Emotional Spillover across Social Interactions: The Emotional Rollercoaster Task Captures the Ups and Downs of Interpersonal Emotions Across Contexts

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Emotional Spillover

• Negative emotions are a part of life and have important functions in close relationships

• How to close relationship partners adjust to changing interpersonal situations?
Emotional Spillover & Repair

• Previous research on parent-child dyads showed that families who improved during treatment for children’s externalizing problems showed the ability to *emotionally repair* after a conflict discussion

![Diagram: A: Positive discussion (e.g., planning a hypothetical party) → B: Conflict discussion (e.g., curfew) → A: Positive discussion (e.g., planning a hypothetical vacation)]

• Design involves setting up a situation where carryover effects can occur (i.e., spillover)

• Challenges of this A-B-A design relate to conflicts being heterogeneous:
  • Can elicit different types of emotions (anger, worry, neutral) at different intensities
  • Not always evocative; might depend on age

Granic et al., 2007; Hollenstein & Lewis, 2006
The Current Study

• Two guiding questions:
  • Can we examine dyadic repair from *specific* types of emotional experiences (e.g., sadness, worry)?
  • Are some negative emotional contexts harder to repair than others?

• Task design goals:
  • Maximize carryover effects across contexts
  • Be appropriate for a broad range of ages
  • Allow examining multiple opportunities for repair
Participants

- 96 mother-daughter dyads
- Typically-developing community sample
- Adolescents aged 13-16 years old

Procedure

- Lab visit
- Emotional Rollercoaster task: Five 3-minute discussions, ABABA design

Happy/Excited ➔ Worried/Sad ➔ Proud ➔ Frustrated/Annoyed ➔ Grateful

Socioemotional Flexibility in Mother-Daughter Dyads: Riding the Emotional Rollercoaster Across Positive and Negative Contexts

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Socioemotional flexibility is a dyad-level indicator of adaptive interpersonal emotion regulation, and involves the temporal dynamics of shifting in and out of emotion states over time and the range of emotional states expressed during interpersonal interactions. Higher flexibility is associated with better psychosocial adjustment. In line with the Flex3 model, flexibility during interactions between 96 mothers and their adolescent daughters (Mm = 13.99 years) at 2 different time scales were examined in the current study: (a) within positive and negative emotional contexts (emotional flexibility); and (b) between positive and negative emotional contexts (reactive flexibility). Mothers and daughters completed the emotional rollercoaster task—a series of 5 min discussions on 2 different times—times they felt the following strong emotions toward each other: (a) happy-excited, (b) worried/sad, (c) proud, (d) frustrated/annoyed, and (e) grateful. In general, higher dynamic (within-discussion) flexibility and moderate levels of flexibility across discussions were associated with lower internalizing symptoms and higher relationship quality. Results support the Flex3 model and also suggest that in addition to emotional valence (positive vs. negative), specific emotion contexts (e.g., sad vs. frustrated) differentially influence socioemotional flexibility in mother-daughter dyads.

Keywords: flexibility, dynamic systems, psychosocial adjustment, internalizing problems, mother-adolescent interactions

Lougheed & Hollenstein, 2016
Measures

• Modified Positive and Negative Affect Schedule
  • 10 emotion items, rated from 1 (not at all) to 5 (extremely)
• Measured at baseline and immediately after each discussion
• Self-reported emotions were observed in the expected directions for both mothers and daughters
Psychosocial Adjustment
• Depression, General Anxiety, Social Anxiety

Expressed Emotions
• Coding with five-code SPAFF

<table>
<thead>
<tr>
<th>Code</th>
<th>Expressions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externalizing Negative Emotions</td>
<td>Anger, Contempt</td>
</tr>
<tr>
<td>Internalizing Negative Emotions</td>
<td>Sadness, Worry</td>
</tr>
<tr>
<td>Neutral</td>
<td>Expressions neither negative nor positive</td>
</tr>
<tr>
<td>Interest/ Curiosity</td>
<td>Active interest, validation</td>
</tr>
<tr>
<td>Positive Emotions</td>
<td>Humor, Joy, Affection</td>
</tr>
</tbody>
</table>
## Data Preparation: Dyadic time series to state space grid

<table>
<thead>
<tr>
<th>ID</th>
<th>Time</th>
<th>Discussion</th>
<th>Daughter</th>
<th>Mother</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>Happy/ Excited</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Happy/ Excited</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Happy/ Excited</td>
<td>Neutral</td>
<td>Neutral</td>
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<tr>
<td>3</td>
<td>3</td>
<td>Happy/ Excited</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>Happy/ Excited</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>Happy/ Excited</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

![State space grid diagram](image)
Discussion 1: Happy/Excited

- Positive
- Interest
- Neutral
- Internalizing
- Externalizing

- Externalizing
- Internalizing
- Neutral
- Mother
- Interest
- Positive

(duration: 5, 10, 15, 20, 25)
Socioemotional Flexibility

The ability to adjust emotions according to situational demands
- Dispersion:
  - Range of dyadic states across the grid
- Transitions:
  - Number of changes between cells on the grid

Expected to find that *adjustment* (internalizing symptoms, relationship quality) is related to how parents and teens will manage the ups and downs of changing situations

Hollenstein et al., 2013
Research Question and Hypothesis

Are dyad-level individual differences in flexibility associated with psychosocial adjustment (depressive, general anxiety, social anxiety symptoms)?

Grimm, Ram, & Estabrook, 2017; Nagin, 2005
Results

Plots of the changes in flexibility across the five discussion tasks in terms of (a) Dispersion and (b) Transitions. *Note.* Error bars represent the standard error of the mean.

Low Flexibility: n = 24
Average Flexibility: n = 57
High Flexibility: n = 14

Lougheed & Hollenstein, 2016, *Emotion*
• Emotional Rollercoaster task elicited emotions in the expected directions
• Flexibility/Spillover/Repair: all groups showed similar patterns of change across discussions, just different levels
• Moderate level of dyadic flexibility was associated with better psychosocial adjustment (maternal internalizing symptoms, relationship quality)
Limitations and Future Directions

• Analysis:
  • Look at what emotions are expressed in addition to flexibility patterns
    • E.g., How long does it take to return to mutual positivity after a negative interaction?
  • Examine mediation across contexts
    • E.g., Do dynamics in Discussion 2 mediate the association between dynamics in Discussion 1 and Discussion 3?

• Task:
  • Counterbalance order of discussion topics?
  • More diverse sample
Thank you!

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Grant 386479-2011 from the Natural Sciences and Engineering Research Council of Canada held by Tom Hollenstein