Trouble for Twins and Their Fathers in Middle Childhood: Twin-Singleton Differences in Relationship Quality
Kayla N. Anderson, Martha A. Rueter, & Jennifer J. Connor

**Introduction**

Growing Twin Birth Rate
- Twin birth rate has risen from 1% to 3.41% in just the past 35 years (ASRM, 2012; expected to keep growing.
- Largely due to increased use of assisted reproduction (ART): various methods for medically or socially infertile couples or individuals to conceive children (Chauhan et al., 2010).
- 5 million + children conceived after IVF alone since 1978. 20 - 30% of births are twins (CDC, 2014; ESHERE, 2014).

Parent-Child Relationships in Twins Families
- At early childhood, twins present a risk for parent-child relationships relative to singleton children (Boivin et al., 2005; Golombok et al., 2007; Thorpe et al., 2003).
- Parent-child relationship risks warrant specific attention especially how they are related to negative long-term adjustment outcomes for children and their families (Steinberg, 2001).
- Little is known about twin-parent relationships generally after early childhood (except: Barnes & Bourtell, 2013).
- To our knowledge, no research examining ART-conceived parent-twin relationships with parent-singleton relationships after early childhood (age 5).

**Twin Research Limitations: Informing the Approach**

- Nearly all studies examine mother-twin relationship quality, and many use mom self-report data of interactions (Boivin et al., 2005; Golombok et al., 2007; Olivennes et al., 2005).
- Father-child relationships are also important for children’s adjustment (Cabrera et al., 2000).
- Self-reports: positively biased when kids are highly wanted?
- Parents may interact differently with children in systemic settings where multiple family members are present instead of in dyadic settings where only one parent and one child are present (Kreppner, 2002).
- Children may also interact differently towards their parents relative than their parents act towards them (Rueter et al., 2009).
- Children’s interactions towards parents must be considered.
- To overcome these limitations, we use: observational data on family as a whole.

Relative to ART singletons, what are parent-child relationships like in ART twin families once kids reach middle childhood (aged 6-12)?

**Methods**

Reproductive Medicine Center: ART children born 1998-2004

- 82% survey response
- Live in State: 57 families: observation rate 51% response rate

**Sample Demographics**
- 57 families: 80-6;12 year old ART children; n = 30 twins, 50 singletons (23.1% twin rate)
- M child age = 8.59 (SD = 1.29); 50% male.
- Mothers: 95.1% White; 83.6% B.S./B.A.
- Fathers: 95.9% White; 65.2% B.S./B.A.

**Procedure & Measurement**

Families were given 15 minutes to discuss 32 cards that described activities/behaviors that may be important to their family. Families were asked to come to a conclusion about the 3 most and 3 least important activities/behaviors to their family.

**Iowa Family Interaction Rating Scales (Melby et al., 1998)**
- Global ratings of parent-child interactions
- Reliability: 49.1% of families assessed by 2 coders

**IFIRS Scales: The Present Study**
- Communication: Ability to convey thoughts, clearly express information, clearly point of view (ICCs: .49 - .71).
- Warmth: Expression of praise, care, support for others; both verbal and non-verbal warmth (ICCs: .71 - .88).
- Listener Responsiveness: Ability to listen, attend, and acknowledge others while they are speaking (ICCs: .32 - .69).
- Control: Attempts to influence/dominate the conversation or others behavior. Are attempts successful? (ICCs: .60 - .87).
- Hostility: Displays of critical, angry, or disapproving behavior; both verbal and non-verbal hostility (ICCs: .38 - .76).

**Analysis Plan**
- Testing ART singleton and ART singleton differences in parent-child relationship quality while controlling covariates
- Covariates: Parent education (1 = did not complete high school to 7 = doctorate); child sex (1 = female, 2 = male).
- Nestede ANCOVAs using SPSS 22.0 MIXED MODELING.

**Results**

**Preliminary Analyses**
- There were no significant differences between ART twin and ART singleton families on: father age, child age, mother education, father education, income, or child sex.

**Interaction Differences: ART Twins & Singleton**

- Mothers’ Interaction Towards Children

<table>
<thead>
<tr>
<th>F</th>
<th>b</th>
<th>d</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>2.50</td>
<td>-0.57</td>
<td>0.37</td>
</tr>
<tr>
<td>WM</td>
<td>1.27</td>
<td>-0.38</td>
<td>0.26</td>
</tr>
<tr>
<td>LR</td>
<td>0.89</td>
<td>-0.43</td>
<td>0.22</td>
</tr>
<tr>
<td>CL</td>
<td>0.31</td>
<td>0.32</td>
<td>0.13</td>
</tr>
<tr>
<td>HS</td>
<td>10.89</td>
<td>-0.56</td>
<td>0.76</td>
</tr>
</tbody>
</table>

**Fathers’ Interaction Towards Children**

<table>
<thead>
<tr>
<th>F</th>
<th>b</th>
<th>d</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>5.40</td>
<td>-1.06</td>
<td>0.54</td>
</tr>
<tr>
<td>WM</td>
<td>1.78</td>
<td>-0.62</td>
<td>0.31</td>
</tr>
<tr>
<td>LR</td>
<td>6.92</td>
<td>-1.03</td>
<td>0.61</td>
</tr>
<tr>
<td>CL</td>
<td>0.89</td>
<td>0.39</td>
<td>0.22</td>
</tr>
<tr>
<td>HS</td>
<td>5.49</td>
<td>0.50</td>
<td>0.54</td>
</tr>
</tbody>
</table>

**Children’s Interaction Towards Mothers**

<table>
<thead>
<tr>
<th>F</th>
<th>b</th>
<th>d</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>4.18</td>
<td>-0.66</td>
<td>0.47</td>
</tr>
<tr>
<td>WM</td>
<td>0.55</td>
<td>-0.25</td>
<td>0.17</td>
</tr>
<tr>
<td>LR</td>
<td>0.70</td>
<td>0.23</td>
<td>0.19</td>
</tr>
<tr>
<td>CL</td>
<td>8.31</td>
<td>-0.95</td>
<td>0.67</td>
</tr>
<tr>
<td>HS</td>
<td>5.72</td>
<td>-0.48</td>
<td>0.55</td>
</tr>
</tbody>
</table>

**Children’s Interaction Towards Fathers**

<table>
<thead>
<tr>
<th>F</th>
<th>b</th>
<th>d</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>4.36</td>
<td>-0.77</td>
<td>0.48</td>
</tr>
<tr>
<td>WM</td>
<td>4.17</td>
<td>-0.74</td>
<td>0.47</td>
</tr>
<tr>
<td>LR</td>
<td>3.41</td>
<td>-0.39</td>
<td>0.43</td>
</tr>
<tr>
<td>CL</td>
<td>7.05</td>
<td>-0.92</td>
<td>0.61</td>
</tr>
<tr>
<td>HS</td>
<td>0.20</td>
<td>-0.10</td>
<td>0.10</td>
</tr>
</tbody>
</table>

**Discussion**

**Why Father-Child Difficulties?**
- Concerns about mothers’ interaction towards twins appear to be unfounded by middle childhood; longitudinal data needed.
- Greater attention must be paid to father-child relationships in families with twins. Why might fathers have less optimum relationships with twins relative to singletons?
- One possibility: fathers may spend less time caring for their twins, and are less used to the demands associated with the day-to-day parenting of twin children (e.g., Ellison & Hall, 2003). As a result, their relationships may be less optimum.
- Something to explore: in ART families, fathers may be less likely to opt for treatments when twins are highly likely (Højgaard et al., 2007).

**Twin’s Interaction Towards Parents**
- Twins less engaged in positive communication and have less controlling behavior towards parents relative to singletons.

**Parenting after ART: Non-ART Comparisons**
- ART parents have more parenting stress (Cook et al., 1998), but also potentially more optimum parent-child relationships relative to parents of non-ART children (Hahn, 2001).
- Patients undergoing ART often desire twins (Højgaard et al., 2007) and can make treatment decisions that increase the probability of twins (Sharara, 2013). This “wantedness” may account for some variability in parent-twin interactions.

References

2. Chauhan SP, Scardo J, Hayes E, Abuhuamad AZ, Berghella V. Twins: prevalence, problems, and preterm births.
7. Steinberg L. We know some things: Parent-adolescent relationships in retrospect and prospect.
10. Rueter MA, Keyes MA, Iacono WG, McGue M. Family interactions in adoptive compared to nonadoptive families.
12. Sharara F. Despite significant financial incentives many couples still decline elective single embryo transfers (eSET).
13. Rueter MA, Keyes MA, Iacono WG, McGue M. Family interactions in adoptive compared to nonadoptive families.