability. Our discussion illustrated mechanisms whereby risk factors influence the constructs of the theory. This description of mechanisms underlying proximal risk for suicidal behavior provides a parsimonious account for why the majority of individuals who possess a given risk factor will not attempt or die by suicide—few risk factors increase all components of the interpersonal theory. The theory also provides explanations for heretofore difficult to explain epidemiological facts about suicide—including the gender distribution and prevalence of different forms of suicidal behavior—facts that available theories are unable to explain fully.

One of the most consistent findings with regards to the epidemiology of suicidal behavior is its gender distribution. Male suicides outnumber female suicides worldwide, yet far more women than men are engaging in ultimately nonlethal suicidal behavior. Studies suggest that women may be more likely to experience

many risk factors that increase—or indicate the presence of—thwarted belongingness and perceived burdensomeness, including major depression (i.e., women are approximately twice as likely as men to suffer from major depression; Nolen-Hoeksema, Larson, & Grayson, 1999). In addition, data indicate that women rank helping others, having a close family, and being loved by loved ones significantly higher than do men as sources of happiness (Crossley & Langdridge, 2005), suggesting that when these potential sources of happiness are absent, women are particularly likely to perceive thwarted belongingness and high burdensomeness and, thus, suffer greater emotional pain than do men in the same situations. However, because women on the whole have fewer experiences that inure them to fear of self-injury (e.g., exposure to guns, physical fights, violent sports, etc.) and because they have lower pain and fear tolerance than men (Berkley, 1997), women may be less able to develop the acquired capability for suicidal behavior than are men. Therefore, although women may be more likely than men to desire suicide, they are less likely to die by suicide.

The interpersonal theory is also able to explain the prevalence of suicidal behavior. The theory involves three conditions that when present simultaneously are sufficient to result in lethal (or near lethal) suicide attempts. As each of these conditions is relatively rare and their confluence more so, the theory is consistent with the rarity of suicidal behavior itself.

Available theories are unable to explain these aspects of suicidal behavior, as these theories assume that risk for suicide is elevated solely through increasingly severe levels of desire for suicide. This assumption is exemplified in several descriptive models that account for the prevalence of suicidal behavior by positing the necessary presence of numerous risk factors for suicidal desire. These models, however, are unable to explain facts about suicide such as gender distribution, seasonal variation, and lack the level of precision needed to prospectively predict suicidal behavior. In addition, as noted by Prinstein (2008), available theories do not, for the most part, address both intraindividual and interindividual factors. The interpersonal theory emphasizes the role of acquired capability—a primarily intraindividual factor—as well as the role of thwarted belongingness and perceived burdensomeness—intrapersonal factors (i.e., emphasizing perceptions) that transact with the interpersonal environment.

Thus far, we have posited that the simultaneous presence of the theory's constructs is sufficient but not necessary for suicidal behavior to occur. Thus, other pathways to suicidal behaviors are possible. However, a testable alternative is that the theory's constructs represent the etiological mechanisms that underlie all forms of suicidal behavior. This alternative contrasts with many existing theoretical accounts. Consider, Baechler's (1979) taxonomy of suicide that proposes all suicidal behavior seeks to solve a problem and that the problem "solved" by suicide varies and results in types of suicide, each with different etiological origins, including escapist suicides (i.e., escape from grief or punishment), aggressive suicides (i.e., vengeance or blackmail), oblative suicides (i.e., sacrifice), and ludic suicides (i.e., proving oneself; Shneidman, 2001). A recent review of the theoretical literature on suicide (Maris, Berman, & Silverman, 2000) addresses this assumption by asking, "Is suicide one thing or many things?" and answering, "it seems clear that the answer is 'many'" (p. 50). We suggest that this assumption has been accepted because of the relative inability of previous theories to comprehensively explain and predict suicidal behavior. We also acknowledge that the question proposed by Maris and colleagues (2000)—"Is suicide one thing or many things?"—is an empirical one and is in need of scientific scrutiny. Further, the assumption that the same mechanisms underlie all suicidal behaviors—if it were supported—would greatly enhance the clinical usefulness of the theory. It is this application of the theory—clinical applications—to which we now turn.

One of the primary tasks facing clinicians working with suicidal patients is the assessment of the degree of risk faced by individual patients. Suicide risk assessment frameworks are formalized procedures for clinicians that synthesize the research on the many documented predictors of suicide and provide structured ways to assess both current and more long-standing risk. Applying the interpersonal theory to risk assessment suggests that risk assessment frameworks should explicitly address the degree to which patients are currently experiencing thwarted belongingness and perceived burdensomeness, as well as the degree to which they have acquired the capability for lethal self-harm. Risk assessment grounded in the interpersonal theory, if supported empirically, will allow for a more parsimonious and clinically useful conceptualization of the etiology of suicide because this conceptualization does not presume that to assess individuals' degree of risk for suicide requires measurement (or estimation) of a vast number of risk factors. For more specific recommendations on use of the interpersonal theory in suicide risk assessment (as well as treatment and prevention), readers are referred to Joiner et al. (2009).

Clinical care for suicidal patients also involves treatment (i.e., psychotherapy and pharmacotherapy) aimed at reducing risk for engaging in suicidal behavior. Public health campaigns also aim at preventing suicidal behavior by targeting all individuals or those at elevated risk for developing thoughts about suicide or engaging in suicidal behavior. We propose that thwarted belongingness and perceived burdensomeness (as well as hopelessness concerning these states) are dynamic (i.e., frequently changing) factors, whereas acquired capability, once acquired, is relatively stable and unchanging. These aspects of the theory are relevant for treatment. The theory includes a clearly delineated danger zone at the intersection of perceived burdensomeness, thwarted belongingness, and the acquired capability and, thus, yields a clear prediction about what components of suicide interventions will be most effective at treating suicidal symptoms. According to the theory, interventions that directly or indirectly address perceived burdensomeness and thwarted belongingness should produce the best outcomes among suicidal individuals. The acquired capability would be relatively difficult to effectively address in treatment because a therapist is not able to modify a patient's history, but this aspect of the theory does provide a clear prediction regarding who may benefit most from suicide focused preventive interventions: specifically, those who have a history fraught with painful and provocative experiences. The theory also suggests that prevention efforts targeting thwarted belongingness and perceived burdensomeness may be effective. For example, public health campaigns promoting the importance of maintaining social connections and social contributions could impact suicide rates. Use of the interpersonal theory to improve clinical care for suicidal patients and as a basis for suicide prevention efforts would, we suggest, support Lewin's (1951) claim that "there is nothing so practical as a good theory" (p. 169).

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