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Suicidality and Impulsivity: A Test of the Mediating Role of Painful Experiences

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SUICIDALITY AND IMPULSIVITY: A TEST OF THE MEDIATING ROLE OF
PAINFUL EXPERIENCES

By

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ABSTRACT

Prior research on suicide has cited impulsivity as a risk factor, yet little is known about the actual relationship between these variables. According to Joiner’s (2005) interpersonal-psychological theory of suicidality, impulsive people are more likely than others to have habituated to extreme forms of pain and threat, accruing increased comfort with exposure to lethal self-injury. Joiner’s (2005) theory proposes that the relationship between impulsivity and suicide is mediated by painful and provocative experiences that cause habituation, which in turn leads to the necessary acquired capability for suicide. We predicted that significant relationship will exist between trait impulsivity as measured by the Barratt Impulsivity Scale, behavioral impulsivity as measured by the Impulsive Behavior Scale, and three theoretically interrelated dependent measures: the Acquired Capability for Suicide Scale, pain threshold, and pain tolerance (as measured by a digital pressure algometer). We also predicted that scores on the Painful and Provocative Life Events Scale would mediate statistically significant relationships between trait impulsivity, behavioral impulsivity, and the acquired capability for suicide in an undergraduate sample (N=215). Behavioral Impulsivity significantly predicted the acquired capability for suicide, whereas trait impulsivity did not. Furthermore, painful and provocative life experiences fully mediated the relationship between behavioral impulsivity and the acquired capability for suicide. Results indicate that the relationship between behavioral impulsivity and acquired capability for suicide may be better explained by an individual’s exposure to painful and provocative life events.

Key Words: Impulsivity, Suicide, Acquired Capability
IMPULSIVITY AND SUICIDALITY: A TEST OF THE MEDIATING ROLE OF
PAINFUL EXPERIENCES
MAIN SECTION

The rate of death by suicide in this country is about 10 for every 100,000 people. It is the 11th leading cause of death in the United States, ranked above liver disease and homicide as cause of death (American Association of Suicidology, 2009). It is the third leading cause of death among the age group of 15 – 19 year olds. It can leave families feeling empty, agonized, and full of unanswered questions. Suicide attempts and deaths by suicide are a major concern to the public and extensive research on the topic is imperative. Suicide affects many more people than the decedents themselves, thus, it is important that this phenomenon is studied scientifically, so that we may develop a deeper understanding of the causes involved. Joiner’s (2005) interpersonal-psychological theory of suicide is one comprehensive and potentially useful theory, which has developed explanations of a wide range of suicide-related phenomena.

A suicide attempt is defined as a self-inflicted, potentially damaging act of trying to take one’s own life. This includes any attempt in which there is evidence of intent to die and that was not fatal whether due to the non-lethal nature of the attempt or being saved by another. Intent to die is central to this definition. This distinction is made to differentiate between non-suicidal self-injury and suicide attempt (Silverman et al., 2007). It is noteworthy that in the United States, three times as many women attempt suicide as men each year, but men are more likely to die by suicide, due partly to their tendency to use more violent methods (Joiner, 2005).

A death by suicide is a self-inflicted lethal behavior, with evidence of intent to die (Silverman et al., 2007). Intentionally abandoning life involves overcoming perhaps the most instinctive of biological drives. The body is hard-wired for survival. To subvert this takes mental and physical practice that is extremely difficult at first, but has been known to eventually become easier and more accessible as the individual becomes habituated (Joiner et al., 2005, see also Solomon, 1980). Also, as Orbach et al. (1996) suggest, people who have become suicidal may view themselves and their bodies in a way that is not pleasing to them, which may actually increase pain tolerance and make further self-
harm easier. In this connection, past suicide attempts are one of the strongest predictors of future attempts (Joiner et al., 2005).

Earlier work focusing on suicide has addressed risk factors, but generally failed to differentiate between individuals with, on the one hand, any suicidal feature, versus those, on the other hand, at risk for near-lethal attempt or death. This is where Joiner’s (2005) theory attempts a new level of specificity. It would be important to understand the difference between those who are exhibiting any suicidal ideation vs. those who are at serious risk due to the fact that for every death by suicide there are an estimated 25 attempts nationwide (American Association of Suicidology, 2009).

There are three main aspects to Joiner’s (2005) theory of suicidality. These components are thwarted belongingness, perceived burdensomeness, and the acquired capability for suicide. This theory posits that individuals will not die by suicide until they have developed the desire (low belongingness, high burdensomeness) and the ability (acquired capability) to do so. The hypothesis that individuals low in belongingness have increased risk for suicide is well documented (Waem et al., 2003; Koivumaa-Honkanen et al., 2001). Thwarted belongingness describes what people experience when they have little social contact, including, but not limited to: living alone, the consequences of some divorces, death of a spouse, or psychiatric disorders that put limits on contact with others (Boardmen et al., 1999). The need to belong is a fundamental part of human nature (Baumeister & Leary, 1995). When this need goes unfulfilled, the possibility of a suicide attempt or death by suicide escalates.

The second component to Joiner’s (2005) theory is perceived burdensomeness. The element of burdensomeness has been found to correlate with death by suicide. Joiner et al. (2002) studied suicide notes of both suicide completers and attempters. Results showed that burdensomeness was significantly correlated with suicide completion versus attempts. This result was found even when controlling for other variables such as gender, emotional pain, and hopelessness (Joiner et al., 2002). Perceived burdensomeness is evident in individuals who feel that their immediate family members and the world in general would be better off if they were no longer living. Feeling that one is a burden to family and friends can be a strong initiator of suicidal ideations. Brown et al. (1999) found a relationship between suicidal ideation and patients’ feelings of how burdensome
they are on their family. Similarly, DeCatanzaro (1995) found a relationship between perceived burdensomeness and suicidal ideation in psychiatric patients, as well as incarcerated psychiatric patients. This is consistent with the view that burdensomeness is a factor that contributes to suicide, but this alone does not lead an individual to complete it.

The third and perhaps least researched aspect of Joiner’s (2005) theory is the acquired capability for suicide- the main focus of the study proposed here. Acquired capability refers to reaching the point where overcoming the instinctive fear and pain regarding suicide is possible. Joiner proposes that acquired capability can be attained in many ways, and is often reached in impulsive individuals who have experienced risky life events and painful and provocative experiences. Opponent process theory (Solomon, 1980) suggests that with repeated exposure, the effects of previously noxious or provocative stimuli may recede. In time, the opposite effect of the stimuli becomes strengthened and amplified. There have been multiple studies that have shown that individuals with suicidal symptomatology have higher levels of pain tolerance than controls (e.g., Orbach, Mikulincer, King, Cohen, & Stein, 1997). Joiner (2005) suggests that the most direct route to gaining the acquired capability for suicide is one’s previous experience with suicidal behavior. Joiner’s (2005) interpersonal theory of suicide indicates that previous experience with suicidal behavior considerably strengthens one’s acquired capability for suicide.

Impulsive behavior has been linked to suicide and is considered a risk factor (Maser et al., 2002; Joiner, 2005). Joiner posited that impulsive people tend to experience more painful and provocative life events, which, in turn, helps to habituate them to pain and fear more so than individuals who lack impulsivity. One may view death by suicide itself an impulsive act, carried out on a whim or on the spur of the moment. However, this may not be the case. In fact, suicide is often not an impulsive act. Rather, it is usually planned out carefully. The individual usually planfully acquires the necessary means needed for suicide, including but not limited to guns, rope, poisons, and other items that will aid the individual in taking his/her life. In a study of suicidal behavior in adolescents grades 9-12, participants who had made a suicide attempt without prior planning scored lower on measures of impulsiveness than those who had planned and attempted suicide
(Witte et al., 2008). This study suggests impulsive individuals are more likely to plan for suicide, contrary to the “on a whim” notion. This study also showed that less than a quarter of the attempters had attempted impulsively, clearly showing that impulsive attempts are not the status quo within the adolescent population. Indeed, the specificity of plans for suicide has been implicated as a strong predictor for death by suicide and is an integral aspect of assessing risk in clinical settings (Wingate, Joiner, Walker, Rudd, & Jobes, 2004).

If suicide is not an impulsive act, then how is it that so many who attempt or complete suicide show impulsive traits? According to Joiner (2005), impulsive people are more likely than others to have habituated to extreme forms of pain and threat, and thus to have accrued increased comfort with exposure to lethal self-injury. Should the desire for suicide develop, such individuals have the capacity to act on this desire. Thus, Joiner’s (2005) theory proposes that the relationship between impulsivity and suicidal behavior is mediated by exposure to painful and provocative experiences that cause habituation to threat and pain, which, in turn, leads to the acquired capability for suicide.

Pain tolerance in individuals with multiple suicide attempts is reportedly higher than that of non-attempters (Orbach, 1994; Orbach, Palgi, Stein, & Par-Even, 1996). This suggests that having a high pain tolerance may aid in the ability to damage the body, especially in times of high stress (Orbach et al., 1994). In the Orbach et al. (1996) study, pain assessments were taken from emergency room patients who were admitted for suicide attempts, accident victims, and a non-hospitalized control group. Pain tolerance was found to be very high in the suicide attempters, compared to accident victims or controls. These findings were interpreted to relate to core beliefs about life itself. The main difference between the two hospitalized groups, according to Orbach et al., was the “life destroying tendency” in suicide patients as opposed to the “life preserving tendency” of the accident victims.

The current study is a direct test of Joiner’s (2005) theory focusing on acquired capability for self-harm via exposure to pain and threat. This theory suggests that individuals who are rated as high in impulsivity and experience painful and provocative life events may be more at risk to attain acquired capability.
After reviewing many potential risk factors for gaining the capability to enact lethal self harm, we predict that a significant relationship will exist between trait impulsivity as measured by the Barratt Impulsivity Scale (BIS; Patton, Stanford, & Barratt, 1995), behavioral impulsivity as measured by the Impulsive Behavior Scale (IBS; Rosotto et al., 1998), and three theoretically interrelated dependent measures: The Acquired Capability for Suicide Scale (ACSS; Bender, Gordon, & Joiner, 2007), as well as pain threshold, and pain tolerance, which will be measured using a digital pressure algometer (Type II, Somedic Inc. Solletuna, Sweden). Furthermore, we expect painful and provocative life events, as measured by the Painful and Provocative Life Events Scale (PPES, Bender, Gordon, & Joiner, 2007) to mediate statistically significant relationships between trait impulsivity as measured by the BIS, behavioral impulsivity as measured by the IBS, and the acquired capability for suicide as measured by the ACSS, and pain threshold and tolerance levels. Confirmation of these hypotheses would provide evidence that painful and provocative life events may serve to habituate people to the fear and pain involved in lethal self-injury, thus making them more at risk for suicide via acquired capability. Furthermore, if the mediational effect is found, the results could shed further light on the relationship between impulsivity and the acquired capability for suicide.
METHODS

Participants

220 participants were recruited for this study. All participants were undergraduate students who were enrolled in an introduction to psychology course. They were given class credit for participation. Participants were instructed prior to experiment sign up of exclusionary factors for participation. All left-handed participants were excluded, because the left hand has been shown to have an increased pain tolerance regardless of the dominant hand (Murray & Hagan, 1973). Participants were also instructed to refrain from eating sugared foods for a period of eight hours prior to the experiment because of increased pain tolerance (Mercer & Holder, 1997) associated with ingestion of such foods. Smokers were also excluded due to increased levels of pain tolerance and threshold (Pomerleau, Turk, & Fertig, 1984) associated with smoking. Also, participants were instructed to refrain from ingesting any analgesics (acetaminophen, aspirin) and alcohol eight hours prior to the time of their appointment (Mercer & Holder, 1997; Kanarek & Carrington, 2004). Participants who violated these restrictions were thanked for coming and excused from further participation.

Procedure

Upon entry to the lab, participants were asked to fill out a consent form prior to beginning any procedures. Then, they completed a battery of questionnaires and their pain threshold and tolerance were assessed.

Measures

Predictor Variables: The Barratt Impulsivity Scale (BIS; Patton, Stanford, & Barratt, 1995). The BIS-11 is a 30 item self-report measure used to assess an individual’s impulsive traits. Higher scores indicate higher levels of trait impulsivity. Reliability in this sample was adequate (Cronbach’s alpha =0.65).

The Impulsive Behavior Scale (Rossotto, Yager, & Rorty, 1998). The IBS is a 25-item measure that asks participants to indicate how many times they have engaged in particular impulsive behaviors (e.g., self-mutilation, shoplifting, promiscuous sex). Participants are asked to indicate how many times they have engaged in each of the impulsive behaviors, rated on a 5-point scale (1 = never, 2 = once, 3 = on occasion, 4 =
sometimes, 5 = regularly). Reliability in this sample was strong (Cronbach’s alpha = 0.85)

Proposed Mediator Variable: Painful and provocative life events were assessed using the Painful and Provocative Events Scale (PPES; Bender, Gordon, & Joiner, 2007). This self-report scale asks participants how many times they have experienced certain events (got a piercing, shot a gun, intentionally hurt animals, played contact sport, in physical fights, victim of sexual abuse) that Joiner’s (2005) interpersonal-psychological theory suggests may further the capability for lethal self-injury. Higher scores indicate higher levels of negative life events. In this sample reliability for the PPES was adequate (Cronbach’s alpha =0.71).

Dependent Variables: Pain Threshold and Tolerance. Baseline measurements of pain threshold and pain tolerance (five trials each) were taken by using a pressure algometer (Type II; Somedic, Solletuna, Sweden). For pain threshold, participants were instructed to say “now” when they first felt pain due to the pressure increase. For pain tolerance, participants were instructed to say, “stop” when the pain became too uncomfortable to continue. At this point, the experimenter immediately retracted the algometer. The digital display showed the value of pressure applied at the moment the algometer was retracted. The algometer was applied perpendicularly to the skin and lowered at a rate of approximately 5 kilopascals (kPA) per second until pain threshold or tolerance was reached, as indicated by participants’ verbal report. All pain measurements were taken at the first dorsal intersosseous muscle (i.e., behind the first knuckle of the index finger) of the participant’s right hand. The order of the pain tolerance and threshold measurements were counterbalanced across participants. To prevent habituation, there was a 1.5-min interval between all pain threshold and tolerance measurements (Orbach, Mikulincer, King Cohen, & Stein, 1997).

Acquired Capability for Suicide Scale (ACSS). The ACSS is a self-report measure that is designed to reflect an individual’s fear about suicide and capability to enact lethal self-injury if the person so desires it. Adequate reliability was found in this sample (Cronbach’s alpha = .85). Regarding convergent validity, the scale correlates with Linehans’s (1993) Fear of Suicide Scale (a measure which is designed to tap a roughly similar construct) on the Reasons for Living Inventory in the expected direction (r=−.48,
p<.0001). The ACSS total is also strongly correlated to a Beck Suicide Scale item that asks about one’s courage to kill oneself (r=.80, p=.007).

Joiner proposed that acquired capability is a separate factor from current distress/depression and focuses more on fearlessness about self-injury than on distress. Thus, as expected, the scale does not correlate with the Beck Suicide Scale (r=.09, p=.35) or the Beck Depression Inventory (r=.11, p=.240). This indicates discriminant validity for the measure.

Finally, the ACSS is significantly correlated in the expected direction with pain tolerance (r=.40, p<.0001) and pain threshold (r=.21, p=.013) as measured by a Somedic algometer (Type II; Somedic, Solletuna, Sweden). Individuals who scored higher on the ACSS had higher levels of pain threshold and pain tolerance.

In a recent study by Van Orden et al. (2007), a clinical outpatient population was used to test the hypothesis that past suicide attempts would predict acquired capability for suicide (via the ACSS). The number of past suicide attempts (i.e., 0, 1, or 2 or more) was found to significantly predict acquired capability ($F(2, 225) = 3.59, p = .029$). As predicted, the lowest ACSS scores were found in individuals with no past attempts ($M = 2.55, SD = .81$), followed by individuals with a single attempt ($M = 2.68, SD = .90$). The highest scores were reported by individuals with 2 or more past suicidal attempts ($M = 3.13, SD = .87$). These results are indicative of good validity.

**Data Analytic Strategy**

A total of six meditational analyses will be examined. Impulsiveness as measured by both the IBS and BIS will be assessed as to its relationship with the acquired capability for suicide. According to Baron and Kenny (1986), four criteria must be met in order to establish a significant meditational effect. To test the hypothesis that PPES scores will serve as a mediator of any significant relationship between BIS and acquired capability scores (as measured by ACSS, pain tolerance/threshold), meditational analyses were conducted. This same series of analyses was repeated with the IBS as the independent variable.

First, a regression was run to test if the predictor variable (BIS & IBS independently), significantly predicted the proposed mediating variable (PPES). Second, regressions were run to show whether or not the mediating variable (PPES) significantly
predicted the dependent variables (ACSS, pain tolerance/threshold). Third, a regression was run to assess whether or not the predictor variable significantly predicted the dependent variables. Fourth, a regression was run with the IV predicting the DV, now controlling for the PPES. This was done to see if the strength of the predictor variable decreased when painful and provocative experiences were controlled for. Additionally, a direct significance test of the mediated pathway model was conducted where applicable as instructed by Sobel (1982).
RESULTS

Means and standard deviations for predictors and dependent variables, as well as their intercorrelations, are provided in Table 1.

*Painful and Provocative Life Experiences as mediator between impulsivity and the acquired capability for suicide.* To test the hypothesis that painful and provocative events (PPES) scores would serve as a mediator of any significant relationship between BIS and any of the three dependent variables (ACSS, pain tolerance/threshold), appropriate regression analyses were conducted. In this sample, BIS scores did not significantly predict ACSS scores, or pain tolerance/threshold scores. The mediational analysis could not be tested because the first assumption of the mediational model was not met: that is, the BIS was not correlated with ACSS (or Pain Tolerance/Threshold scores). BIS scores did significantly predict PPES scores ($\beta=.26$, $t=3.89$ $p<.0001$), and PPES scores predicted ACSS scores ($\beta=.43$, $t=6.82$, $p<.0001$), Pain Threshold scores ($\beta=.15$, $t=6.82$, $p<.044$), and Pain Tolerance Scores ($\beta=.41$, $t=5.887$, $p<.0001$). As already noted, BIS scores did not predict ACSS scores ($\beta=.03$, $t=.464$, $p=ns$).

Additional mediational analyses were conducted using a different measure of impulsivity, the IBS. Using the Impulsive Behavior Scale (IBS; Rosotto et al., 1998), identical analyses were run as before replacing the BIS with the IBS. IBS scores significantly predicted PPES scores ($\beta=.67$, $t=13.19$ $p<.0001$), and PPES scores predicted ACSS scores ($\beta=.43$, $t=6.82$, $p<.0001$), Pain Threshold scores ($\beta=.15$, $t=6.82$, $p<.044$), and Pain Tolerance Scores ($\beta=.41$, $t=5.887$, $p<.0001$). IBS scores significantly predicted ACSS scores ($\beta=.30$, $t=4.576$, $p<.0001$), Pain Tolerance Scores ($\beta=.33$, $t=4.73$, $p<.0001$), and Pain Threshold scores ($\beta=.16$, $t=2.10$, $p<.0001$). A direct significance test of the mediated pathway was conducted as suggested by Sobel (1982). This test was significant ($z=4.85$, $p<.001$) for ACSS scores, suggesting that Painful and Provocative Events (PPES) scores fully mediated the relationship between IBS scores and ACSS scores. When the PPES was controlled for, the relationship between the IBS and the ACSS was insignificant ($\beta=-.025$, $t=-2.62$, $p=.79$). This suggests that PPES scores fully mediate the relationship between impulsive behaviors and the acquired capability for suicide as measured by the ACSS. A significance test of the mediated
pathway was also conducted regarding the pathway from IBS to PPES to Pain Tolerance Scores ($z=3.72$, $p<.001$). This test was significant. When controlling for PPES scores, the relationship between IBS scores and Pain Tolerance scores ($\beta=.06$, $t=.647$, $p=0.52$) became insignificant. However, PPES scores did not seem to fully mediate the relationship between IBS scores and Pain Threshold Scores ($Z=1.76$, $p=.077$).

Additionally, a repeated-measures ANOVA was run in order to test whether or not pain tolerance levels increased as the experimental condition progressed. For both males and females, trial 1 was significantly higher than the four remaining trials. There were no significant differences between trials 2-5. See figure 1.
DISCUSSION

The interpersonal-psychological theory of suicidal behavior (Joiner, 2005) posits that an individual will not be able to enact lethal self-injury without the desire to do so, as well as the acquired capability. The role of impulsivity in this relationship is not yet fully understood. The purpose of this study was to examine Joiner’s (2005) hypothesis about the role of painful and provocative life experiences as a mechanism for the relationship between impulsivity and suicidal behavior.

Trait impulsivity as measured by the BIS significantly predicted levels of painful and provocative experiences, and painful and provocative events significantly predicted the acquired capability for suicide, but trait impulsivity as measured by the BIS did not predict the acquired capability to enact lethal self-harm, pain tolerance, or pain threshold. Therefore, the mediational analyses could not be conducted, since the prediction that BIS would be correlated to the dependent variables was not supported. One possible interpretation of these findings is that trait impulsivity in and of itself is not enough to gain the necessary ability to enact lethal self-harm; rather, the behaviors themselves are necessary. This is consistent with Joiner’s (2005) theory.

The IBS measures impulsive behaviors. This self-report questionnaire asks questions like “have you self-mutilated,” “have you been sexually promiscuous”, or “have you ever overdosed on prescription or illegal drugs”. This questionnaire is directed more towards behavioral aspects of impulsivity rather than trait impulsivity as measured by the BIS. Impulsive behaviors as measured by the IBS did significantly predict the acquired capability for suicide. The results from this second analysis provide a deeper insight into the relationship between impulsivity and the acquired capability for suicide. Trait impulsivity was not directly correlated with acquired capability for suicide. Higher levels of impulsive behaviors as measured by the IBS was significantly related to higher levels of acquired capability for lethal self-harm. Furthermore, Painful and Provocative Events fully mediated the relationship between the IBS and the ACSS, as well as pain tolerance. This suggests that impulsive traits alone may not be sufficient to gain the necessary acquired capability for lethal self-injury. Our data suggest that impulsive behaviors or acts may lead to higher levels of painful and provocative events. Only then will one’s ability to enact lethal self-injury increase, thus increasing fearlessness to do so.
if they desire. This lends further evidence to Joiner’s (2005) theory. It states that exposure to painful and provocative events are a potent variable in one’s ability to enact lethal self-harm. Individuals who show high levels of impulsive behaviors are more likely to be exposed to painful and provocative events. In fact, this relationship seems to be quite strong.

The ACSS may have important implications for the assessment of suicidal individuals and may also serve as an important research tool. Joiner’s (2005) theory suggests that individuals who have the desire for suicide, and have obtained the acquired capability for lethal self-injury, are at elevated risk for a suicide attempt. Patients exhibiting strong feelings of burdensomeness, and are experiencing a low sense of belongingness, are at higher risk for lethal self-injury. When these patients have also obtained high levels of acquired ability, they are considered to be at extreme risk. A tool designed to measure this ability is a necessary piece of the suicidal diagnostic tool kit. Results of Van Orden, Witte, Gordon, Bender, & Joiner (2008) suggest that targeting the construct of acquired capability may be a useful method of preventing future suicidal behavior. Some possible intervention strategies could include counseling patients against visiting suicide “how to” websites, which can lead to further habituation to the pain and threat involved in suicidal self-injury. Therapeutic interventions designed to decrease impulsive behaviors may decrease the chances of further habituation to painful and provocative experiences. This in turn may help to stall the further acquisition of the capability for lethal self-harm.

Limitations and Future Directions

The current study was consistent with Joiner’s (2005) interpersonal psychological theory of suicidality. This study was limited by several factors that may inform future research. This study is limited in its generalizability. Participants in this study consisted of undergraduate students. Another limitation involved the measures of impulsivity. Future research may want to use more comprehensive measures of impulsivity. Self-report measures such as the Urgency, (lack of) Premeditation, (lack of) Perseverance, Sensation Seeking Impulsive Behavior Scale (UPPS; Whiteside & Lynam, 2001), may help to further address specifically what types of impulsivity act as predictors of acquired capability. According to Whiteside & Lynam (2001), the construct of impulsivity has four distinct aspects (e.g., Urgency, Lack of Premeditation, Lack of Perseverance, and
Sensation Seeking). The UPPS was designed to encompass different factors of the broad construct of impulsivity. It would be useful to address this directly. Future studies that utilize multiple methods for measuring the symptoms of interest, would increase the degree to which the results could be confidently generalized across samples.

In sum, our results suggest a strong relationship between behavioral impulsivity and painful and provocative life events, as well as a strong relationship between painful and provocative life events and the acquired capability for suicide. Painful and provocative life events fully mediate the relationship between elevated impulsive behavior scores and the acquired capability for suicide.
Figure 1. Pain Tolerance means across trials.

Note: All analyses involving Pain Tolerance were run again without the mean scores from time one. There were no significant differences. All analyses were run again with pain tolerance trial one only. Numbers remained similar, even losing strength a bit.
Table 1
Means and Standard Deviations for, and Intercorrelations Between, All Measures

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Correlations significant at the 0.01 level (two-tailed) are delineated with a (**). Correlations significant at the 0.05 level (two-tailed) are delineated with a (*).

Note: IBS: The Impulsive Behavior Scale-Revised (Rossotto, Yager, & Rorty, 1994); higher scores indicate greater levels of behavioral impulsivity. PPES: The Painful and Provocative Events Scale (Bender, Gordon, & Joiner, 2007). Higher scores indicate greater exposure to painful and provocative life events. ACSS: The Acquired Capability for Suicide Scale (Bender, Gordon, & Joiner, 2007). Higher scores indicate higher levels of acquired ability for lethal self-injury. BIS: The Barratt Impulsivity Scale (Patton, Stanford, & Barratt, 1995). Higher scores indicate higher levels of trait impulsivity. PTOL: Pain tolerance scores. Higher scores indicate higher levels of pain tolerance as measured by the pressure algometer (Type II; Sometic, Solletuna, Sweden). PTHR: Pain Threshold. Higher scores indicate higher levels of Pain Threshold as measured by the pressure algometer (Type II; Sometic, Solletuna, Sweden).
APPENDIX
IRB APPROVAL FORM

Florida State
UNIVERSITY

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2763
(850) 644-8633 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 9/22/2005

To:
Kathryn Gordon
MC 1270

Dept.: PSYCHOLOGY DEPARTMENT

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Impulsivity and Mental Health

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Human Subjects Committee at its meeting on 9/22/2005. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals which may be required.

If the project has not been completed by 9/21/2006 you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. The principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000440.

cc: Thomas Joiner
HSC No. 2005.695-R
Impulsivity and Mental Health

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project entitled “Impulsivity and Mental Health”. This research is being conducted by Katie Gordon, a graduate student in the Department of Psychology at Florida State University working under the supervision of Dr. Thomas Joiner, professor of psychology in the Department of Psychology at Florida State University. I understand the purpose of their research project is to better understand how impulsive behavior coupled with risk taking behavior can lead to acquired capability to commit suicide. I understand to participate in this project I must be right-handed, a non-smoker, and have not ingested any sugared or alcoholic beverage for at least one hour prior to my participation. I have also not have taken any analgesics (e.g., aspirin, acetaminophen) or other pain suppressants (e.g., oxycodone with acetaminophen (Percocet) or propoxyphene with acetaminophen (Darvocet) for at least 8 hours prior to participation in the experiment. In addition, I understand that the experiment may involve exposure to activities that may be physically uncomfortable, although any discomfort I may experience will be mild and short-lived. I will also be asked to complete several questionnaires aimed at better understanding my personality. The total time commitment will be about an hour, and I will be compensated by receiving one credit point for my time.

I understand that I must be 18 years of age to participate. I understand that my participation is totally voluntary and I may stop participation at anytime. If I decide to stop participation, I will still be entitled to the compensation. All my responses to the tasks will be anonymous and will not be tied back to me personally. My name will not appear on any of the results. No individual responses will be reported in any publication. Only group findings will be reported. The data, identified only by subject code number, will be stored in a locked file cabinet and will be destroyed by August 31, 2008. My participation in this project will remain confidential to the extent allowed by law.

I understand there is a possibility of a minimal level of risk involved if I agree to participate in this study. I might experience anxiety or frustration when completing the tasks. I may also experience slight physical discomfort when completing the tasks. The research assistant will be available to talk with me about any emotional discomfort I may experience while participating. At my request, I may be given a referral for mental health services. I understand that while I am completing the questionnaires, the experimenter will look at my responses to the questions about suicide. This will be done for my safety. If my responses indicate that I may be at risk for suicide, the experimenter will offer to walk with me to the Psychology Clinic where I may speak with a therapist. I am also able to stop my participation at any time I wish.

I understand that this consent may be withdrawn at any time without prejudice, penalty, or loss of benefits to which I am otherwise entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.
I understand that I may contact Katie Gordon, M.S. or Dr. Thomas Joiner, Department of Psychology, 644-9362, for answers to questions about this research or my rights. Group results will be sent to me upon my request. If I have questions about my rights as a subject/participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, at (850) 644-8633.

I have read and understand this consent form.

(Signature) ________________________________ (Date) __________________________
REFERENCES


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BIOGRAPHICAL SKETCH

Theodore William Bender

Curriculum Vita

Educational History

2005-Present
Florida State University
Major Area: Clinical Psychology
Major Professor: Thomas Joiner, Ph.D.
Masters Thesis: Impulsivity and Suicidality: A Test of the
Mediating Role of Painful Experiences

2001-2004
Florida State University, Bachelor of Science
Major Area: Psychology
Minor Area: Biology

Honors/Awards

Florida State University Council on Research and Creativity (SCRC) grant in the amount of $5,000 dollars. This grant was designed to support the development of research and creative endeavors by FSU graduate students. Awarded in 2005.

Publications in Peer-Reviewed Journals

Journal Articles


Book Chapters


Papers Currently Under Editorial Review


Teale, N.E., Bender, T.W., Selby, E., & Joiner, T.E. Jr. The role of pain and provocation in impulsivity and suicide.

Current Projects & Papers in Preparation (in alphabetical order)


Holm-Denoma, J., Bender, T., Richey, T., Schmidt, B., Joiner, T. The latent structure of food-restricting: taxometric investigation and construct validation

Papers and Posters Presented


**Clinical Experience**


Duties included individual therapy, screening interviews, psychoeducational assessments, and emergency risk assessments. Supervisors: Jeanette Taylor, Ph.D.; Donald R. Kerr, Ph.D., Natalie Sachs-Ericsson, Ph.D., Thomas Joiner, Ph.D.

*August 2007-present. Psychological Trainee, Florida State University Crisis Management Unit, Tallahassee, Florida.*

Duties include assisting Florida State University police officers in their response to mental health crisis phone calls assessing the risk level of the client, and formulating a plan according to the determined level of risk with the client and police officer. Supervisor: Joyce Carbonell, Ph.D.

*August 2008-August 2009. Assistant Director/Psychological Specialist, Florida State University Psychology Clinic, Tallahassee, Florida.*

Duties included assisting graduate student therapists (who see approximately 70 clients per week) in carrying out clinic policies and procedures at a community mental health center; oversight of day-to-day activities of the clinic; managing the clinic research database; organizing weekly didactic presentations for therapists and supervisors; providing individual and group therapy to clients; community outreach; emergency screenings/risk assessments; and conducting psychoeducational assessments for clients. Supervisor: Thomas Joiner, Ph.D.

**Teaching Experience**

*Invited Guest Lecture to Undergraduate Psychology Courses*


**Lab Instructor**, Sensation and Perception. Florida State University: Fall, 2004 (2 sections, 25 students each section).
Spring, 2005 (2 sections, 25 students each section).
Summer, 2005 (3 sections, 25 students each section).
Fall, 2006 (2 sections, 25 students each section.)
Spring 2007 (2 sections, 25 students each section.)
Summer 2007 (2 sections, 25 students each section)
Fall 2007 (2 sections, 25 students each section)
Spring 2008 (2 sections, 25 students each section)

Course Instructor, Clinical and Counseling Psychology. Florida State University
Fall, 2008 (1 section, 50 students)
Spring, 2008 (1 section, 50 students)
Summer, 2008 (1 section, 50 students)

Professional Affiliations and Memberships

Student Member, Association for Behavioral and Cognitive Behavioral Therapies (ABCT).