Examining the Bi-Directional Relationship between Rumination and Co-Rumination in Early Adolescence

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Introduction
Cross-sectional studies suggest that rumination and co-rumination are highly correlated during early adolescence (Bastin et al., 2015).
Proponents of social learning theory posit that early co-ruminative experiences likely predict future increases in adolescent ruminative thinking and subsequent psychopathology (Schwartz-Mette & Rose, 2012).
However, there is little longitudinal evidence to support this hypothesis, and the direction of this relationship during early adolescence remains unclear.

Objective
To disentangle the direction of effect between ruminative thinking patterns and co-ruminative behaviors longitudinally in a community sample of early adolescents.

Methods
Participants
1,341 adolescents from five public middle schools in the Northeastern U.S.
51% girls
Age: M = 12.73, SD = 0.68, Range = 11-14
51% Non-Hispanic White, 21% Hispanic or Latinx, 9% Black or African American, 3% Asian, 15% multi-racial/ethnic, 1% other

Procedure
Self-report questionnaires were administered to students during school at three 6-month intervals between Fall 2016 (T1), Spring 2017 (T2) and Fall 2017 (T3)
Participation retention was 73% from T1-T3

Results
Rumination and co-rumination are bi-directionally related during early adolescence, specifically:
Co-ruminative behaviors during early adolescence promote future ruminative thinking patterns
Conversely, this ruminative thinking give rise to more subsequent co-ruminative behaviors.
These findings support the hypothesis proposed by social learning theory (Schwartz-Mette & Rose, 2012) and indicate a cycle of rumination and co-rumination that emerges as a result of early adolescent co-ruminative behaviors.
Future interventions addressing adolescent psychopathology may benefit from examining co-ruminative behaviors of boys and girls in order to reduce ruminative thinking and negative rumination-related outcomes.

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Figure 1. Autoregressive Cross-Lagged Path Model

Figure 2. Gender Differences

Table 1. Standardized Path Estimates

<table>
<thead>
<tr>
<th>Structural Path</th>
<th>θ</th>
<th>S.E</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRQ (T1) → CRQ (T2)</td>
<td>.35</td>
<td>.03</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>CRQ (T2) → CRQ (T3)</td>
<td>.33</td>
<td>.04</td>
<td>&lt;.001</td>
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<td>.03</td>
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<tr>
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<tr>
<td>CRSS (T1) → CRQ (T2)</td>
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</tr>
<tr>
<td>CRSS (T2) → CRQ (T3)</td>
<td>.23</td>
<td>.05</td>
<td>&lt;.001</td>
<td></td>
</tr>
</tbody>
</table>

Note: **p < .01; ***p < .001. Covariances, residual variances, and non-significant paths not shown.