EMOTIONAL CASCADES AND UNDERSTANDING THE CHAOS AND COMPLEXITY OF BORDERLINE PERSONALITY DISORDER

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Borderline Personality Disorder

Turbulent Emotions
Dysregulated Behaviors
Suicidal Behavior/Self-Injury
Stormy Relationships
Vulnerability

Genetic
Biological
Social/Familial

Psychopathology

Borderline Personality Disorder
Self-Injury/Suicide
Eating Disordered Behavior

Emotional Mechanisms!
Emotional Cascades
Increased Emotional Intensity

**EMOTIONAL CASCADE**

- Emotion
- Rumination
- Physical Sensations
- Increased Emotional Intensity
- Behavioral Dysregulation

**EMOTIONAL CASCADE**
Increased Emotional Intensity

Emotion

Rumination

Physical Sensations

Increased Emotional Intensity

RELIEF

EMOTIONAL CASCADE

Behavioral Dysregulation
Rumination Induction

Selby et al. (2009)

J Abnormal Psy
Selby et al. (2009)

J Abnormal Psy
Do Emotional Cascades Predict Future Dysregulated Behaviors?
Experience Sampling
<table>
<thead>
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<th>_behavior</th>
<th>number</th>
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<tbody>
<tr>
<td>Alcohol Use</td>
<td>50</td>
<td>45.3%</td>
</tr>
<tr>
<td>Reckless Driving</td>
<td>14</td>
<td>20.3%</td>
</tr>
<tr>
<td>Self-Injury</td>
<td>25</td>
<td>13.8%</td>
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<tr>
<td>Impulsive Shopping</td>
<td>21</td>
<td>25.6%</td>
</tr>
<tr>
<td>Marijuana Use</td>
<td>116</td>
<td>34.2%</td>
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<tr>
<td>Binge Episode</td>
<td>62</td>
<td>36.8%</td>
</tr>
<tr>
<td>Physical Fight</td>
<td>9</td>
<td>4.4%</td>
</tr>
<tr>
<td>Threw Object</td>
<td>20</td>
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</tbody>
</table>
Predictive Validity

Signal 1

High Lag-Rumination

$\gamma = .18^*$

High Lag- Negative Emotion

$\gamma = .20^*$

$\gamma = .17^*$

Selby & Joiner, 2013, *PDTRT*

Signal 2

Immediate Future Dysregulated Behavior
3-Way Interaction Predicting Occurrence of a Dysregulated Behavior

The hypothesized three-way interaction between BPD symptoms, lag-rumination, and lag-negative emotion prospectively predicting the occurrence of dysregulated behavior was significant ($t = 3.39, p < .001$). As demonstrated in Figure 1, those with higher levels of BPD symptoms, rumination, and negative emotion at one signal had the highest probability of a subsequent behavior. Tests of simple slopes indicated that BPD symptoms, at high lag levels of lag-rumination and lag-negative emotion, significantly predicted increased probability of a behavior occurring ($t = 3.39, p < .001$). When the interaction was examined at high BPD symptoms, with high levels of negative emotion and low levels of rumination, the interaction was not significant ($t = 1.44, p = .15$). The interaction for high BPD symptoms with low negative emotion and high rumination also was not significant ($t = 1.62, p = .11$).

Discussion

Consistent with our predictions, a significant three-way interaction was found, which indicated that at high levels of negative emotion and rumination, those with BPD had an elevated probability of engaging in a dysregulated behavior beyond those with low levels of BPD symptoms. Importantly, this three-way interaction maintained significance even when controlling for key co-variates. Findings provide support for an important part of the emotional cascade model and warrant further research on emotional cascades and dysregulated behaviors.

There were some limitations to note. First, these data were only able to address temporal precedence of the model-relevant variables and cannot be used to test the potential causal effects of emotional cascades on dysregulated behavior. Similarly, these data are self-reported and subject to the biases and perceptions of the participants, particularly with regard to whether the behaviors were difficult to control. Further, momentary measures of rumination and dysregulated behaviors used here need additional validation studies. Future studies should also examine the distinct behaviors in this study to determine if the behavior is actually difficult to control, and to determine specific aspects of negative emotion and rumination that may be involved in the behavior. We also did not assess...

Figure 1. Three-way interaction between borderline personality disorder (BPD) symptoms, lag-rumination, and lag-negative emotion to prospectively predict the probability of a dysregulated behavior occurring in the next 2 to 3 hr.

Note: High and low refer to 2 standard deviations above or below mean for lag-rumination (Rum) and lag-negative emotion (NE), and $P_{behavior}$ refers to the percentile probability of a dysregulated behavior occurring.

Selby & Joiner, 2013, *PDTRT*
Instability of Rumination

Stable

Unstable
Butterfly Effect

- Concept form Chaos Theory
- More precisely known as, “Sensitive Dependence on Initial Conditions”
- Easier to think of as a “Compounding effect”
- Even small differences can lead to very extreme differences
Butterfly Effect

• Concept form Chaos Theory
• More precisely known as, “Sensitive Dependence on Initial Conditions”
• Even small differences can lead to very extreme differences
• Easier to think of as a “Compounding effect”
• In some people, we see an extremely strong and sensitive connection between negative thought and negative emotion, particularly those with BPD
Butterfly Effect in Emotional Cascades

Signal 1
Lag-Rumination
Lag-Negative Emotion

2-3 Hours Later

Signal 2
Rumination
Negative Emotion

Selby et al., in press, Journal of Personality
Rumination Effects

Selby et al., in press, Journal of Personality
Negative Emotion Effects

Momentary Ruminating

Lag Negative Emotion

Mean

2 SD

- Fixed Lag Negative Emotion
- Random Effect - Upper Bound
- Random Effect - Lower Bound

Momentary Negative Emotion

Lag Negative Emotion

Mean

2 SD

- Fixed Lag Negative Emotion
- Random Effect - Upper Bound
- Random Effect - Lower Bound

Selby et al., *in press*, Journal of Personality
Butterfly Effect in Emotional Cascades

Signal 1
- Lag-Rumination
- Lag-Negative Emotion

2-3 Hours Later

Signal 2
- Dysregulated Behaviors

Selby et al., *in press*, Journal of Personality
Dysregulated Behaviors

Selby et al., *in press*, Journal of Personality
Take Away

- Demonstrated the Butterfly Effect with Emotional Cascades
- This same effect predicted dysregulated behaviors
- Dysregulated behavior may serve as an “attractor” point toward which dysregulated behaviors are drawn as emotional cascades progress
Emergence
Emergence
The Emotional Cascade Model

SELBY & JOINER (2009)

REV OF GEN PSY
The Emotional Cascade Model

Selby & Joiner (2009)

Rev of Gen Psy
The Emotional Cascade Model

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Selby & Joiner (2009)

Rev of Gen Psy
Treatment Implications
Dialectical Behavior Therapy

Cognitive–Behavioral Treatment of Borderline Personality Disorder

Marsha M. Linehan
Activities
Clinical Applications: Sleep

- **Poor Sleep Quality** (Selby, 2013, JCCP)
  - BPD symptoms predict problems with insomnia (initial, middle, and terminal) beyond relevant Axis I disorders
  - Potentially due to rumination/emotional cascades?

- **Nightmares**
  - During ESM those with BPD reported more nightmares (Selby, Ribeiro, & Joiner, 2013, Dreaming)
What Can Family Members Do?

1) Understand the emotion process of BPD
   - Knowing what is going on reduces negative reactivity and improves empathy, even in challenging situations
   - Even being able to give a process a name, such as “emotional cascade” can help

2) Help your loved one distract when upset
   - Work with them to come up with activities that they enjoy and are willing to do when distressed
   - Develop a “coping card” of distracting activities, it is easy to forget strategies when you are distressed

3) Try not to get frustrated
   - When we get frustrated, which can be easy at times, that can feed into the emotion dysregulation process
   - Building emotion regulation skills takes time!
Funding Acknowledgements:

- Brain and Behavior Research Foundation (NARSAD)
- Families for Borderline Personality Disorder Research
- National Institute of Mental Health
- Neil S. Jacobson Award for Outstanding and Innovative Clinical Research

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