

2016

# Exploring the conceptual overlap of the cognitive and affective theories of suicide

Leo D. DeBroeck  
*Eastern Washington University*

Follow this and additional works at: <http://dc.ewu.edu/theses>

---

## Recommended Citation

DeBroeck, Leo D., "Exploring the conceptual overlap of the cognitive and affective theories of suicide" (2016). *EWU Masters Thesis Collection*. 352.  
<http://dc.ewu.edu/theses/352>

This Thesis is brought to you for free and open access by the Student Research and Creative Works at EWU Digital Commons. It has been accepted for inclusion in EWU Masters Thesis Collection by an authorized administrator of EWU Digital Commons. For more information, please contact [jotto@ewu.edu](mailto:jotto@ewu.edu).

EXPLORING THE CONCEPTUAL OVERLAP OF THE COGNITIVE AND AFFECTIVE  
THEORIES OF SUICIDE

---

A Thesis  
Presented to  
Eastern Washington University  
Cheney, Washington

---

In Partial Fulfillment of the Requirements  
For the Degree  
Master of Science in Psychology with a Clinical Emphasis

---

By  
Leo D. DeBroeck  
Spring 2016

THESIS OF Leo D. DeBroeck APPROVED BY

---

Kayleen Islam-Zwart, Ph.D, CHAIR, GRADUATE STUDY COMMITTEE      DATE

---

Keely Hope, Ph.D, MEMBER, GRADUATE STUDY COMMITTEE      DATE

---

Stacey Chay, MSW, MEMBER, GRADUATE STUDY COMMITTEE      DATE

MASTER'S THESIS

In presenting this thesis in partial fulfillment of the requirements for a master's degree at Eastern Washington University, I agree that the JFK Library shall make copies freely available for inspection. I further agree that copying of this project in whole or in part is allowable only for scholarly purposes. It is understood, however, that any copying or publication of this thesis for commercial purposes, or for financial gain, shall not be allowed without my written permission.

Signature\_\_\_\_\_

Date\_\_\_\_\_

### Abstract

To be able to help those contemplating suicide, the first step is to understand why people die by suicide. The cognitive theory of depression and the affective theory of psychache answer that question differently. Specifically, although they may have different parts in their theoretical systems, many of those parts overlap conceptually. The purpose of this study was to find if the two theories could be combined to create a more holistic theory between them. The application of each theory's aspects, in the form of standardized scales administered online to 427 college students, accounts for the nearly the same amount of change in suicidal ideation. Scales, each measuring one aspect of a theory, were compared as a whole to see if they account for the same or different variance in suicidal ideation. The two theories primarily overlapped accounting for 41% of the variance in suicide ideation with 31% of variance overlapping. Because each theory adds a small amount of new understanding to how suicide manifests, discussion and a possible new direction for future research focusing on the benefits of creating a unified theory of suicide is provided.

## Acknowledgements

I would like to thank the faculty at Eastern Washington University for explicitly caring first their students' well-being with an unrelenting force. More specifically, I would like to thank Dr. Kayleen Islam-Zwart for a plethora of positive experiences including her openness and flexibility to allow me to pursue this field of research. Her insights into how to best guide my own insights and future, without exaggerating, has changed my life. Dr. Keely J. Hope has been inspirational to me through her actions and attitude towards the work left to be in this realm of research and the field to make a better world for everyone. Stacey Chay has taught me some of the most valuable lessons I will ever learn including the importance and weight of the work left to be done and how to be honest with myself in order to do my part in it. For this and much more, I cannot express strongly enough how these individuals have affected me to my core.

Abstract .....	iv
Acknowledgments .....	v
Introduction .....	1
The Cognitive Theory of Suicide .....	2
The Affective Theory of Suicide.....	6
The Overlap of Theories .....	9
Method .....	15
Results .....	21
Discussion .....	26
References.....	33
Appendix.....	46
Vita.....	55

Before jumping off the Golden Gate Bridge to his death, John T. Doyle left a suicide note which only read, "Absolutely no reason except I have a toothache," (Libman, 1987, p. 1). According to the World Health Organization (2008), approximately one million people died by suicide in 2000, with the major contributors to suicide being depression and other complex psychological factors. Although a toothache was not listed as one of those factors, for John T. Doyle, his affective and cognitive state must have been contributors to his decision to jump. Knowing these overwhelming numbers, there is much more to be learned to understand the vital aspects of why people die by suicide. Understanding the basic cognitive risk factors, such as suicide ideation (Beck, Rush, & Emery, 1979; Renieri et. al., 1987; Rudd, Joiner, & Rajab, 1996), help further the base of knowledge of the psychological risk characteristics of suicide. Even though suicide is a completely preventable cause of death, there is not enough known yet to cure it. Although more is learned about suicide every year, currently there is not one type of therapy that can be prescribed to prevent suicide. Of forms of psychotherapy, only dialectal behavioral therapy has been found to reduce suicide attempts in more than one clinical trial (Lineham et al., 2006). To find a workable solution to suicide, all the pieces, socio-cultural, behavioral, affective, and cognitive, need to be understood (Shneidman, 1985, 1987). This exact mission, to create effective evidence based treatments, has been the continued goal of research on suicide (Jobes, 2013).

The purpose of the current research was to bridge two working theories of suicide, the affective theory of psychache and the cognitive theory of depression, by logically connecting the individual pieces that make up the theories. Working further than the theoretical convergence of these concepts for academic critique, the intention of this research was to see if these theories would, in college students, show a seamless connection of thwarted psychological needs and

stressors to the components of psychological pain and cognitive errors (i.e., distorted thinking). More specifically, to understand how they mediate suicide ideation, in order to provide a fuller picture of the suicidal mind and ultimately a workable solution to suicide.

There are two main views regarding primary precursors to suicide: 1) thwarted psychological needs (Shneidman, 2001) and 2) stress to a person who is vulnerable to being easily overwhelmed by stressors (Beck, 1967). If these two perceived causal steps are related, it could bring together two prominent theories, psychache (i.e., mental pain or unbearable psychological pain) as suicide and the cognitive theory of depression, together into a more holistic viewpoint of suicide. Together the relationship between these variables, as they factor into causing other precursors to suicide, could be better understood (See Figure 1).

By knowing why people feel unbearable psychological pain and hopelessness in depression, the first step is taken toward preventing a million tragedies like John T. Doyle's jump every year. To better understand these issues, it is important to consider past research on the psychological aspects of depression, psychache, and the possible relationship of the theories behind them. By merging these two theories together, suicide as psychache and the cognitive theory of depression, a more universal understanding of suicide can lead to an operational form of treatment for suicide.

### **Cognitive Theory of Depression**

In the cognitive theory, there are three factors that interlock to cause a type of depression that can lead to suicide (Rush & Beck, 1978). Each piece has some responsibility towards causing depression where cognitive distortions, specific thinking errors deficient in logic, is the core element of change towards depression (Ilardi & Craighead, 1999; Pössel & Black, 2014). Although one piece, cognitive distortions, is the primary catalyst of change into a depressive

episode, the cognitive triad, negative views of self, future, and world, is one of the main parts which maintain the overall depressive syndrome (Rush & Beck, 1978).

Depression has become the staple aspect of suicide and is estimated to be a symptom in 40-70% of suicide completers (Davis, 1989). Beck's cognitive model of depression (1967) suggests that increasing suicidality may arise as an indirect consequence of the type of beliefs, expectations, and self-appraisals that depressed people experience, especially views about themselves, the world, and the future in general (Reinecke, 2000). Beck (1974) reformulated the past theories of depression into a usable model, *the cognitive theory of depression*, consisting of three parts: schemas, the cognitive triad, and cognitive errors.

**Schemas.** Of these three parts, a schema is a consistent way of interpreting the world given a set of situations. Schemas are the best explanation to why different people facing identical complex situations have dissimilar conclusions (Beck, 1970). Schemas are thought patterns that organize personal experiences by channeling them into cognitive structures and attitudes. In the theory of depression, schemas form negative and dysfunctional attitudes that may be rigid, dichotomous, and irrational views of the world (Beck & Rush, 1978). Wenzel, Brown, and Beck (2009) propose schemas account for the large range of differing thought patterns between people with suicidal thoughts. Maladaptive schemas can range harshly from person to person due to the pervasive and unconditional nature. One schema, "I am not loveable" could be actively differently from another's schema, "Unless I please others constantly, I do not deserve love," (Schmidt & Joiner, 2004). According to research, schemas that depressed and suicidal individuals use are only in effect during stressful events or during a depressive or suicidal episode (Abramson, Alloy, & Metalsky, 1990; Cohen, Test, & Brown, 1990; Pössel & Black, 2014).

**The cognitive triad.** The second part of this model is the cognitive triad. With these negative attitudes from schemas, the person's thinking and way of interpreting the world results in the idea that the future, the world, or the self is tainted beyond repair (Clark, Beck, & Alford, 1999). This is the view of oneself as defective, inadequate, or unworthy, the interpretation of ongoing experiences negatively, and the negative hopeless view of one's own future (Beck & Rush, 1978). This destructive way of thinking about one's self, future, and the world as broken, bad, or wrong beyond fixing creates a depressive attitude and poor self-image (Beck, 1976). This is supported by research that there is a tendency to have global, stable attributions about negative events (Joiner, 2000; Joiner & Rudd, 1995). This view of depression has been extremely useful as a way of thinking about hopelessness. For example, the cognitive triad has been strongly supported as the key mediator between depression and suicidality in adults (Beck et al., 1985, 1989; Beck, Steer, Beck, & Newman, 1993; Ellis, Green, Allen, Jobes, & Nadorff, 2012).

**Cognitive errors.** Lastly, cognitive errors are the systematic errors, disrupted thinking, or cognitive distortions of reality of the depressed person's thinking (Beck & Rush, 1978). For example, when the cognitive error of selective abstraction is used, the individual will take details out of context and proceed to view the quality of one's life on the basis of a single element (Beck & Rush, 1978). Overgeneralization, the slippery-slope of assuming one bad thing will lead to another, has been found to significantly distinguish between those with affective disorders versus behavioral problems for psychiatric inpatient adolescents (Messer, Kempton, Van Hasselt, Null, & Bukstein, 1994). Beck, Rush, Shaw, and Emery (1979) outlined seven specific types of cognitive errors typically found in the depressed population. Although quantifying the severity and the type of the cognitive error is important for treatment (Kuyken, Padesky, & Dudley,

2009), quantifying cognitive errors has not yet been functionally possible to measure until recently (Covin, Dozois, Ogniewicz, & Seeds, 2011).

When the concept of cognitive errors is further expanded, the theoretical concept mirrors nearly perfectly an aspect of the psychache model of suicide. The expansion by David Burns (1980) proved to be clinically useful by identifying ten thinking errors which could be separated into interpersonal and achievement domains (Beck, 1995; Clark et al., 1999). These ten cognitive errors typically referred to in clinical practice (Covin et al., 2011) play a large role in the cognitive theory of depression (Pössel & Black, 2014).

**The cause of depression in the cognitive theory.** The cause of cognitive depression is theorized as a stress-diathesis (Mann, Waternaux, Haas, & Malone, 1999) where stress can be anything from childhood trauma to psychiatric illness. Diathesis is simply the personal vulnerability towards suicide, hopelessness, and depression. Depression is thought to occur when the person's levels of stress overcomes the person. The determinant of what level of stress is necessary to overwhelm the person is referred to by diathesis (Metalsky & Joiner, 1992). As evidence supports, stress that happens as a result, even partially, from a person's own actions strongly interacts with the persons cognitive vulnerabilities (Flamenbaum & Holden, 2007; Shih, 2006). Bently's (1999) study of college students found that those who experienced a high number of stressful life events used poor hypothetical problem solving skills and had higher suicide ideation scores than those with lower levels of life stress but also had similar poor life problem solving skills. This research supported the stress-diathesis model as a causal factor to depression which in turn was a powerful predictor to suicide.

## **The Affective Theory of Psychache**

Shneidman's (1993) psychache theory of suicide departs from Beck's (1967, 1987) cognitive models because psychache is not defined by cognitions but by a subjective ability to tolerate and feel psychological pain. Primarily through self-report measures, evidence has supported that psychache is at least of equal importance as depression and hopelessness for statistically predicting suicide risk while still being distinct from those two variables (DeLisle, 2007; Delisle & Holden, 2009; Flamenbaum & Holden, 2007; Holden & Kroner, 2003; Johns & Holden, 1997; Orbach, Mikulincer, Gilboa-Schechtman, & Sirota, 2003; Troister, 2009; Troister, Davis, Lowndes, & Holden, 2013; Troister & Holden, 2010, 2013). Research has also found that high levels of psychache are effective in detecting current suicidality after studying a family which lost several members progressively as a result of suicide (Pompili, Lester, Leenaars, Tatarelli, & Girardi, 2008). Edwin S. Shneidman, founder of the American Association of Suicidology (AAS) and considered the father of suicidology (Leenaars, 1998, 2010), theorized that every suicide was an answer to a problem. The problem would always have three aspects: 1) press- the person's interactions and genetic makeup, 2) psychache- psychological pain from the world, and 3) perturbation- from the pain feeling a shrinking of available options to avoid pain (Shneidman, 1993). By this model, Shneidman's (1996) theory of suicide as psychache saw suicide's purpose to be the avoidance of a problem. The problem, to Shneidman, would always consist of the combination of three components: press, pain, and perturbation.

**Press.** Press, or pressure, to Shneidman (1993), is how the inner and outer worlds impinge on, move, and are positively or negatively interpreted by the person. This has to do with how the world comes to physically and emotionally affect the person, within the context of the individual's genetic predisposition towards negative affective states. Press felt in a suicidal

person comes from the stress of the world as the result of unmet psychological needs. Press is essentially the stress from the outside world causing a person to feel internally compressed or entrapped (Shneidman, 1993). A person who just learned he has a terminal illness would have considerable press. The press refers to both the feeling associated news as well as the actual news itself.

**Psychological pain.** Pain as part of this model refers to the unbearable psychological pain of psychache seen as the product of thwarted psychological needs. Psychache is referred to as the hurt and mental anguish that becomes exceedingly agonizing for the person. The all-encompassing darkness of the pain becomes a totalitarian force in the person's ability to make choices free from the pain. The mental anguish of psychache is the kind of pain that points the person to logically conclude a cession of consciousness is better than living with the current level of misery and hurt. The pain itself perturbs the person to the level that it creates the feeling that there will be a perpetual pain. Suicide in this model is viewed as a release of this pain (Shneidman, 1993) from which the escape theory of suicide is conceptually based (Baumiester, 1990). Recent evidence shows that psychache can be a strong predictor of suicide ideation, attempts, and completion (Lester, 2000; Keefer, Holden, and Gillis, 2009; Olié, Guillaume, Jaussent, Courtet, & Jollant, 2010). Similar to a calculated opportunity cost, the threshold for this psychological pain is reached when the pain becomes unbearable so that the pain of dying becomes less than the pain of living with psychache (Shneidman, 1993).

Psychache is comparable to intense negative affect of internal states such as anguish, hurt, angst, humiliation, or otherwise negative emotions, which are experienced as psychological pain. Psychache, like intense negative mood, paints the world with "black-tinted glasses" for the person experiencing the mental pain. In the affective theory, psychache is the final deciding

factor for suicide (Shneidman, 1993). If part of depression is living in a black endless void, psychache is living in a blinding intolerable glare of light and noise.

**Perturbation.** Lastly, part of Shneidman's (1993) theory of psychache as suicide is the emphasis of perturbation as the reduction and constriction of the individual's perception of choices. This model views the suicidal individual's perception of choices to eventually reducing their available options down to only one choice, suicide. Being perturbed is the feeling that the pain from the world is constant and will never change. Consequently, the feeling that the world is solid, rigid, and painful leads the person to conclude they have ever smaller range of select, inflexible, and painful options. If the whole world a person ever knew was a painful world, the concept of perturbation concludes the person would believe the only options open to himself will also be painful (Shneidman, 1993). When considering the suicidal individual's view that their perception of available choices is being reduced, it is important to consider the type and severity of the perturbed view of limited choices (Flamenbaum & Holden, 2007; Holden & DeLisle, 2006; Shneidman, 1999), mirroring again the cognitive errors aspect of the cognitive model of depression discussed earlier. This perception of choices being narrowed is taken into context of the other parts of this model such as the view that their pain with living and the pressures from expectations of the outside world is greater than their tolerance or want to keep living in such a world (Holden & Mcleod, 2000; Motto, 1992).

**Causes for the affect theory of psychache.** Shneidman (1996) summarizes the cause of psychache as many unmet basic psychological needs outlined by Murray (1938) in his book. Shneidman (1998) reduced this list down to five primary needs for practical purposes, succorance/affection, autonomy, affiliation, nurturance, and dominance/competence. These five Shneidman (1998) viewed as the most relevant to suicide if left unmet, as they would cause the

most pain and different forms of psychache. After quantifying these needs, researchers of psychache have been able to verify these unmet needs significantly correlate with psychache in college students. The questionnaire used in these studies compared the students' self-reported ideal level of each basic need subtracted from their actual level (Delisle, 2007; Flamenbaum & Holden, 2007; Munchua, 2003). From this notion, Shneidman (2001) postulated that every human act is intended to fulfill a basic human need.

The perception that unmet needs causes pain is similar to the well-known theory of self-determination. This theory postulates that a person's well-being is the result of thwarted and frustrated needs and the meeting of basic psychological needs such as autonomy, relatedness, and competence (Deci & Ryan, 1980) fosters immediate well-being (Deci & Ryan, 2000). Evidence has also been found to support the theory that unmet needs relate to depressive symptoms and self-critical perfectionism (Vansteenkiste & Ryan, 2013), even across cultures (Chen et al., 2014). As further evidence to the usefulness of considering unmet needs, Van Orden et al. (2010) were able to construct the interpersonal theory of suicide by purposefully condensing of Shneidman's five primary needs down to two primary elements to every suicide, thwarted belongingness and perceived burdensomeness (Joiner, 2005), which has had strong empirical research to back the effectiveness of this model (Baumeister & Leary, 1995, p. 1; Ribeiro, Bodell, Hames, Hagan, & Joiner, 2013; Joiner et al., 2002; Silva, Chu, & Joiner, 2014).

### **Overlap of Cognitive Model and Affective Model of Psychache**

Although Shneidman's psychache model emphasizes the affective rather than Beck's cognitive factors as central to suicidality, the theories do have considerable overlapping ideas.

**Unmet needs and the stress-diathesis.** Because of the consistent evidence already stated, there is a good empirical foundation that unmet needs are causal to psychache and

ultimately suicide ideation (Silva et al., 2015). Conceptually, unmet needs as the cause of psychache and the stress-diathesis as the cause of depression are nearly identical. For example, any unmet need can be considered a stressor, such as an unmet need to feel affection or belonging could be viewed as a stressor of loneliness while the diathesis is the person's vulnerability towards feeling loneliness and to respond in behaviorally and cognitively maladaptive ways, such as never socializing.

As an example, affectively one person's need for achievement may be characteristically high. As a consequence that individual feels like a failure, like the need for achievement has been unmet. The person's innate traits make that person feel they have not accomplished enough in life, where "enough" is a standard preset by the person's experience with the environment. To the extreme, even a person who has solved the problem of world hunger may still feel unaccomplished if that individual's personal need for achievement is higher than this accomplishment. Similarly, in the stress-diathesis, one person may be stressed by his or her lack of achievement in life. The person may have a diathesis for easily feeling stressed by lack of achievement or distressing moments revolving around personal failure. Even if the person solved world hunger, the individual's diathesis towards stress around personal failure may be so strong that this great achievement would be not be enough to relieve that individual's stress around personal failure. The stress-diathesis is preset in the person based off of the accumulation of their past stressors building on top of each other and their personal ability to cope with those stressors. In both cases, the person is under duress because of an internal characteristic revolving around a sense of accomplishment.

**Perturbation and cognitive errors.** As part of Shneidman's (1993) theory of psychache as suicide, he places an emphasis on perturbation as the reduction of the individuals perception

of choices. This model understands the suicidal individual eventually reducing options down to only one choice, suicide. This model is very similar to Aaron Beck's (1967) model of cognitive theory of depression, which includes several cognitive errors. An example is the cognitive error of selective abstraction, which takes details out of context and views life as a whole on the basis of the single element (Beck & Rush, 1978) carries many of the same elements as perturbation of the person's perception. Although conceptually these two constructs are nearly identical, there is no empirical research supports this notion.

As an example, for various reasons, a person may feel that they have no choice but to go through life feeling unbearable pain. Discouraged by this constant pain, the person will eventually become perturbed, only seeing two choices. Those two choices would be to continue with the pain or end the pain through suicide. Equally, the same person can be viewed through the cognitive lens as having a cognitive error that can be reduced down to the thought, "Life is nothing but unbearable pain." For both of these views, the person remains the same and the affective and cognitive views simply have different nomenclature used for the same concept with the same antecedents and behavioral, cognitive, and affective consequences.

**Press and schemas.** Furthermore, there is the overlap of the press aspect of the theory of psychache and the schema aspect of the cognitive theory. Functionally, press is similar to schemas in the cognitive theory. As a consequence of the world impinging and pushing the person, press, causing stress, schemas and negative thought patterns are activated (Beck et al., 1979).

In the sense that a schema is a stable pattern of processing a situation or event, such as "Since I was bad at this, I am not perfect in all things, therefore I'm a complete failure" (Beck & Rush, 1978), press is also the view, real or imagined, that the world is impinging on the person

making them stressed or view themselves, the world, and the future in the light of a small life event. This in principle is the same as the schema that may be as such, “Based on this one event, I was dealt bad hand in life so I’m going to fold” or, “My life has already been messed up this much by addictions. If I can’t get my next fix, death would be the best option for me.” Press is forces from the world that help or hinder the person attain a fundamental need.

Wenzel, Brown, and Beck (2009) suggest that the activation of several negative schemas accumulates to activate a suicidal schema. The suicidal schema will create either an experience of hopelessness about the future, the perception that the current situation pressing on the person is unbearable, or both. Conceptually, a suicidal schema can include the press of being enveloped in the hopelessness of the future. Because of the continuous hopelessness and other aspects of the schema, such as filtering out positive events, the person with a suicidal schema activated does not take actions to meet psychological needs. As a consequent of not taking actions to meet psychological needs, press occurs.

A person who meets a friend randomly walking down the street may greet that person. The friend may walk past without acknowledging the greeting. Press, in this situation, is the force of being ignored which stifles the person’s need for affiliation and infavoidance. Schemas are preset ways of thinking, preconceived notions, of the world which are activated. When the senses absorb new knowledge, the information is organized using the schemas. In the same situation, after been passed by a friend on the street, a person may activate the schema that they feel they are not worth acknowledging or are embarrassing to be seen with in public. Both explanations of the same scenario reach the same conclusion through nearly identical methods of viewing internal commentary. The person will be in an aversive negative state because of the way the person naturally interprets the outside world around him.

**Perturbation and perfectionism as cognitive error.** Further evidence of the conceptual overlap of these theories comes from research on the topic of perfectionism which has been modeled as part of the cognitive errors component in the cognitive model (Beck & Rush, 1978) and a perturbation in the psychache model (Shneidman, 1993). Similar to the way that perfectionism is theoretically a cognitive error, and part of the overarching theory of distorted thinking, and perturbation can have some of the same cognitive overlaps. An example of this overlap is that perfectionism could be seen as perturbed thinking in the psychache model or a cognitive error in the cognitive depression model (Flamenbaum & Holden, 2007). Some forms of perfectionism have been associated with suicidality with psychache as the mediating effect (Beevers & Miller, 2004; Flamenbaum & Holden, 2007; Rasmussen et al., 2012) as well as other traits that have been highly correlated with psychache alone (Flett, Hewitt, & Heisel, 2014; Wang, Wong, & Fu, 2013) and with the stress-diathesis model (Hewitt, Caelian, Chen, & Flett, 2014). If this evidence is accurate, the generalization of perfectionism as a major cognitive error and measured perturbation in psychache could also be associated with suicidality. The theories each have a causal nature where there is also a mediator, perfectionism research, which has evidence to be an antecedent to both theories (See Figure 2).

The purpose of reviewing these concepts' similarity was only to substantiate useful information towards operationalizing the knowledge into treatment implications. As discussed, research on perfectionism, which is effectively identical to cognitive errors, has been correlated with psychache and suicide ideation. Because these two theories overlap conceptually, it is not a stretch to think that the other aspects would operationally be identical as well.

### **Treatment Implications of Overlapping the Theories**

In their understandings of suicidality, these two theories have been the foundation of several methods of engaging suicidal individuals. For example, the psychological aspects of suicide presenting as psychache intuitively would mean the person's pain should be addressed (Jobes, 2013; Jobes & Nelson, 2006; Shneidman, 1993; Van Orden et al., 2010) while the cognitive view of hopelessness/helplessness in depression suggests the cognitive faults need to change in order to reduce suicidal risk (Abramson et al., 1998; Beck, Brown, & Steer, 1989; Beck, Steer, Kovacs, & Garrison, 1985; Burns, 1993).

Fitting the pieces together, even though it is recognized that these are distinct pieces of suicidality (Troister, 2009; Troister, & Holden, 2012), the base of knowledge of why a person would experience feelings and cognitions such as hopelessness in depression and psychache, has continued to develop from Maslow (1943) to the interpersonal theory of suicide (Van Orden et al., 2010).

### **The Present Study**

If the cognitive theory of depression and psychache theory of suicide overlaps operationally, a person who has many of the three major causes of suicide in the cognitive theory will also have unmet psychological needs and depressive symptoms along with psychache and press. Consequently, this will result in suicide ideation, (See Figure 3). This study was designed to assess participants' severity on each aspect of the cognitive and affective theory that was then compared to their measured suicide ideation. It was expected that:

Hypothesis 1: Unmet psychological needs and the stress-diathesis would correlate.

Hypothesis 2: Press and schemas would correlate.

Hypothesis 3: Perturbation and cognitive errors would correlate.

Hypothesis 4: Psychache and cognitive triad would correlate.

Hypothesis 5: Unmet psychological needs and the stress-diathesis would overlapped with the three aspects of each theory, press, psychache, perturbation, the cognitive triad, schemas, and cognitive errors as a whole including how they relate to suicidal ideation.

Hypothesis 6: Together, the six aspects of the theories would be a better predictor of suicidal ideation than any single aspect or one theory alone.

## **Method**

### **Participants**

The sample consisted of 427 undergraduate students (334 females, 92 males, 1 agender) from a university in the Northwest US after 47 participants were removed. Mean age was 20.47 years (range 18-55;  $SD = 5.07$ ). Consisting of 41% of the sample, 175 students, indicated that someone close to them had completed or attempted suicide (See Table 1). Consisting of 9% of the sample, 37 participants, indicated they had attempted suicide in the past themselves with 1.8 average attempts.

### **Measures**

*Demographic questionnaire.* A basic questionnaire, created by this author, was administered to assess participant demographic information. Questions also included information about drug and alcohol use and if the participant had previously attempted suicide. Within the demographic questionnaire, press was measured using a single question, “Rate external pressures and stressors in your life” on a 5-point Likert-type scale where 1 is low pressure and 5 is high pressure.

*The Psychological Needs Questionnaire (PNQ; Munchua, 2003).* The PNQ is a 35-item self-report questionnaire used to assess an individual’s unmet psychological needs as seen by the individual. Each item asks the individual to rate certain needs the participant actually possesses

and ideally like to possess. An example of this would be the first item, asking the participant to rate “ambition to succeed.” Responses range on a Likert-type scale of 1 (slightly) to 4 (extremely) for each item. The scores of what they would ideally possess were subtracted from what they identified as what they actually possess, with a possible range of -105 to 105. The PNQ has good validity correlating moderately with measures of hopelessness and depression. The PNQ has shown reliability with a coefficient alpha of .82. The PNQ showed excellent internal consistency with a Cronbach’s alpha of .91 for the current study.

*Interpersonal Needs Questionnaire (INQ;* Van Orden, 2009; Van Orden, Cukrowicz, Witte, & Joiner, 2012) The interpersonal theory questionnaire focuses on the sum of 5 unmet psychological needs critical to suicidality into 2 areas, thwarted belongingness and perceived burdensomeness (Joiner, 2005). The INQ is a 15-item scale on a Likert-type scale of 1 (Not at all true for me) to 7 (Very true for me). The scale has items such as, “These days I think I am a burden on society.” Scores can range from 15 to 105, where higher scores are most pertinent when there is an interaction of high scores in both areas, thwarted belongingness and perceived burdensomeness. The INQ has shown good validity and correlates moderately with scales measuring depression and suicidal ideation. Internal consistency coefficients were found for the areas of thwarted belongingness and perceived burdensomeness where the Cronbach’s alphas were .85 and .89, respectively (Van Orden, Witte, Gordan, et al., 2008). The INQ had an excellent internal reliability for the current study with a Cronbach’s alpha of .93.

*Cognitive Distortion Scale (CDS;* Covin et al., 2011) The CDS is a 20-item self-report questionnaire that measures the person’s use of the 10 common cognitive distortions in depression in the areas of interpersonal relationships and achievement. The questions describe a cognitive error, then provide examples of how the error could be used in an interpersonal

relationship and a scenario where personal achievement is involved. An example of a question assessing a common cognitive distortion is overgeneralization. The question gives a description, “When a negative event occurs, people might assume more bad things are going to happen. They see the negative event as the start of a pattern.” It then gives scenarios which a person may use that kind of thinking, such as, “William recently failed his math exam. He thinks to himself: ‘I’ll probably fail the exams in my other courses as well.’” The participants are then questioned how often they estimate they use of that version of thinking. Answers are measured on a 7-point Likert-type scale of 1 (never) to 7 (all the time), with a possible range of 20 to 140. The measure shows good validity correlating with measures of depression, anxiety, and dysfunctional attitudes in past research. The Cronbach’s alpha at the scale’s developmental study was .85. The CDS showed excellent internal consistency with a Cronbach’s alpha of .92 in the current study.

*The Brief Core Schema Scales (BCSS, Fowler et al., 2006)* The BCSS is a 24-item self-report questionnaire concerning beliefs about the self and others. The scale has a 5-point Likert-type scale scored from 0-4. There are 4 scores obtained from the scale. Each of the 4 scores is averaged from 6 items measuring negative-self, positive-self, negative-others, and positive-others. The scale was intended to measure positive and negative evaluations of the self and others as negative or positive schemas exist within a person. The first item has the prompt, “I am unloved.” The individual is then prompted to indicate in a dichotomous “no or yes” format. If they indicate yes, they are given options of how strongly of a “yes” they held that belief. The participant’s options for “yes” were numbered 1 to 4 with wording, believe it slightly, believe it moderately, believe it very much, and believe it totally. The scale has shown good validity and has been shown to correlate with scales measuring anxiety, depression, grandiosity, self-esteem, and paranoia. The alpha coefficients for the study were .78 and .84 for positive self and positive

others, respectively, in its developmental study of a non-clinical population while it there was an Cronbach's alpha of .86 and .88 for negative self and negative others, respectively. The BCSS showed good internal consistency with Cronbach's alpha coefficients for each subscale  $< .80$  in the current study.

*Negative Life Events Questionnaire (NLEQ, Metalsky & Joiner, 1992).* The NLEQ is a 64-item self-report scale designed specifically for the use with college students. The questions are intended to measure the amount of stress the participant is under and how well they are coping with that stress. Questions fall into various categories that may be a cause of stress on the typical college student such as work, school, roommate, and romantic partner. The scores are measured on a 5-point scale ranging from 1 (Never) to 5 (Always) and 5 dichotomous yes-no questions. The 5 dichotomous questions were scored where "no" was a 1 on the scale and "yes" was scored as if it were a 5 scale. Scores can range from 64 to 330 with the higher score translating to greater feelings of stress. The validity of the INQ has been demonstrated in past research on effects of stress towards vulnerability (Hankin, Abramson, Miller, & Haefffel, 2004; Metalsky & Joiner, 1992; Seeds & Dozois, 2010). The coefficient alpha of .96 shows the excellent internal reliability with this measure in the current study and .82 in a past study.

*The Psychache Scale (Holden et al., 2001)* is a 13-item measure of the intensity of psychache on a 5-point scale with a range of total possible scores of 13 to 65. This scale is the most common way to assess for psychache in a research setting. The scale of possible answers range from 1 (Never) to 5 (Always) for questions 1 through 9. For questions 10 through 13, the scale changes to 1 (Strongly Disagree) to 5 (Strongly Agree). Following a description of psychological pain, the questionnaire asks about feelings of emptiness, psychological pain tolerance, and internal aching. An example of a question following the description is, "I feel

psychological pain.” The scale has shown excellent validity in past studies by correlating with scales of sexual abuse, depression, hopelessness, self-injury, suicidal ideation, suicide attempts, and perturbation. The scale has shown to have reliable coefficient alpha of .94. The Psychache Scale had Cronbach’s alpha of .96 in the current study.

*Beck Depression Inventory-II (BDI-II;* Beck, Steer, & Brown, 1996) The BDI-II assess the individual’s negative thoughts about themselves, the future, and the world. Although the scale was designed to measure depressive symptoms, it has items that are evaluative of the cognitive triad. The BDI-II standardized 21-item self-report questions are rated on a 4-point scale, ranging from 0 to 3 given the past 2 weeks. The items consist of questions about the symptoms of depression such as sadness, crying, and loss of pleasure. An example includes the title sadness with the four options given, “I do not feel sad, I feel sad much of the time, I am sad all the time, and I am so sad or unhappy that I can’t stand it.” Considering the validity of the scale, the BDI-II has a cutoff score of 18, correctly classifying 92% of patients with major depressive disorder. The BDI-II had excellent internal reliability with a Cronbach’s alpha of .95 in the current study and a coefficient alpha of .91 the past.

*Scale for Suicide Ideation (SSI;* Beck et al., 1979) The SSI is a 19-item self-report questionnaire intended to measure the intensity and frequency of suicidal intent and thought. The answers are rated on a 3-points scale, ranging from 0 to 2, with questions regarding suicidal preparation, thoughts on feelings on ending their life, and desire for any attempt to end their life. One question asks the participant, “Do you anticipate that you will ever make an actual attempt to end your life?” There are three options to answer the question, “No, I don’t know or I am not quite sure, and Yes.” The scale has been shown to be valid by correlating between common measures of self-harm and through comparing scores of those with clinical depression to 90

patients hospitalized for suicide ideation. The coefficient alpha has been shown to be .90 in the past. The range of possible scores is 19-57, with the Cronbach's alpha of .84 for the current study.

*Reasons for Attempting Suicide Questionnaire (RASQ;* Holden & DeLisle, 2003; Holden, Kerr, Mendonca, & Velamoor, 1998; Holden & McLeod, 2000) The RASQ is a 14-item self-report scale to measure perturbation by assessing the possible motivations for suicide. The questions are categorized into 2 areas, internal perturbations and manipulative motivations. These 2 categories were combined to give a single score for the scale. The 5-point Likert-type scale ranges from 1 (completely disagree) to 5 (completely agree), with questions asking why they might ever consider a suicide attempt in regards to reasons such as, to frighten someone or to escape from an impossible situation. The range of the scale goes from 14 to 70. Two questions asks the participant how much they agree with the following statement regarding why the individual might consider an attempt to end their life, "Show how much I love someone," and, "To get relief from a terrible state of mind." The scale has good validity correlating moderately with scales of hopelessness, depression, suicidal desire, and psychache. The scale has had coefficient alphas of .80 and .70 for the areas of internal perturbation and manipulative motivations, respectively (Holden & DeLisle, 2003). The internal reliability was excellent where the Cronbach's alpha was .91 for the current study.

### **Procedure**

Professors during the during the Fall 2015 academic period informed their students that they could choose to participant in research for extra credit. The students were given instructions on how to sign up for studies and the amount of extra credit they could receive. The participants signed into SONA, a cloud-based subject pool software system, which allowed participants to

select from various studies available to take anonymously online. The software then hyper-linked to the study hosted at qualtrics.com. Participants were shown the information sheet first. After this, participants were presented part 1 of 2 of the demographic questionnaire. To reduce priming effects, the order was as follows: PNQ, INQ, CDS, BCSS, NLEQ, The Psychache Scale, BDI-II, SSI, and RASQ. Lastly, participants were presented part 2 of 2 of the demographic questionnaire. The study took approximately 45 minutes to complete. Participants received research credit points in their undergraduate classes for their participation. This study was approved by Internal Review Board consistent with American Psychological Association standards for ethical research.

## **Results**

Means, standard deviations, and range for each scale used are presented in Table 2. Based off of a exploratory measurement of 5 individuals instructed to, "Complete the survey as quickly as possible without skipping questions," surveys taken in less than 9 minutes were more likely than not to be inaccurate self-reports. The data of these 5 individuals was not used in analysis. Before any analysis, the data of 47 participants was removed because those individuals completed the survey in less than 9 minutes or answered less than 25% of the total questions in the survey. Participant questionnaires with more than 15% of the questions unanswered had their questionnaires removed from the data. Mean item substitution was used when participant's questionnaires had less than 15% of the questions unanswered. As a result of this rule, 22 participants results had the PNQ removed. The total result of these rules was a data set of 427 participants with only, 405 having completed the PNQ.

## **Correlations**

As expected, many of the constructs of the affective and cognitive theories of suicide correlated with each other (See Table 3). Between the two theories, the two concepts that correlated the most were psychache and the cognitive triad, as measured by the psychache scale and the BDI ( $r = .81, p < .001$ ). There was a positive correlation between the SSI and the questions, “Have you ever attempted to end your life?” and “Has someone(s) close to you ever attempted or completed suicide?” ( $r = .40, p < .001$ , and  $r = .20, p < .001$ , respectively).

As the first hypothesis states, unmet psychological needs and the stress-diathesis correlated. Unmet psychological needs, as measured by the INQ and PNQ, and the stress-diathesis, as measured by the NLEQ, correlated significantly between the INQ and NLEQ, ( $r = .15, p = .003$ ). Of all the concepts hypothesized to overlap, the scales that were correlated the least were the NLEQ and the PNQ ( $r = -.04, p = .424$ ). The INQ and PNQ, intended to measure the same concept, correlated positively where  $r = .10, p = .048$ .

Consistent with the second hypothesis, there was a correlation between press and schemas. Press correlated positively with each of the two subscales of the BCSS related to negative schemas, negative self schemas and negative others schemas where  $r = .30, p < .001$ , and  $r = .06, p = .057$ , respectively. Press correlated negatively with each of the two subscales of the BCSS related to positive schemas, positive self schemas and positive others schemas where  $r = -.32, p < .001$ , and  $r = -.21, p < .001$ , respectively. When the two positive BCSS scales are reverse scored and averaged with the two negative BCSS scales to create a single average score instead of four separate averages, the BCSS correlated with press at a statistically significant level where  $r = -.32, p < .001$ .

As anticipated by the third hypothesis, there was a correlation between perturbation and cognitive errors. Perturbation, as measured by the RASQ, and cognitive errors, as measured by the CDS, had a positive correlation at a statistically significant level where  $r = .32, p < .001$ .

As stated by the fourth hypothesis, psychache correlated with the cognitive triad. Psychache, as measured by the psychache scale, and the cognitive triad, as measured by the BDI-II, had a positive correlation greater than any other two scales where  $r = .81, p < .001$ .

### **Regression Model**

As expected by the fifth hypothesis, unmet psychological needs and the stress diathesis overlapped with the other three aspects of the cognitive and affective theory and suicidal ideation. The PNQ, INQ, and NLEQ as the first block within the hierarchical multiple regression analysis also were statistically significant standard coefficients as they related to suicidal ideation where  $\beta = .134, t(397) = 3.077, p = .002, \beta = .281, t(397) = 6.416, p < .001,$  and  $\beta = .360, t(397) = 8.255, p < .001$  respectively. There was an average correlational strength between the scales used in the affective theory and the cognitive theory of  $r = .30$ .

The average correlation between the SSI and all the cognitive theory scales was  $r = .38$ , while the affective scales was  $r = .37$ . The average correlation between the two theories and suicidal ideation was  $r = .38$ . The average correlation between all of the cognitive theory scales was  $r = .31$  while between all of the affective theory scales was  $r = .22$ .

As anticipated by the sixth hypothesis, the six aspects of the theories were a better predictor of suicidal ideation than any single aspect or one theory. A hierarchical multiple regression analysis was used in order to parse out the predictive variables of the cognitive and affective theories of suicide. Tests regarding the assumptions of collinearity showed that multicollinearity was not a concern where tolerance was greater than .10 and the variance

inflation factor was less than 10 for all scales. A two block model was used to determine which of the predicative constructs were weighted more heavily on the variance in suicidal ideation scores. The blocks were ordered so that the theorized precursors were in the first block, PNQ, INQ, and NLEQ, followed by the consequences of those precursors in the next block, CDS, BCSS, BDI, ACHE, RASQ, and Pressures. The dependent variable in both blocks was the SSI measuring suicidal ideation. This ordering was to not violate the causal priority of hierarchical multiple regressions (Petrocelli, 2003). In theory, the initial precursors include the unmet psychological needs as well as a stress-diathesis and were placed in the first block. The next block was the theoretical consequences of these initial precursors, press, negative schemas, perturbation, cognitive errors, psychache, and the cognitive triad.

The results of the hierarchical multiple regression analysis suggests that a significant proportion of the total variance in suicidal ideation can be predicted by the combined use of the cognitive and affective theories of suicide where  $R^2 = .41$ ,  $F(8,393) = 34.69$ ,  $p < .001$ . Additionally, the cognitive theory alone where  $R^2 = .33$ ,  $F(6,419) = 28.84$ ,  $p < .001$  was a worse predictor than the affective theory alone where  $R^2 = .40$ ,  $F(5,399) = 49.83$ ,  $p < .001$  but they were better predictors when both theories were used to predict suicidal ideation. Approximately 33% of the variation in suicidal ideation was predicted by cognitive theory, 40% by the affective theory, and 41% by both theories combined. According to Cohen (1986), this suggests a large effect. As hypothesized, the small change in predictive power from combining the two theories suggests that there is a large percentage of overlap between the two theories. Based off of the analysis, 31% of the predictive powers from the affective and cognitive theories overlap. This leaves only a small proportion of the variation explained by the theories that does not coincide with the other theory, 9% from the affective theory and 1% from the cognitive theory. The small

part of the variance from each theory that cannot be explained by the other theory suggests the constructs in each theory coincide a majority of the time. A comprehensive table of the analysis of each theory and the two theories combined can be found in Table 5.

This test was completed 3 separate times, once with only the scales related to the cognitive theory, once with only the scales related to the affective theory, and once with all the scales from both theories. Each theory added a larger portion of understanding to variance in suicidal ideation in the college aged population. When the results were compared, it was found that together the theories did have some variance the other theory could not account for through its own scales. The initial precursors supported the hypothesis by predicting the variance in participants' suicidal ideation,  $R^2 = .30$ ,  $F(3,401) = 56.91$ ,  $p < .001$ . The second block, as the theoretical consequences of the initial precursors, were also statistically significant predictors of the variance in suicidal ideation where  $R^2 = .41$ ,  $F(8,393) = 34.69$ ,  $p < .001$ . The first block, consisting of each theories precursors, only overlaps 13% while they account for 30% of variance in suicidal ideation scores between the two theories combined. 15% of the variation by the cognitive theory alone while the affective theory alone accounted for 28% of the variation in suicidal ideation scores. This means that the affective theory's precursors accounted for 15% more variance than the cognitive theory. Likewise, the cognitive theory accounted for 2% more variance than the affective theory.

In order to ensure that one or two of the scales was not accounting for the majority of the theory's statistical power for predicting the suicidal ideation scores, the betas of every scale were reviewed. Upon the review of the scales' betas it was found that nearly all the scales were statistically significant without much variation in the standardized coefficients' betas. This would suggest that one theory or scale is not completely superior at accounting for the variance or

scores of suicidal ideation. All the scales were statistically significant coefficients of suicidal ideation at predicting suicidal ideation scores, with three exceptions (See Table 4). The PNQ and BDI were not significant coefficients as part of the second block where,  $\beta = .027$ ,  $t(393) = .878$ ,  $p = .380$ , and  $\beta = .045$ ,  $t(396) = 1.279$ ,  $p = .202$  respectively. The third exception was the BCSS with its four subscales. When the two negative BCSS scales are reverse scored and averaged with the two positive BCSS scales to create a single average score instead of four separate averages, the Beta of the BCSS scale coefficient is greater but not significant where  $\beta = -.049$ ,  $t(396) = -1.828$ ,  $p = .068$ . The PNQ as a weighted precursor was also not statistically significant while the INQ, measuring the same construct, was the scale that had the highest Beta coefficient where,  $\beta = -.001$ ,  $t(401) = 1.419$ ,  $p = .157$  and  $\beta = .121$ ,  $t(401) = 8.463$ ,  $p < .001$ , respectively.

## **Discussion**

The purpose of this study was to determine whether two theories of suicide could be conceptually combined to produce a deeper understanding of suicide. More precisely, if the cognitive and affective theories of suicide have similarities, it would open the possibility of creating better safety plans, risk assessments, and improved emergency response interventions from the deeper understanding of suicide.

### **Overview of Findings**

The first hypothesis was regarding the overlap of unmet psychological needs in the affective theory and the stress-diathesis in the cognitive theory. The correlation between one of the scales measuring unmet psychological needs and the stress-diathesis was not statistically significant, the PNQ and NLEQ. The other scale measuring unmet psychological needs, INQ, correlated at a statistically significant level with the NLEQ, a measure of the stress-diathesis. This would

suggest there was a positive relation between college-aged student's feelings of unmet psychological needs and the stress-diathesis. This data supports the notion that the two theories overlap in a useful way. This data supports that using these concepts in parallel to one another can help bring a fuller understanding of suicide can manifest itself overtime.

Because the PNQ did not correlate at a statistically significant level, it also suggests that there is something else affecting the results. The PNQ contributed very little to predicting the variance in suicidal ideation, correlated the least of any scale with the other scales, and many participants did not complete the survey correctly. The INQ, intended to measure only a few of the unmet psychological needs, rather than a many different aspects, was the biggest contributor. This may suggest that some of the unmet psychological needs are less important than others in predicting suicidal ideation in college students. Furthermore, the fact that 22 sets of data of the PNQ had to be removed may be a symptom that the scale was too complex of a scale to be administered online or was adapted to its online format poorly. This may suggest that the current study's method of administering the PNQ in an online format is flawed. As further evidence for this idea, online administration is not a common way of using the PNQ (DeLisle, 2007; Munchua, 2003).

The second hypothesis concerned the correlation between press and schemas. The negative correlation between the scale used for schemas, BCSS, and the single question used to measure press was statistically significant. The BCSS correlated significantly with the single question of how much press a person is experiencing. This proposes that there is a negative relationship between a college aged person's feelings of press on their life as well as their positive schemas about themselves and others. It could be further inferred from the correlational data that there is a positive relationship between their negative schemas about themselves and others and feelings of

press in their lives. This means that press and schemas could be thought of as the same concept and can be measured as such. This is another piece of evidence that the two theories overlap. The implications of this research should focus future research on determining if there is a causal property between these two constructs as well. This data suggests further connection between the two theories of suicide as a whole between two of their variables.

The third hypothesis addressed the association between perturbation and cognitive errors. The measurement for the cognitive errors, the CDS, and for perturbation, the RASQ, correlated positively. This indicates that there is a relationship between the two constructs in the college aged population. The research of future studies should hone in on the effects of reversing cognitive distortion, in therapeutic settings and everyday life, in order to help negate their negative effects, especially as it may change levels of perturbation. This connection of constructs promotes the concept that the two theories of suicide have pieces that interlock or overlap in a way which clinicians and researchers can use to improve current theory and models of suicide.

The fourth hypothesis concerned the correlation between psychache and the cognitive triad. The psychache scale and the BDI-II were positively correlated, which suggests that there is a relationship between the two independent constructs. It may even suggest that the two constructs are dependent on another underlying factor, that the two constructs are measuring the same paradigm, or that there is significant overlap in the two constructs from a causal property of one of the concepts that can create a similar presentation as the other construct's product. With these constructs also correlating, all the constructs within each of the theories correlate with a construct from the other. This adds more confirmation that there is overlap between each of the theories in several different aspects.

The fifth hypothesis addressed the theories' precursors of unmet psychological needs and the stress diathesis correlating to the theory's consequences of stress, psychache, perturbation, the cognitive triad, schemas, and cognitive errors as a whole. The analysis supports that most of the theorized precursors could lead to the theorized consequences as they relate to suicidal ideation. The correlational data suggests there is some relationship between them as well. While they may not be similar in every aspect, as they relate to suicidal ideation the overlap makes them functionally identical in real world application of either theory. This could mean that the theories are correct in the order in which they present the precursors and consequences. Functionally, the data would suggest that the best interventions may work primarily with these precursors in the general populous and with a clinical sample. More research is needed to find the how the causal properties of the theories interact and how targeted interventions and preventative measures could be best focused.

The sixth hypothesis addressed that the theories together would be a better predictor of suicide ideation than any single aspect or one theory alone. The main method which this theory was tested was through a hierarchical multiple regression analysis with suicide ideation as the dependent variable. Although they did not overlap considerably when only using the precursors of each theory, this difference was negated when all aspects of each theory were combined. This may suggest that although the precursors to each theory themselves may not overlap it is accounted for later by the variance in other measures. The further evidence for this proposal is that the precursors do not correlate very strongly with each other but do correlate strongly with some of the other aspects within the other theories. Although some constructs had more statistical power, the variation from scale to scale was too great enough to suggest one construct is not completely superior at accounting for the variance in suicidal ideation. Furthermore, it

suggests that combining these two theories could lead to better outcomes overall when put into practice. The knowledge that these two theories be related in several different aspects means that other theories should be reviewed on how the overlap conceptually. This, and future studies, can then support the creation of having a unified theory of suicide.

### **Limitations**

There were several limitations of this study including the nature of the population sample. This study only recruited college students who then also exerted themselves to get extra credit in their psychology courses. Having only college-aged students, who were mostly female, hinders the ability to generalize this data to a clinical or general population. The participants were generally homogeneous in relation to demographic variables, such as race, as well due to further sampling issues. Because of this, there is a clear understanding of only a specific demographic of people, female college-aged students. Overgeneralizing the results to other populations and demographics would be inappropriate.

A further limitation is that only suicidal ideation was measured, which does not directly translate to suicidal intent, plans, or future attempts. This may have created a data set that is not as meaningful or directly oriented with the theories' intended target. Further, because of the correlational nature of the data, it could further be that overlap of the two theories is due to some artifact or unknown third variable which is causing these two theories to be similar. Protective factors against suicide were not analyzed as well, which can better help determine how the theories in question come into play being weighed against protective aspects in the mind of a suicidal individual. There was little assessment of avoidance, attachment, or close relationships, which can be important factors to consider for assessing suicidality in college students (Hope,

2009). This issue could have possibly skewed the data related to suicidal ideation because these issues were not accounted for to parse out the severity of suicidal ideation.

Many of these issues could have been addressed through changing the sample to include those in clinical setting and the general populous in more than one location throughout the US. More of the limitations could have been addressed through follow-up data collection at specific intervals such as 3 months, 6 months, and a year. In order to address the limitation of only measuring suicidal ideation, further analysis could have included more direct data about suicidal traits and aspects such as intent or plans.

### **Summary**

This study found that the cognitive and affective theories of suicide overlap conceptually. By scrutinizing each aspect of both theories as it relates to the other theoretically and statistically, it was found that the two theories have considerable similarities. Although the two theories are similar, they still give some additional depth to the understanding to suicide individually. This suggests combining the theories into one that incorporates all aspects would be of benefit. Future research should focus first on addressing the limitations mentioned in this study. Once these concerns are able to be weighted appropriately, clinicians and researchers should seek to further find how other theories of suicide overlap conceptually. The focus of this research would primarily be concerned with the ways in which each theory contributes to a further understanding of suicide. Through using other methods of research, such as case studies, post-mortem analysis, or neural imaging of suicidal individuals, these combined theories can then be analyzed for functional properties to be used by clinicians and the general populous.

In order to create a more universal solution to suicide, a more universal understanding of suicide must be reached which the common populous can utilize, including how pain, thoughts,

and chemical imbalances interplay. Finding patterns and paradigms in theories and applying them to clinical practice is common place and substantial work for most clinicians in training. A better way of training those who work closely with people fighting with suicide may be to train a single theory and its implications, rather than many similar theories. To create a universal theory, based in facts and sound science, further research than this study will need to review each of the current theories of suicide. By reviewing each of them carefully, the aspects each theory adds creates a deeper understanding to the variation between person to person can be incorporated into a unified theory of suicide. Results suggest that focusing both on the affective and cognitive aspects of those contemplating suicide may be a better way than addressing a person's cognitive or affective state alone.

## References

- Abramson, L. Y., Alloy, L. B., Hogan, M. E., Whitehouse, W. G., Cornette, M., Akhavan, S., & Chiara, A. (1998). Suicidality and cognitive vulnerability to depression among college students: A prospective study. *Journal of Adolescence, 21*, 473-487.  
doi:10.1006/jado.1998.0167
- Abramson, L. Y., Alloy, L. B., & Metalsky, G. I. (1990). The hopelessness theory of depression: Current status and future directions. In N. L. Stein, B. Leventhal, T. Trabasso (Eds.), *Psychological and biological approaches to emotion* (pp. 333-358). Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc.
- Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review, 97*, 90-113.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.
- Beck, A.T. (1967). *Depression: Causes and treatment*. Philadelphia, PA: University of Pennsylvania Press.
- Beck, A. T. (1974). The development of depression: A cognitive model. In R. J. Friedman, M. M. Katz (Eds.), *The psychology of depression: Contemporary theory and research*. Oxford, England: John Wiley & Sons.
- Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. Oxford, England: International Universities Press.
- Beck, A. T. (1987). Cognitive models of depression. *Journal of Cognitive Psychotherapy, 1*, 5-37.
- Beck, A. T. (1970) *Depression: causes and treatment*. University of Pennsylvania Press.

- Beck, A. T., Brown, G., & Steer, R. A. (1989). Prediction of eventual suicide in psychiatric inpatients by clinical ratings of hopelessness. *Journal of Consulting and Clinical Psychology, 57*, 309-310. doi:10.1037/0022-006X.57.2.309
- Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: The Scale for Suicide Ideation. *Journal of Consulting and Clinical Psychology, 47*, 343-352. doi:10.1037/0022-006X.47.2.343
- Beck, A. T., & Rush, A. J. (1978). Cognitive approaches to depression and suicide. In G. Serban (Ed.), *Cognitive defects in the development of mental illness* (pp. 235-257). Oxford, England: Brunner/Mazel.
- Beck, A. T., Rush, A. J., Shaw, B., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford
- Beck, A. T., Steer, R. A., Beck, J. S., & Newman, C. F. (1993). Hopelessness, depression, suicidal ideation, and clinical diagnosis of depression. *Suicide and Life-Threatening Behavior, 23*, 139-145.
- Beck, A. T., Steer, R.A., & Brown, G.K. (1996). Beck Depression Inventory- 2<sup>nd</sup> edition manual. San Antonio, TX: Psychological Corporation.
- Beck, A. T., Steer, R. A., Kovacs, M., & Garrison, B. (1985). Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. *The American Journal of Psychiatry, 142*, 559-563
- Beck, J. S. (1995). *Cognitive therapy: Basics and beyond*. New York: Guilford.
- Beevers, C. G., & Miller, I. W. (2004). Perfectionism, cognitive bias, and hopelessness as prospective predictors of suicidal ideation. *Suicide and Life-Threatening Behavior, 34*, 126-137

- Bentley, K. W. (1999). Predictors of suicide ideation, depression, and hopelessness in high school and college students. *Dissertation Abstracts International*, 60, 1841.
- Burns, D. D. (1980). *Feeling good: The new mood therapy*. New York: Signet.
- Burns, D. D. (1993). *Ten days to self-esteem: The leader's manual*. New York: Quill
- Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Kaap-Deeder, J., & ... Verstuyf, J. (2014). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion*, doi:10.1007/s11031-014-9450-1
- Clark, D. A., Beck, A. T., & Alford, B. A. (1999). *Scientific foundations of cognitive theory and therapy of depression*. Philadelphia: Wiley
- Cohen, J. (1986). Statistical approaches to suicidal risk factor analysis. *Annals of the New York Academy of Sciences*, 487, 34–41. doi: 10.1111/j.1749-6632.1986.tb27883.x.
- Cohen, L. J., Test, M. A., & Brown, R. L. (1990). Suicide and schizophrenia: Data from a prospective community treatment study. *The American Journal of Psychiatry*, 147, 602-607.
- Covin, R., Dozois, D. A., Ogniewicz, A., & Seeds, P. M. (2011). Measuring cognitive errors: Initial development of the Cognitive Distortions Scale (CDS). *International Journal of Cognitive Therapy*, 4, 297-322. doi:10.1521/ijct.2011.4.3.297
- Davis, A. (1989). Depression and attempted suicide: A comparative study. *Australian and New Zealand Journal of Psychiatry*, 23, 59-66.
- Deci, E. L., & Ryan, R. M. (1980). Self-determination theory: When mind mediates behavior. *Journal of Mind and Behavior*, 1, 33–43.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268.

- DeLisle, M. (2007) *Understanding the Relationship between Depression, Hopelessness, Psychache and Suicide Risk*. (Unpublished doctoral dissertation). Queen's University, Kingston, Ontario, Canada.
- DeLisle, M. M., & Holden, R. R. (2009). Differentiating between depression, hopelessness, and psychache in university undergraduates. *Measurement and Evaluation in Counseling and Development*, *42*, 46-63. doi:10.1177/0748175609333562
- Ellis, T. E., Green, K. L., Allen, J. G., Jobes, D. A., & Nadorff, M. R. (2012). Collaborative Assessment and Management of Suicidality (CAMS) in an inpatient setting: Results of a pilot study. *Psychotherapy*, *49*, 72-80. doi:10.1037/a0026746
- Ewing, J. A. (1984). Detecting alcoholism: The CAGE Questionnaire. *JAMA: Journal of the American Medical Association*, *252*(14), 1905-1907.  
doi:10.1001/jama.1984.03350140051025
- Flamenbaum, R., & Holden, R. R. (2007). Psychache as a mediator in the relationship between perfectionism and suicidality. *Journal of Counseling Psychology*, *54*, 51-61.  
doi:10.1037/0022-0167.54.1.51
- Flett, G. L., Hewitt, P. L., & Heisel, M. J. (2014). The destructiveness of perfectionism revisited: Implications for the assessment of suicide risk and the prevention of suicide. *Review of General Psychology*, *18*, 156-172. doi:10.1037/gpr0000011
- Fowler, D., Freeman, D., Smith, B., Kuipers, E., Bebbington, P., Bashforth, H., & ... Garety, P. (2006). The Brief Core Schema Scales (BCSS): Psychometric properties and associations with paranoia and grandiosity in non-clinical and psychosis samples. *Psychological Medicine*, *36*(6), 749-759. doi:10.1017/S0033291706007355

- Hankin, B. L., Abramson, L. Y., Miller, N., & Haeffel, G. J. (2004). Cognitive vulnerability-stress theories of depression: Examining affective specificity in the prediction of depression versus anxiety in three prospective studies. *Cognitive Therapy and Research*, 28(3), 309-345. doi:10.1023/B:COTR.0000031805.60529.0d
- Hewitt, P. L., Caelian, C. F., Chen, C., & Flett, G. L. (2014). Perfectionism, stress, daily hassles, hopelessness, and suicide potential in depressed psychiatric adolescents. *Journal of Psychopathology and Behavioral Assessment*, doi:10.1007/s10862-014-9427-0
- Holden, R. R., & DeLisle, M. M. (2006). Factor structure of the Reasons for Attempting Suicide Questionnaire (RASQ) with suicide attempters. *Journal of Psychopathology and Behavioral Assessment*, 28, 1-8. doi:10.1007/s10862-006-4532-3
- Holden, R. R., Kerr, P.S., Mendonca, J. D., & Velamoor, V. R. (1998). Are some motives more linked to suicide proneness than others? *Journal of Clinical Psychology*, 54, 569-576. doi:10.1002/(SICI)1097-4679
- Holden, R. R., & Kroner, D. G. (2003). Differentiating suicidal motivations and manifestations in a forensic sample. *Canadian Journal of Behavioural Science*, 35, 35-44. doi:10.1037/h0087184
- Holden, R. R., & McLeod, L. D. (2000). The structure of the Reasons for Attempting Suicide Questionnaire (RASQ) in a nonclinical adult population. *Personality and Individual Differences*, 29, 621-628.
- Hope, K. J., (2009) *A Reason to Live: The Protective Factors of Close Friendships on College Students*. (Doctoral dissertation, University of Florida). Retrieved from <http://ufdc.ufl.edu/UFE0024245/00001>

- Iardi, S. S., & Craighead, W. E. (1999). The relationship between personality pathology and dysfunctional cognitions in previously depressed adults. *Journal of Abnormal Psychology, 108*, 51-57. doi:10.1037/0021-843X.108.1.51
- Jobes, D. A. (2013). Reflections on suicide among soldiers: A review of psychosocial risk and protective factors.' Reflections on suicide among soldiers. *Psychiatry: Interpersonal and Biological Processes, 76*, 126-131. doi:10.1521/psyc.2013.76.2.12
- Jobes, D. A., & Nelson, K. N. (2006). Shneidman's contributions to the understanding of suicidal thinking. In T. E. Ellis (Ed.), *Cognition and suicide: Theory, research, and therapy* (pp. 29-49). Washington, DC, US: American Psychological Association. doi:10.1037/11377-002
- Johns, D., & Holden, R. R. (1997). Differentiating suicidal motivations and manifestations in a nonclinical population. *Canadian Journal of Behavioural Science, 29*, 266-274
- Joiner, T. E. (2000). A test of the hopelessness theory of depression in youth psychiatric patients. *Journal of Clinical Child Psychology, 29*, 167-176.
- Joiner, T. E. (2005). *Why people die by suicide*. Cambridge, MA, US: Harvard University Press.
- Joiner, T. J., Pettit, J. W., Walker, R. L., Voelz, Z. R., Cruz, J., Rudd, M. D., & Lester, D. (2002). Perceived burdensomeness and suicidality: Two studies on the suicide notes of those attempting and those completing suicide. *Journal of Social and Clinical Psychology, 21*, 531-545. doi:10.1521/jscp.21.5.531.22624
- Joiner, T. E. & Rudd, M. D. (1995) Negative attributional style for interpersonal events and the occurrence of severe interpersonal disruptions as predictors of self-reported suicidal ideation. *Suicide and Life-Threatening Behaviors, 25*, 297-304.

- Keefer, K. V., Holden, R. R., & Gillis, K. (2009). The mediational role of psychache in the relationship between alexithymia and suicidal ideation. In Montreal, Canada: Canadian Psychological Association Annual Convention
- Kuyken, W., Padesky, C. A., & Dudley, R. (2009). *Collaborative case conceptualization: Working effectively with clients in cognitive-behavioral therapy*. New York: Guilford
- Leenaars, A. A. (1998). Suicide, euthanasia, and assisted suicide, In A. A. Leenaars, S. Wenckster, I. Sakinofsky, R. J. Dyck, M. J. Kral, & R. C. Bland (Eds.), *Suicide in Canada* (pp. 456-474). Toronto, On: University of Toronto Press.
- Leenaars, A. A. (2010). Lives and deaths: Biographical notes on selections from the works of Edwin S. Shneidman. *Suicide and Life-Threatening Behavior*, *40*, 476-491.  
doi:10.1521/suli.2010.40.5.476
- Lester, D. (2000). Psychache, depression, and personality. *Psychological Reports*, *87*, 940.
- Libman, J. (1987, May 22). Golden gate bridge: Triumph, tragedy: Suicide rate shadows the span's 50<sup>th</sup>-anniversary celebration. *The La Times*. Retrieved from [http://articles.latimes.com/1987-05-22/news/vw-1097\\_1\\_golden-gate-bridge/2](http://articles.latimes.com/1987-05-22/news/vw-1097_1_golden-gate-bridge/2)
- Linehan, M. M., Comtois, K. A., Murray, A. M., Brown, M. Z., Gallop, R. J., Heard, H. L., . . . Lindenboim, N. (2006). Two-year randomized controlled trial and follow-up of dialectical behavior therapy versus therapy by experts for suicidal behaviors and borderline personality disorder. *Archives of General Psychiatry*, *63*, 757–766
- Mann, J. J., Waternaux, C., Haas, G. L., & Malone, K. M. (1999). Toward a clinical model of suicidal behavior in psychiatric patients. *The American Journal of Psychiatry*, *156*, 181-189.

- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, *50*, 370-396.  
doi:10.1037/h0054346
- Messer, S. C., Kempton, T., Van Hasselt, V. B., Null, J. A., & Bukstein, O. G. (1994). Cognitive distortions and adolescent affective disorder: Validity of the CNCEQ in an inpatient sample. *Behavior Modification*, *18*, 339-351. doi:10.1177/01454455940183006
- Metalsky, G. I., & Joiner, T. E. (1992). Vulnerability to depressive symptomatology: A prospective test of the diathesis-stress and causal mediation components of the hopelessness theory of depression. *Journal of Personality and Social Psychology*, *63*, 667-675. doi:10.1037/0022-3514.63.4.667
- Motto, J. A. (1992). An integrated approach to estimating suicide risk. In R. W. Maris, A. K. Berman, J. T. Maltzberger, & R. I. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 625-639). New York: The Guilford Press.
- Munchua, M. M. (2003). *The underlying need structure of psychache and its role in the statistical prediction of suicidal manifestations*. (unpublished master's thesis). Queen's University, Kingston, Ontario, Canada.
- Murray, H. (1938). *Explorations in personality*. Oxford, England: Oxford Univ. Press.
- Olié, E., Guillaume, S., Jausset, I., Courtet, P., & Jollant, F. (2010). Higher psychological pain during a major depressive episode may be a factor of vulnerability to suicidal ideation and act. *Journal of Affective Disorders*, *120*, 226-230. doi:10.1016/j.jad.2009.03.013
- Orbach, I., Mikulincer, M., Gilboa-Schechtman, E., & Sirota, P. (2003). Mental pain and its relationship to suicidality and life meaning. *Suicide and Life-Threatening Behavior*, *33*, 231-241. doi:10.1521/suli.33.3.231.23213

- Petrocelli, J. V. (2003). Hierarchical multiple regression in counseling research: Common problems and possible remedies. *Measurement and Evaluation in Counseling and Development, 36*, 9-22
- Pompili, M., Lester, D., Leenaars, A. A., Tatarelli, R., & Girardi, P. (2008). Psychache and suicide: A preliminary investigation. *Suicide and Life-Threatening Behavior, 38*, 116-121. doi:10.1521/suli.2008.38.1.116
- Pössel, P., & Black, S. W. (2014). Testing three different sequential mediational interpretations of Beck's cognitive model of the development of depression. *Journal of Clinical Psychology, 70*, 72-94. doi:10.1002/jclp.22001
- Ranieri, W. F., Steer, R. A., Lavrence, T. I., Rissmiller, D. J., Piper, G. E., & Beck, A. T. (1987). Relationships of depression, hopelessness, and dysfunctional attitudes to suicide ideation in psychiatric patients. *Psychological Reports, 61*, 967-975. doi:10.2466/pr0.1987.61.3.96
- Rasmussen, K. A., Shish, M. L., Wingate, L. R., Davidson, C. L., & Grant, D. M. (2012). Can perceived burdensomeness explain the relationship between suicide and perfectionism? *Suicide and Life-Threatening Behavior, 42*, 121-128. doi:10.1111/j.1943-278X.2011.00074.x
- Reinecke, M.A. (2000). Suicide and depression, In F. M. Dattilio & A. Freeman (Eds.), *Cognitive-behavioral strategies in crisis intervention* (pp. 84-125). New York: Guilford.
- Ribeiro, J. D., Bodell, L. P., Hames, J. L., Hagan, C. R., & Joiner, T. E. (2013). An empirically based approach to the assessment and management of suicidal behavior. *Journal of Psychotherapy Integration, 23*, 207-221. doi:10.1037/a0031416

- Rudd, M. D., Joiner, T., & Rajab, M. H. (1996). Relationships among suicide ideators, attempters, and multiple attempters in young-adult sample. *Journal of Abnormal Psychology, 105*, 541–550
- Schmidt, N. B., & Joiner, T. J. (2004). Global maladaptive schemas, negative life events, and psychological distress. *Journal of Psychopathology and Behavioral Assessment, 26*, 65-72. doi:10.1023/B:JOBA.0000007457.95008.d2
- Seeds, P. M., & Dozois, D. A. (2010). Prospective evaluation of a cognitive vulnerability-stress model for depression: The interaction of schema self-structures and negative life events. *Journal of Clinical Psychology, 66*(12), 1307-1323. doi:10.1002/jclp.20723
- Shih, J. H. (2006). Sex differences in stress generation: An examination of sociotropy/autonomy, stress, and depressive symptoms. *Personality and Social Psychology Bulletin, 32*, 434-446
- Shneidman, E. S. (1976) Psychological theory of suicide. *Psychiatric Annals, 6*, 51-66.
- Shneidman, E. S. (1985) *Definition of suicide*. Northvale, NJ: Jason Aronson.
- Shneidman, E. S. (1987) A psychological approach to suicide. In G.R. Vanderbos & B. K. Bryant (Eds.), *Cataclysms, crises, and catastrophes: Psychology in action* (pp. 147-183). Washington, DC: American Psychological Association.
- Shneidman, E. S. (1993) *Suicide as psychache*. Northvale, NJ: Jason Aronson.
- Shneidman, E. S. (1996) *The suicidal mind*. New York, NY: Oxford University Press.
- Shneidman, E. S. (1998) Further reflections on suicide and psychache. *Suicide and Life-Threatening Behavior, 28*, 245-250.

- Shneidman, E. S. (1999). Perturbation and lethality: A psychological approach to assessment and intervention. In D. G. Jacobs (Ed.), *The Harvard Medical School guide to suicide assessment and intervention* (pp. 83–97). San Francisco: Jossey-Bass.
- Shneidman, E. S. (2001) Suicidology and the university: A founder's reflections at 80. *Suicide and Life-Threatening Behavior*, *31*, 1-8.
- Silva, C., Chu, C., Monahan, K. R., & Joiner, T. E. (2014). Suicide risk among sexual minority college students: A mediated moderation model of sex and perceived burdensomeness. *Psychology of Sexual Orientation and Gender Diversity*. Advance online publication. doi:10.1037/sgd0000086
- Silva, C., Ribeiro, J. D., & Joiner, T. E. (2015). Mental disorders and thwarted belongingness, perceived burdensomeness, and acquired capability for suicide. *Psychiatry Research*, doi:10.1016/j.psychres.2015.01.008
- Troister, T. (2009) *A prospective study of psychache and its relation to suicidality*. (unpublished doctoral dissertation). Queen's University, Kingston, Ontario, Canada.
- Troister, T., Davis, M. P., Lowndes, A., & Holden, R. R. (2013). A five-month longitudinal study of psychache and suicide ideation: Replication in general and high-risk university students. *Suicide and Life-Threatening Behavior*, *43*, 611-620. doi:10.1111/sltb.12043
- Troister, T., & Holden, R. R. (2010). Comparing psychache, depression, and hopelessness in their associations with suicidality: A test of Shneidman's theory of suicide. *Personality and Individual Differences*, *49*, 689-693. doi:10.1016/j.paid.2010.06.006
- Troister, T., & Holden, R. R. (2012). A two-year prospective study of psychache and its relationship to suicidality among high-risk undergraduates. *Journal of Clinical Psychology*, *68*, 1019-1027. doi:10.1002/jclp.21869

- Troister, T., & Holden, R. R. (2013). Factorial differentiation among depression, hopelessness, and psychache in statistically predicting suicidality. *Measurement and Evaluation in Counseling and Development, 46*, 50-63. doi:10.1177/0748175612451744
- Van Orden, K. A., (2009) *Construct validity of the Interpersonal Needs Questionnaire*. (Doctoral dissertation, Florida State University). Retrieved from <http://diginole.lib.fsu.edu/cgi/viewcontent.cgi?article=5576&context=etd>
- Van Orden, K. A., Cukrowicz, K. C., Witte, T. K., & Joiner, T. J. (2012). Thwarted belongingness and perceived burdensomeness: Construct validity and psychometric properties of the Interpersonal Needs Questionnaire. *Psychological Assessment, 24*, 197-215. doi:10.1037/a0025358
- Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner, T. J. (2010). The interpersonal theory of suicide. *Psychological Review, 117*, 575-600. doi:10.1037/a0018697
- Van Orden, K. A., Witte, T. K., Gordon, K. H., Bender, T. W., & Joiner, T. J. (2008). Suicidal desire and the capability for suicide: Tests of the interpersonal-psychological theory of suicidal behavior among adults. *Journal of Consulting and Clinical Psychology, 76*(1), 72-83. doi:10.1037/0022-006X.76.1.72
- Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration, 23*, 263-280. doi:10.1037/a0032359
- Wang, K. T., Wong, Y. J., & Fu, C. (2013). Moderation effects of perfectionism and discrimination on interpersonal factors and suicide ideation. *Journal of Counseling Psychology, 60*, 367-378. doi:10.1037/a0032551F

Wenzel, A., Brown, G. K., & Beck, A. T. (2009). A cognitive model of suicidal acts. *Cognitive therapy for suicidal patients: Scientific and clinical applications* (pp. 53-77).

Washington, DC, US: American Psychological Association. doi:10.1037/11862-003

World Health Organization. (2008). Suicide statistics: Introduction. Retrieved February 1, 2015, from [http://www.who.int/mental\\_health/prevention/suicide/suicideprevent/en/print.html](http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/print.html)

## Appendix

Table 1

*Descriptive Statistics*


---

Demographic	Frequency	Percent of Sample
<b>Sexual Orientation</b>		
Heterosexual	403	94%
Homosexual	6	1%
Bisexual	12	3%
Pansexual	4	1%
Orientation; Not Listed	2	0%
<b>Military Status</b>		
Military or Veteran	12	3%
Deployed Military	5	1%
<b>Race</b>		
White	331	78%
Black or African American	19	4%
American Indian	11	3%
Chinese	8	2%
Filipino	14	3%
Vietnamese	7	2%
Race, Not Listed	77	18%
One or More Races	40	9%
<b>Diagnosis</b>		
Any Diagnosis	219	51%
Anxiety	90	21%
Depression	77	18%
PTSD	9	2%
OCD	8	2%
Drug or Alcohol Addiction	8	2%
Eating Disorder	7	2%
Bipolar or Manic Depression	5	1%

---

Note. PTSD = Post Traumatic Stress Disorder. OCD = Obsessive Compulsive Disorder. Any Diagnosis = Any diagnosis selected or written in as officially given by a mental health provider.

Table 2

*Descriptive Statistics for Study Variables*

Variable	Mean	Standard Deviation	Range Minimum	Range Maximum
SSI	24.02	4.81	19	46
PNQ	14.73	11.71	-55	70
INQ	52.47	7.94	15	82
NLEQ	120.54	35.13	64	299
CDS	81.25	19.49	29	138
BCSS	87.61	12.80	46	120
BDI	13.55	11.91	0	57
ACHE	23.81	11.12	13	64
RASQ	26.18	11.00	14	61
Pressures	2.79	1.22	1	5

Note. SSI = Scale for Suicide Ideation; PNQ = Psychological Needs Questionnaire; INQ = Interpersonal Needs Questionnaire; NLEQ = Negative Life Events Questionnaire; CDS = Cognitive Distortion Scale; BCSS = the Brief Core Schemas Scale; BDI = Beck Depression Inventory-II; ACHE = Psychache Scale; RASQ = Reasons for Attempting Suicide Questionnaire.

Table 3

*2-Tailed Pearson Correlations of Variables*

	SSI	PNQ	INQ	NLEQ	CDS	BCSS	BDI	ACHE	RASQ	Press
SSI	-									
PNQ	.136**	-								
INQ	.536**	.187**	-							
NLEQ	.388**	-.037	.549**	-						
CDS	.210**	.119*	.383**	.390**	-					
BCSS	-.432**	-.210**	-.688**	-.496**	-.435**	-				
BDI	.539**	.215**	.652**	.573**	.471**	-.653**	-			
ACHE	.582**	.219**	.622**	.500**	.384**	-.649**	.807**	-		
RASQ	.390**	.012	.371**	.470**	.325**	-.343**	.432**	.425**	-	
Press	.234**	.118*	.297**	.259**	.263**	-.317**	.423**	.426**	.229**	-

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Note. SSI = Scale for Suicide Ideation; PNQ = Psychological Needs Questionnaire; INQ = Interpersonal Needs Questionnaire; NLEQ = Negative Life Events Questionnaire; CDS = Cognitive Distortion Scale; BCSS = Brief Core Schema Scales; BDI = Beck Depression Inventory-II; ACHE = Psychache Scale; RASQ = Reasons for Attempting Suicide Questionnaire.

Table 4

*Coefficients of Cognitive and Affective Theory Combined in Hierarchical Multiple Regression Analysis by Block*

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			LB	UB
<b>Block 1 Theory Precursors</b>							
(Constant)* *	.803	.042		19.32	.000	.721	.885
PNQ	.001	.001	.061	1.42	.157	-.001	.003
INQ**	.121	.014	.435	8.46	.000	.093	.149
NLEQ**	.073	.023	.158	3.12	.002	.027	.119
<b>Block 2 Theory Totals</b>							
(Constant)**	.735	.105		6.99	.000	.528	.942
PNQ	.027	.031	.036	.88	.380	-.034	.089
INQ**	.094	.021	.195	4.42	.000	.052	.135
NLEQ*	.049	.024	.106	2.00	.046	.001	.097
CDS**	-.039	.012	-.149	-3.18	.002	-.062	-.015
BCSS Positive Others	-.016	.015	-.052	-1.09	.276	-.046	.013
BCSS Negative Others	.003	.013	.010	.23	.817	-.023	.029
BCSS Positive Self	-.010	.017	-.035	-.60	.547	-.043	.023
BCSS Negative Self	.019	.026	.046	.74	.458	-.031	.070
BCSS Total	-.049	.027	-.102	-1.83	.068	-.101	.004
BDI	.045	.035	.099	1.28	.202	-.024	.113
ACHE**	.098	.022	.329	4.53	.000	.055	.140
RASQ**	.043	.015	.132	2.84	.005	.013	.072
Pressures	-.010	.009	-.046	-1.04	.299	-.028	.008

a. Dependent Variable: SSI

\*\* - Significant at the 0.01 level.

\* - Significant at the .05 level.

Note. LB = Lower Bound; UB = Upper Bound; SSI = Scale for Suicide Ideation; PNQ = Psychological Needs Questionnaire; INQ = Interpersonal Needs Questionnaire; NLEQ = Negative Life Events Questionnaire; CDS = Cognitive Distortion Scale; BCSS = Brief Core Schema Scales with the type of each of its subscales labeled; BCSS Total: When the two positive BCSS scales are reverse scored and averaged with the two negative BCSS scales to create a single average score instead of four separate averages; BDI = Beck Depression Inventory-II; ACHE = Psychache Scale; RASQ = Reasons for Attempting Suicide Questionnaire.

Table 5

*Hierarchical Multiple Regression Analysis of Theories of Suicide*

Theory	Block	R	R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	R <sup>2</sup> <sub>chg</sub>	F <sub>chg</sub>	df1	df2	p
Cognitive and Affective Theories									
	1	0.549	0.301	0.296	0.301	57.495	3	401	0.000
	2	0.643	0.414	0.397	0.198	9.399	9	392	0.000
Cognitive Theory									
	1	0.388	0.151	0.149	0.151	75.355	1	425	0.000
	2	0.570	0.325	0.314	0.175	18.061	6	419	0.000
Affective Theory									
	1	0.532	0.283	0.279	0.283	78.801	2	398	0.000
	2	0.641	0.400	0.392	0.117	25.861	5	395	0.000

Note. Dependent Variable = Suicidal Ideation

The Cognitive and Affective Theory's' Causal Relationship

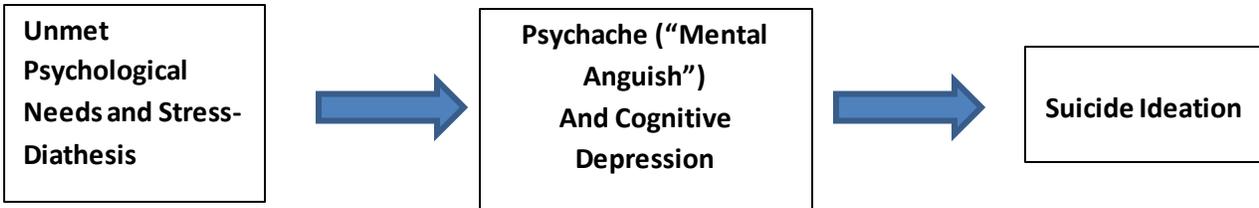
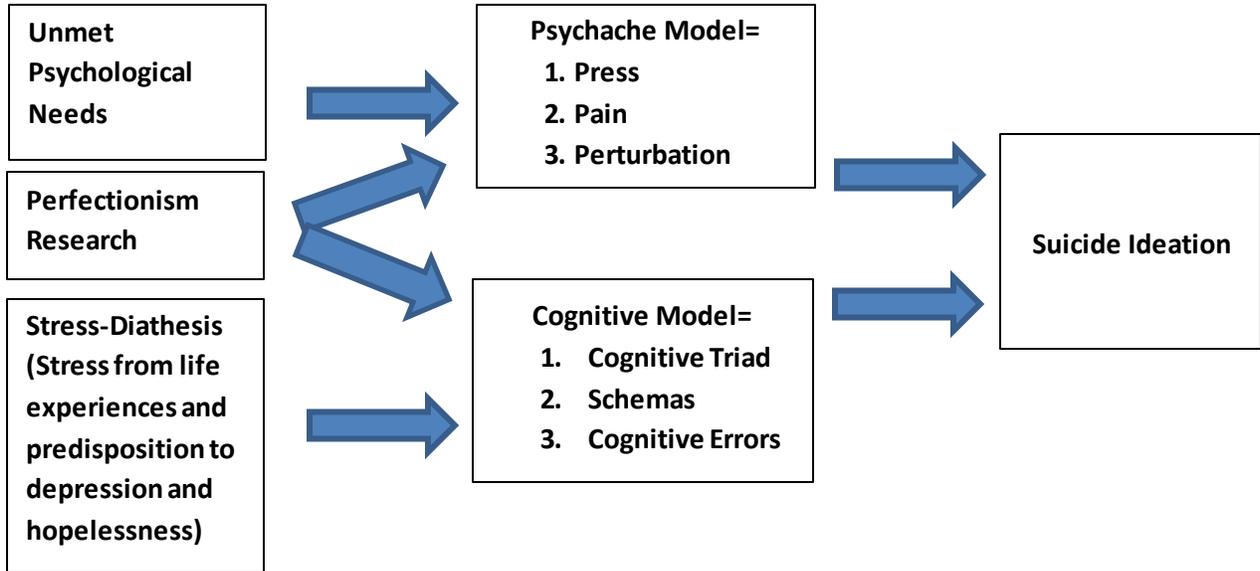


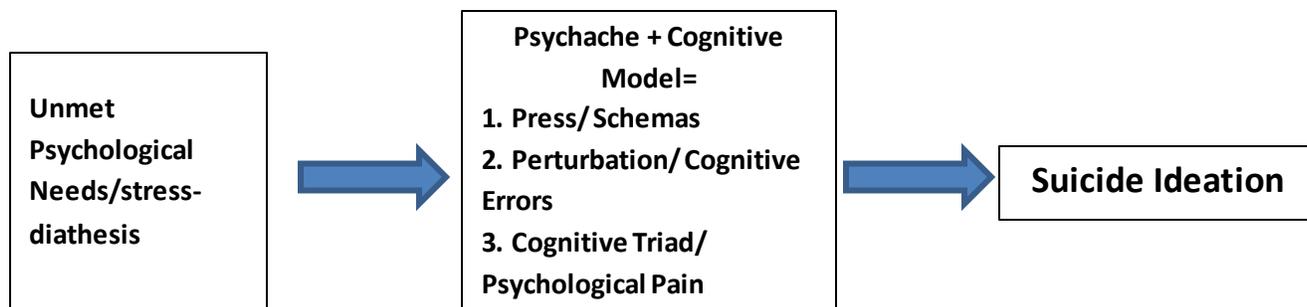
Figure 1. The arrows represent the causal direction of the relationship. Each box includes the aspects theorized to cause the next aspects.

### Theories of Suicide as Related to Perfectionism



**Figure 2.** The arrow direction represents the causal nature of the constructs. Each box includes the aspects theorized to cause the next aspects.

Affective and Cognitive Theories of Suicide Combined as a Single Theory



**Figure 3.** The arrow direction represents the causal nature of the constructs. Each box includes the aspects theorized to cause the next aspects.

## VITA

## AUTHOR:

Leo D. DeBroeck

## UNDERGRADUATE EDUCATION:

Everett Community College, Washington  
Psychology Major

Gonzaga University, Washington  
Psychology Major

## AWARDS AND HONORS:

2016	Eastern Washington University Addiction Studies Suicide Assessment, Treatment, & Management Certificate
------	---

## MEMBERSHIPS:

2012-Lifetime	Phi Theta Kappa Honor Society
---------------	-------------------------------

2013-Present	American Association of Suicidology (AAS)
--------------	---

## RESEARCH CONFERENCES:

04/2014	SIRC, Spokane Intercollegiate Research Conference. Gender Differences in Motivations for Cohabitation.
---------	---

## PROFESSIONAL EXPERIENCE:

2015-2016	Student Behavioral Health Counselor
-----------	-------------------------------------

Community Health Association of Spokane  
Spokane, Washington