



## **Loneliness, Burdensomeness, and the Emergence of Suicidal Ideation in Real Time: An EMA Research Case Study of the Interpersonal Theory of Suicide**

*Poster presented at the American Association for Suicidology Annual Conference*

*April 2020*

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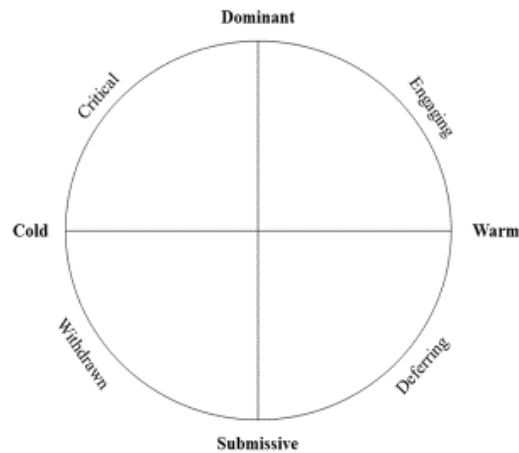
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While the interpersonal theory of suicide (ITS; Joiner, 2007) identifies interpersonal stressors such as *thwarted belongingness* and *perceived burdensomeness* as proximal predictors of suicidal ideation (SI), only a limited number of studies have examined the role of these experiences at the momentary level in the emergence of SI (e.g., Hallensleben et al., 2019; Kleiman et al., 2017). To date, there have been no empirical investigations evaluating the impact of ITS variables on SI arising in the context of dysregulating interpersonal events. Presumably, perceptions of emotional distance and disconnect during social interactions serve as momentary triggers for feelings of loneliness and burdensomeness, which according to the ITS may increase risk for suicidal thoughts. However, studies are lacking that examine the influence of interpersonal perceptions on experiences of loneliness and burdensomeness, or how these constructs interact to affect proneness to suicidal thoughts and impulses.

The impact of interpersonal beliefs and perceptions on factors such as affect regulation, stress management, and psychiatric functioning have already been well-documented through empirical research on the interpersonal circumplex model of personality (IPC) (Leary, 1957; see Figure 1). The IPC is rooted in interpersonal theory, which posits that one's interactional style can be described using two orthogonal dimensions: dominance and warmth (Wiggins, 2003). Longitudinal diary studies have generally confirmed that momentary enactments of dominance and warmth between interaction partners are predictive of interpersonal ruptures (Kiesler, 1991; Pincus, Lukowitsky, Wright, Eichler, 2009), as well as psychotherapy outcome, fluctuations in blood pressure and heart rate, and effective management of feelings of distress (Fournier, Moskowitz, & Zuroff, 2011).

Despite the clear importance assigned to interpersonal perceptions within the ITS (e.g., burdensomeness as *perceived*), to date no study has examined the impact of perceptions of dominance and warmth on ITS constructs or the associations between interpersonal perceptions and momentary changes in suicidality. In particular, perceptions of interpersonal warmth seem likely to relate to feelings of loneliness and burdensomeness during social interactions. The current case study explores the connections between daily interpersonal events, affective states related to suicide in general and the ITS specifically, and perceptions of dominance and warmth, as these relate to the momentary emergence of SI and other self-destructive impulses during social interactions.

Figure 1  
Sample Interpersonal Circumplex model, with dimensions of dominance and warmth



## METHODS

### *Participant background and experience sampling protocol*

“Peter,” a single Caucasian man in his early 20s, was enrolled in residential treatment at the time of his participation in the broader study from which the current data is drawn. He reported a history of multiple suicide attempts of increasing lethality over time and chronic feelings of depression. Peter received a clinical diagnosis of unspecified PD with narcissistic traits (P) upon admission with co-morbid major depressive disorder. At the beginning of treatment, he identified his feelings of longing for closeness and fears of rejection as specific triggers for suicidal thoughts; he furthermore described a low sense of meaning and purpose in life, and longstanding feelings of alienation from peers.

Peter participated in the present study approximately two months after his admission to treatment; the informed consent process included permission to utilize individual data for case study purposes. After completing a series of baseline measures assessing personality functioning and psychosocial history, Peter participated in a 17 day experience sampling protocol in which he rated daily social interactions lasting at least 3 minutes in duration. The experience sampling protocol assessed momentary perceptions of dominance and friendliness in self and interaction partner, affective experiences on the dimensions of sadness, anxiety, loneliness, burdensomeness, and hopelessness, and experiences of SI and other self-destructive urges (non-suicidal self-injury (NSSI) and externalizing impulses (getting into a fight or breaking something) (see Lewis & Ridenour, 2019 for more details). Peter completed a total of 44 ratings via smartphone using a secure study app hosted by LifeData ([www.lifedatacorp.com](http://www.lifedatacorp.com)).

## RESULTS

(1) We first utilized independent samples *t*-tests to examine general differences between self-destructive impulse events (“SDI;”  $n=12$  inclusive of SI, NSSI, and urges to get into a fight or break something (externalizing impulses or “Ext”)) and non-impulse events (“NI;”  $n=32$ ) for affective experiences and interpersonal perceptions of friendliness and dominance.

**Table 1. Affective experiences during SDI Events versus NI Events**

| Affect         | Event Mean (SD)         | <i>t</i> (df) |
|----------------|-------------------------|---------------|
| Sadness        | NI Events: 2.91 (1.15)  | -4.91 (42)**  |
|                | SDI Events: 4.83 (1.19) |               |
| Anxiety        | NI Events: 2.56 (1.46)  | -3.16 (42)**  |
|                | SDI Events: 4.08 (1.31) |               |
| Burdensomeness | NI Events: 2.78 (1.48)  | -2.29 (42)*   |
|                | SDI Events: 3.92 (1.44) |               |
| Loneliness     | NI Events: 3.34 (1.60)  | -2.72 (42)**  |
|                | SDI Events: 4.75 (1.29) |               |
| Hopelessness   | NI Events: 3.00 (1.30)  | -5.28 (42)**  |
|                | SDI Events: 5.17 (.94)  |               |

Note. NI Event = Non-impulse event. SDI Event = Self-destructive impulse event.

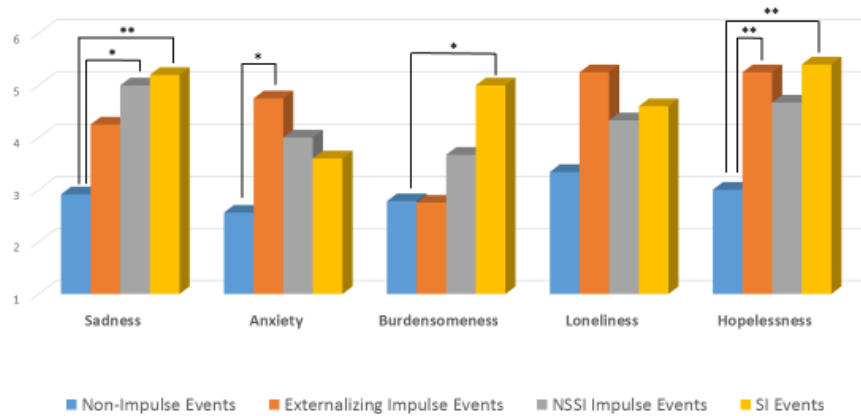
\*  $p \leq .05$  \*\*  $p \leq .01$

- SDI events were associated with higher negative affect across all dimensions (sadness, anxiety, burdensomeness, loneliness and hopelessness; see Table 1). There was also a trend in reports of lower feelings of friendliness (for Self) during SDI events,  $t(42) = 1.86, p = .07$ .

(2) We next utilized one-way analysis of variance to examine differences in Peter's interpersonal perceptions and affect across the three specific kinds of self-destructive impulses evaluated in this study (Ext, NSSI, and SI), compared to NI events.

- At the momentary level, Ext impulses ( $n=4$  discrete episodes) were characterized by significantly higher feelings of hopelessness and anxiety, compared to NI events (see Figure 2). Peter furthermore perceived his interaction partners as being significantly less friendly during Ext event interactions, compared to both NI and SI (but not NSSI) events (see Figure 3).
- At the momentary level, NSSI impulses ( $n=3$  discrete episodes) were characterized by greater feelings of sadness compared to NI events (but were rated similarly on sadness compared to the other kinds of SDI events). There were no other differences in interpersonal perceptions or affect states that distinguished NSSI events from other SDI event categories or NI events.
- At the momentary level, SI events ( $n=5$  discrete episodes) were characterized by greater feelings of sadness, burdensomeness, and hopelessness compared to NI events (Figure 2). Peter additionally described his interaction partners as being friendlier during interactions in which he experienced SI compared to Ext impulse events (Figure 3).

Figure 2  
Peter's momentary affective experiences during SDI and NI events



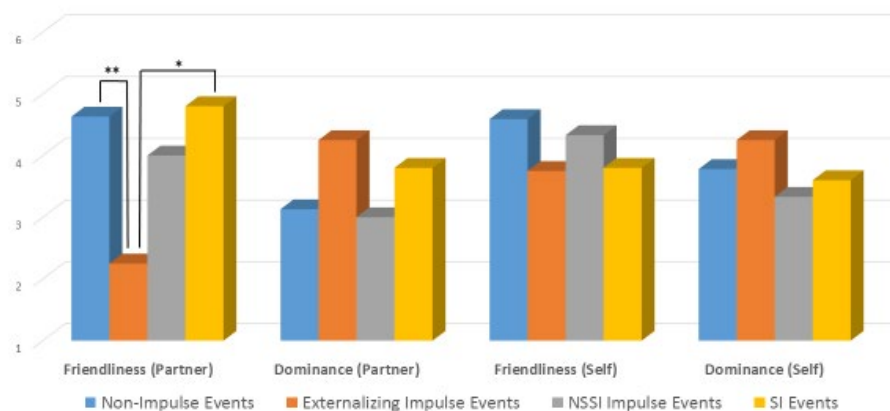
Note. NI Event = Non-impulse event. SDI Event = Self-destructive impulse event.

\*  $p \leq .05$  \*\*  $p \leq .01$

(3) Finally, reports of interpersonal perceptions and affect states in relation to momentary experiences of SI were examined.

- Significant associations were found between NSSI and SI events and sadness ( $r_{\text{NSSI}}=.58$ ,  $r_{\text{SI}}=.43$ ), burdensomeness ( $r_{\text{NSSI}}=.38$ ,  $r_{\text{SI}}=.45$ ), and hopelessness ( $r_{\text{NSSI}}=.49$ ,  $r_{\text{SI}}=.41$ ).
- A regression model with all perceptions and affects included as predictors showed sadness and partner friendliness were significant predictors of SI events ( $\beta_{\text{sadness}}=.55$ ,  $t(34) = 2.70$ ,  $p=.01$ ;  $\beta_{\text{friendliness(P)}}=.65$ ,  $t(34) = 3.63$ ,  $p=.00$ ).
- Pearson partial correlations showed that perceptions of partner friendliness were associated with SI events after controlling for feelings of sadness (partial  $r_{\text{NSSI}}=.52$ , partial  $r_{\text{SI}}=.47$ ).

Figure 3  
Peter's momentary interpersonal perceptions during SDI and NI events



Note. NI Event = Non-impulse event. SDI Event = Self-destructive impulse event.

\*  $p \leq .05$  \*\*  $p \leq .01$

## DISCUSSION

In treatment, Peter identified thwarted dependency needs as a primary trigger for suicidal thoughts. In his daily life, paradoxically Peter reported SI in instances where he perceived his interaction partners as being friendlier; these perceptions were accompanied by feelings of sadness, burdensomeness, and hopelessness, rather than feelings of comfort or assurance. It may be that for Peter, despite his desire for interpersonal closeness, being in the presence of individuals who were friendly and welcoming elicited anxiety about the potential of burdening them with his interpersonal needs, leaving him with feelings of hopelessness and heightened suicidality. In contrast, perceptions of coldness tended more often to mobilize Peter through eliciting externalizing impulses directed at other people or objects rather than himself. While feelings of loneliness did not appear to be associated specifically with suicidal thoughts for Peter, the ITS construct of burdensomeness, in addition to sadness and hopelessness, did appear to relate to momentary experiences of suicidal ideation.

The current case study expands on earlier research by linking fluctuations in ITS constructs to specific interpersonal events and self-destructive impulses including SI, and provides initial evidence for links between interpersonal perceptions and affect states related to the ITS during the momentary emergence of SI.

**Limitations:** This study examined data from a single research participant, and so the extent to which these results may generalize to broader psychiatric or community populations is yet to be determined. Additionally, the experience sampling protocol used in the current study did not assess SI and other self-destructive impulses that occurred outside of the context of interpersonal interactions, and so the relevance of these findings for SI occurring outside of interpersonal interactions is unknown. Findings should be considered exploratory.

**Conclusions:** The current case study provides support for the relevance of ITS constructs in the momentary emergence of SI, and suggests the potential importance of links between interpersonal perceptions of warmth, affect states related to burdensomeness and depression, and the emergence of SI in interpersonal contexts.

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This study was supported by a **Young Investigator Grant (YIG-1-086-17)** awarded to Dr. Katie Lewis from the **American Foundation for Suicide Prevention**. Any opinions, findings, and conclusions or recommendations expressed in this presentation are those of the author and do not necessarily reflect the views of AFSP.