

# The Attachment Theory and Emotional Development: A Twin Study

## Purpose: Does Sibling Status Impact Attachment and Emotional Development in Twin and Non-Twin Siblings?

This researcher hopes to increase the biopsychosocial well-being of sibling relationships by analyzing possible correlations between sibling status and both attachment and emotional development. Understanding possible advantages or disadvantages based in these factors is crucial during adolescence. In fact, Trias (2006) found this period is correlated with the most depressive symptoms in twin sets.

1. Does sibling status impact how adolescents attach to their sibling and primary caregiver?
2. Does sibling status impact emotional development within sibling and parent-child relationships, including dominance, social dependence, conflict, and conflict resolution?

## Background: Attachment Theory Describes Emotional Bonds Between Individuals

- Attachment Theory was created by John Bowlby (1969) and Mary Ainsworth (1970) to describe how infants would react after separation from a primary caregiver.
- Maternal Sensitivity Scales created by Ainsworth (1969) to assess attachment behaviors:



- Theory has since been applied to other age groups and relationships.

## Method 1: Population, Sample Size, and Recruitment

- 52 participants recruited through convenience sampling
  - ◆ 13 twin dyads, 11 singleton dyads, 4 unpaired singletons
    - Twins: 2 identical and 24 fraternal sets
    - Twins: 8 same-sex and 5 opposite-sex dyads
    - Singletons: 5 same-sex & 6 opposite-sex dyads; 4 unpaired siblings
  - ◆ 12-18 years of age
    - Average age of singletons: 15
    - Average age of twins: 16
  - ◆ Singletons no more than 4 years apart
    - Average age difference: 2-3 years

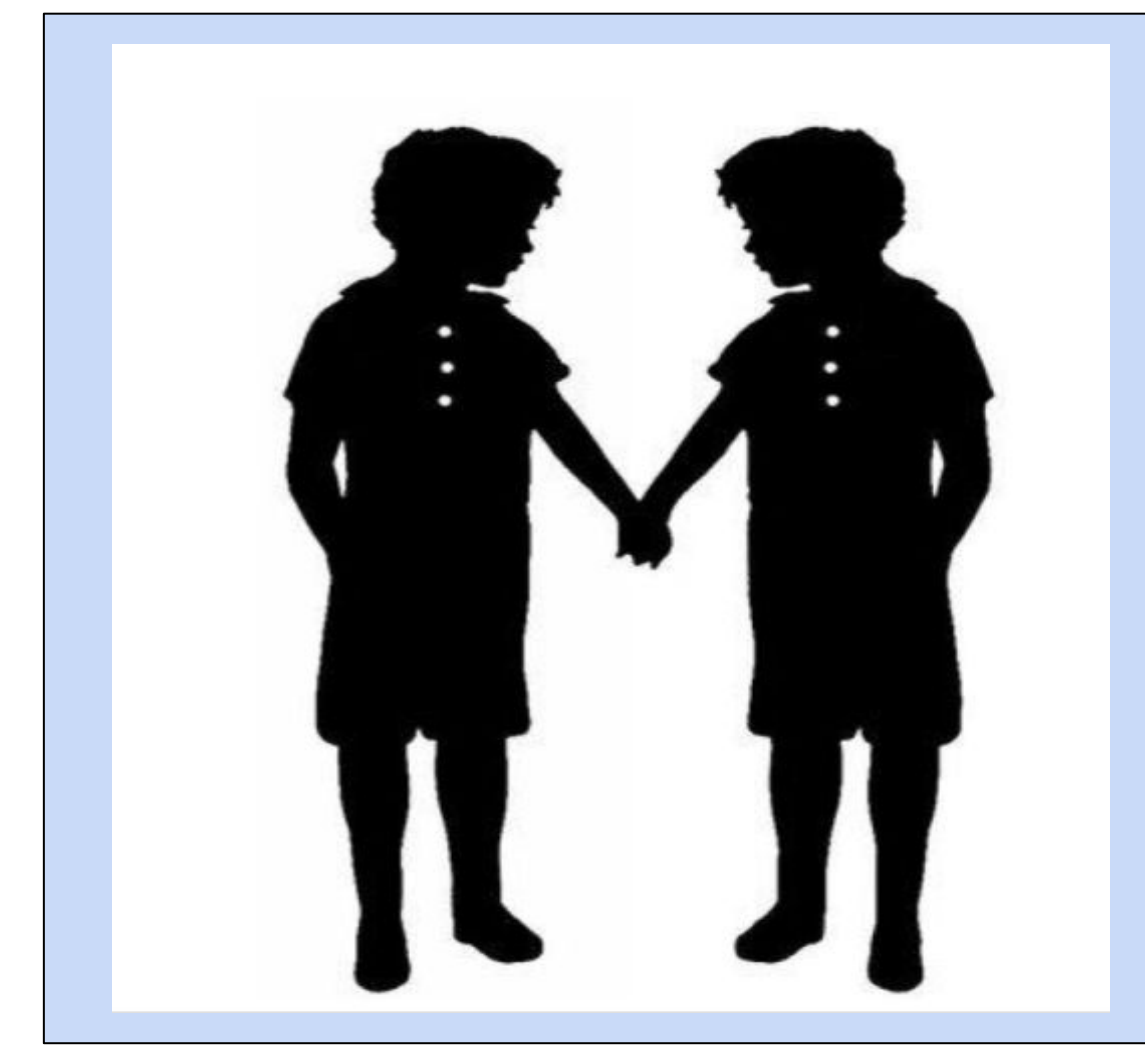
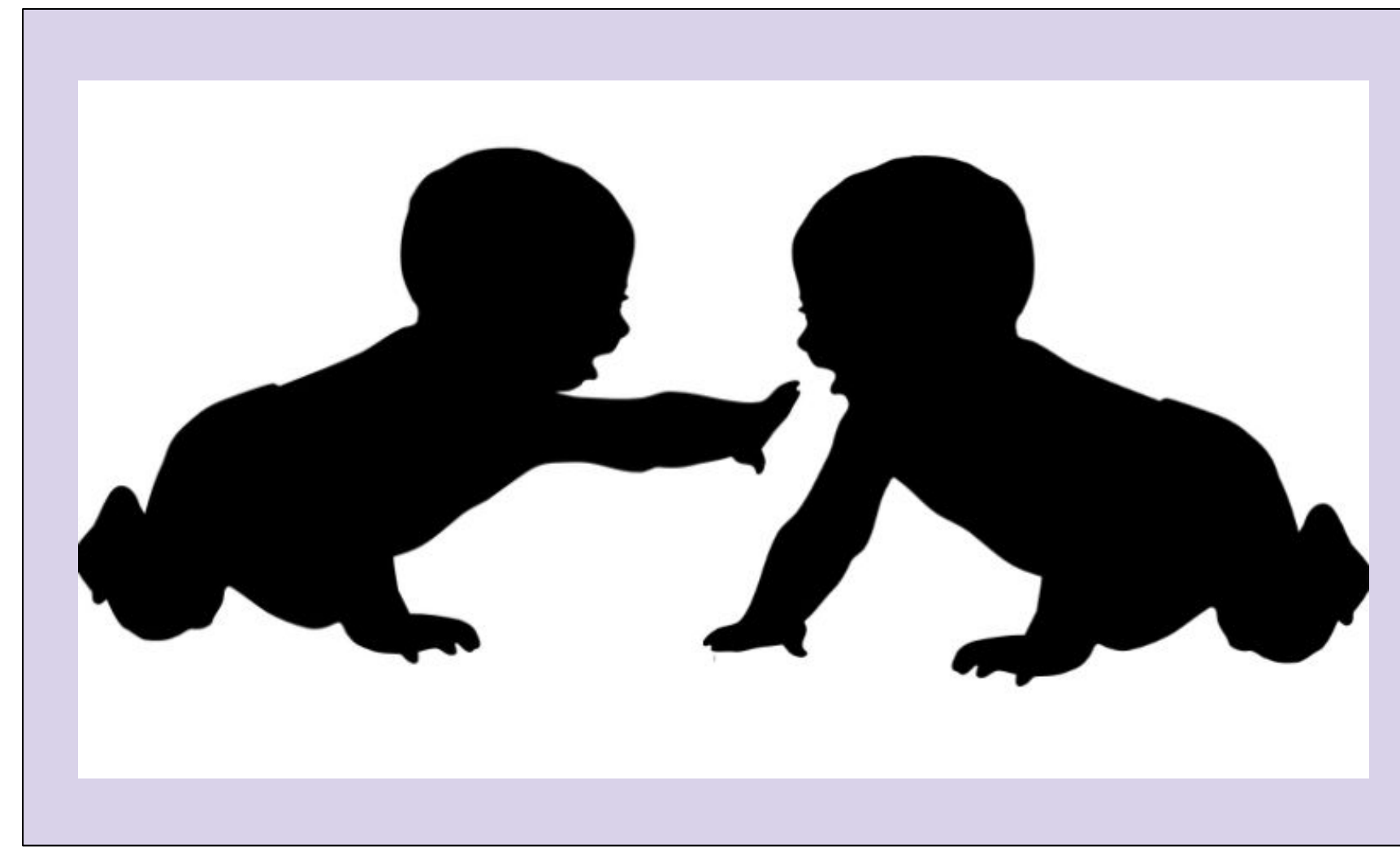
## Method 2: Survey Questions Addressed Emotional Attachment to Siblings and Caregivers

- 48-question survey (5-10 minutes):
  - ◆ 8 Questions: 1 informed consent, 1 code, and 6 demographic
  - ◆ 40 Questions Scored on Likert Scale:

1 Never	2 Rarely	3 Sometimes	4 Often	5 Always
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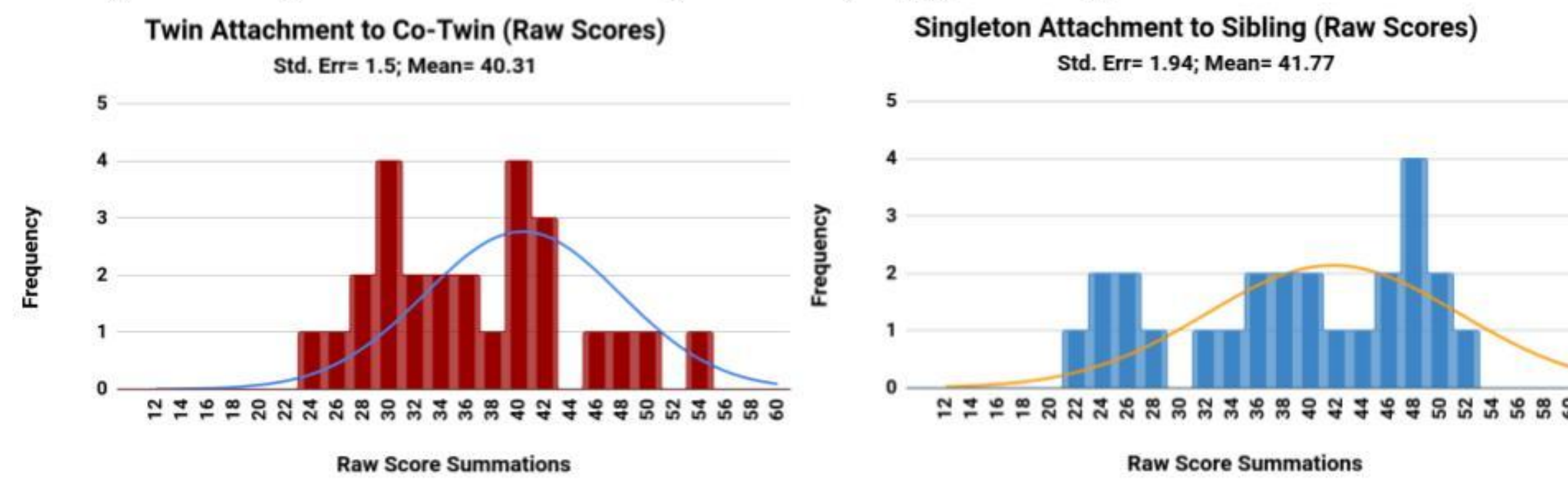
24 Attachment Questions	16 Emotional Development Questions
<ul style="list-style-type: none"><li>→ 12 sibling/ 12 caregiver</li><li>→ Questions created based on Ainsworth's "Maternal Sensitivity Scales"</li><li>→ Ex: My sibling responds to my emotions accurately.</li></ul>	<ul style="list-style-type: none"><li>→ 8 sibling/ 8 caregiver</li><li>→ Questions based on previous studies related to attachment theory</li><li>→ Ex: If a decision has to be made between the two of us, I get my way.</li></ul>

- Raw scores were calculated for each item.
  - ◆ "Never" & "Rarely" indicate "low" level of attachment
  - ◆ "Often" & "Always" indicate "high" level of attachment
- Separate sums were calculated for each individual.
  - ◆ 36 was the cut-off for low attachment (possible range of 12-60)



## Result 1: Twins and Singletons Have Similar Attachment

No statistical significance was found for how twins and singletons attach when using arbitrary cut-off. Raw scores, however, suggest a slight difference.

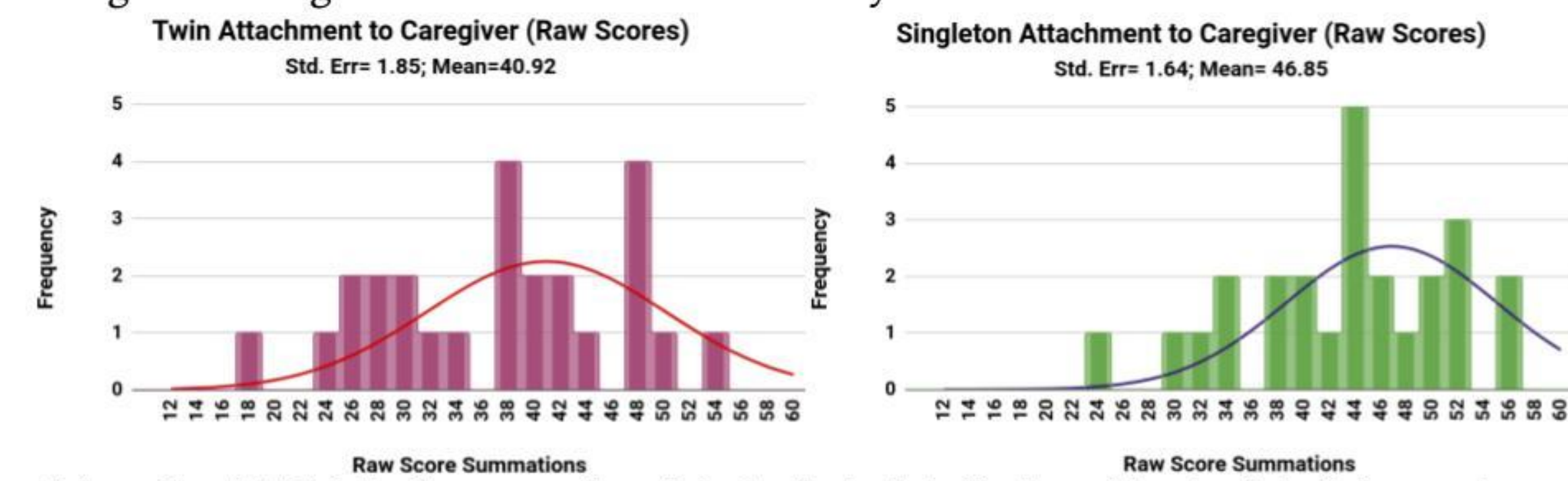


Figures 1 and 2. Distribution curves from t-tests displaying attachment levels of singletons and twins to their siblings from raw scores.

**Conclusion:** Twins and singletons attach to each other to a similar extent.

## Result 2: Singletons More Attached to Caregiver Than Twins

A statistical significance was found for how singletons and twins attach to their caregivers using both raw scores and arbitrary cut-off.



Figures 3 and 4: Distribution curves from t-tests displaying attachment levels of singletons and twins to their caregivers from raw scores.

**Conclusion:** Singletons are more likely to have a higher attachment to their caregiver than twins.

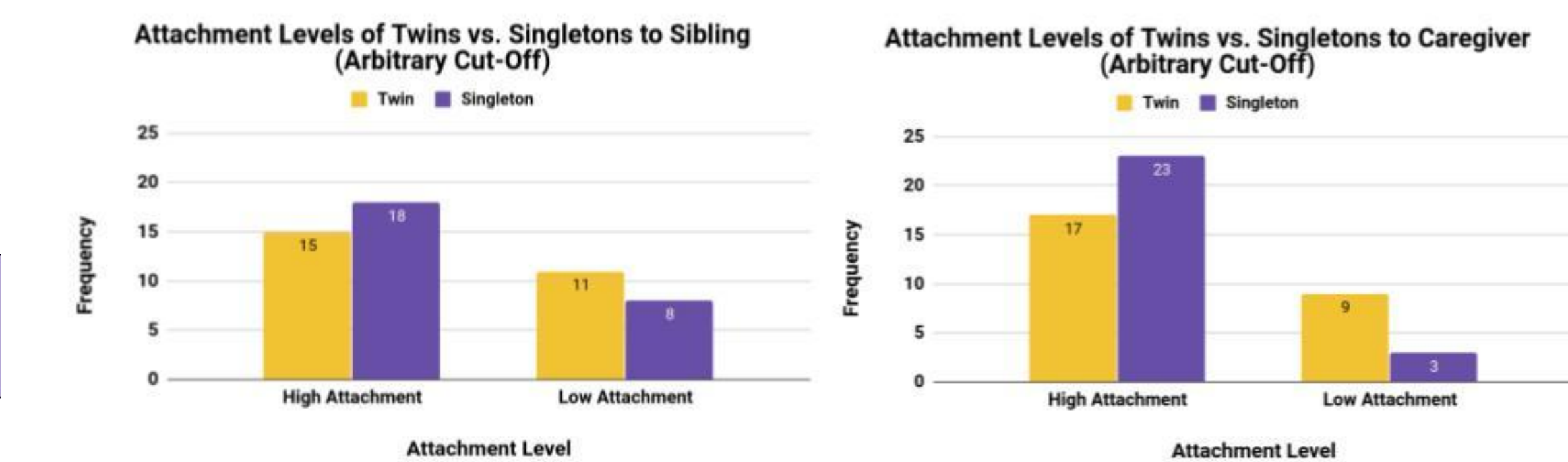


Figure 5. Frequency distribution of attachment levels in sibling-sibling raw scores show no statistical significance.

Figure 6. Frequency distribution of attachment levels in child-caregiver raw scores show statistical significance.

## Image Accreditations

**Image Center Right:**  
Crawling Baby Clipart - Baby Silhouette Clip Art [Digital image]. (n.d.). Retrieved January 13, 2019, from [https://www.clipartmax.com/middle/m2i8G6H7b1Z5Z5d3\\_crawling-baby-clip-art-baby-silhouette-clip-art/](https://www.clipartmax.com/middle/m2i8G6H7b1Z5Z5d3_crawling-baby-clip-art-baby-silhouette-clip-art/)

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Silhouette Infant Drawing Clip Art - Silhouette [Digital image]. (n.d.). Retrieved January 13, 2019, from <https://www.kisspng.com/png-silhouette-infant-drawing-clip-art-3865667/>

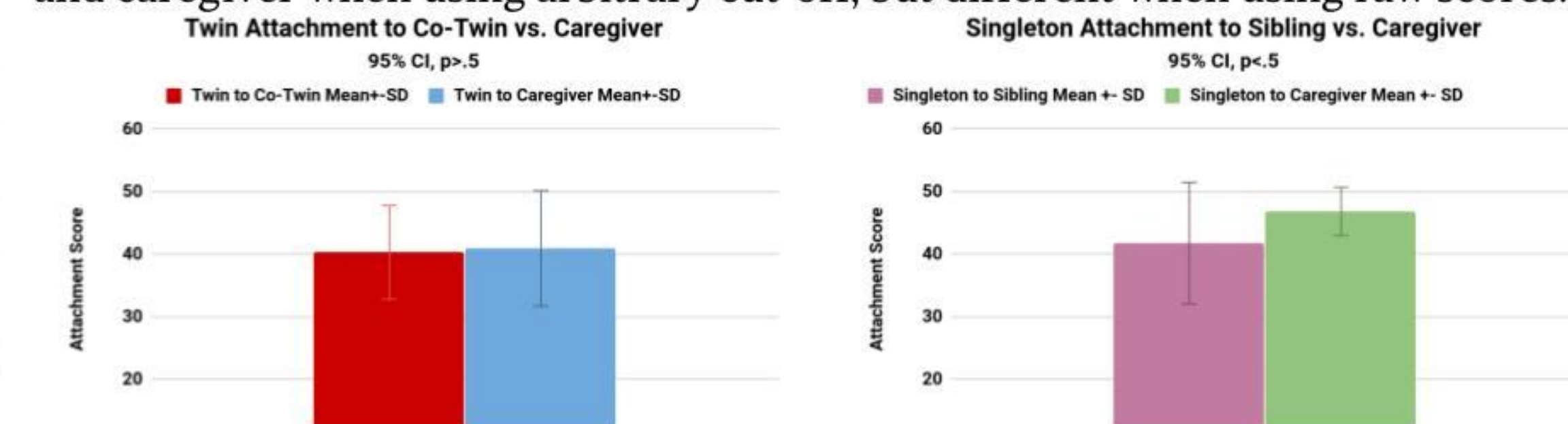
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T. (2019, January 7). Personalized Twin Silhouette Print Brother Sister Custom Black and White Nursery [Digital image]. Retrieved January 13, 2019, from [https://www.etsy.com/listing/80487653/personalized-twin-silhouette-print?ga\\_search\\_query=twin&ref=shop\\_items\\_search\\_1](https://www.etsy.com/listing/80487653/personalized-twin-silhouette-print?ga_search_query=twin&ref=shop_items_search_1)

**Image Top Right:**  
T. (2018, October 31). Tweedledee and Tweedledum Alice In Wonderland Silhouette Print Black and White Nursery Decor [Digital image]. Retrieved January 13, 2019, from [https://www.etsy.com/listing/77781041/tweedledee-and-tweedledum-alice-in?ga\\_search\\_query=twin&ref=shop\\_items\\_search\\_5](https://www.etsy.com/listing/77781041/tweedledee-and-tweedledum-alice-in?ga_search_query=twin&ref=shop_items_search_5)

All graphs and diagrams made by student.

## Results 3 and 4: Twins Have Similar Attachments to Twin and Caregiver while Singletons More Attached to Caregiver.

No statistical significance found between twins' attachment to co-twin vs. primary caregiver. Singletons, however, were found to have similar attachments to sibling and caregiver when using arbitrary cut-off, but different when using raw scores.

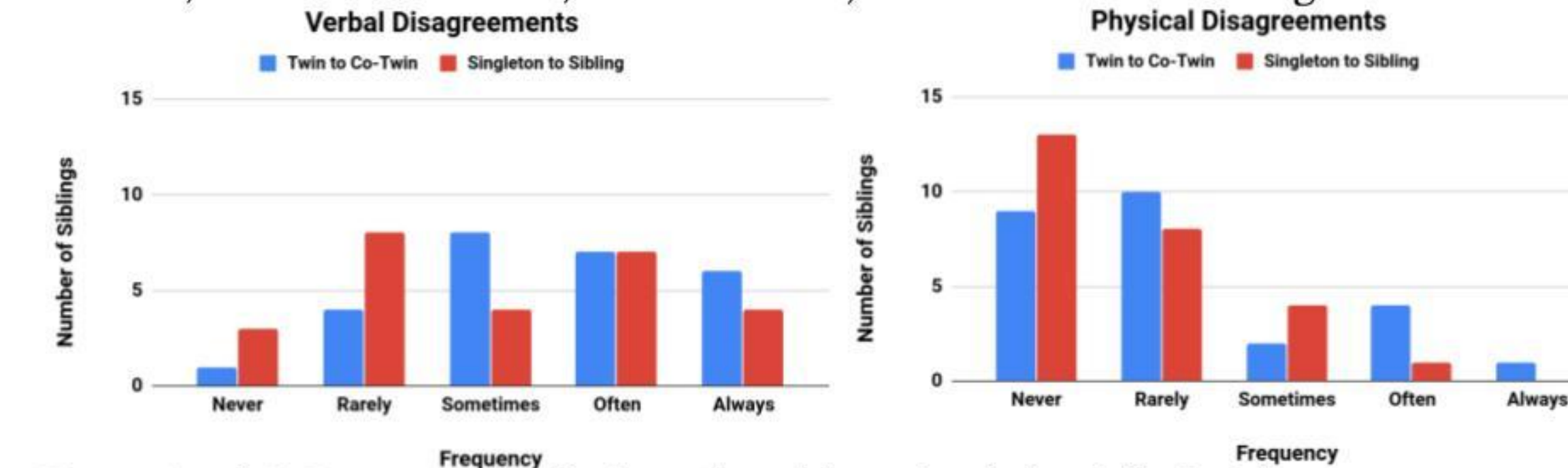


Figures 7 and 8. Column scatter plots from t-tests comparing attachment means of singletons and twins to their sibling vs. caregiver from raw scores.

**Conclusions:** Singletons more likely to have higher attachment to caregiver than to sibling, while twins more likely to have similar attachments to both.

## Result 5: Twins and Singletons Have Similar Emotional Development Scores

No statistical significance found for emotional development (social dependence, conflict, conflict resolution, or dominance) between twins and singletons.

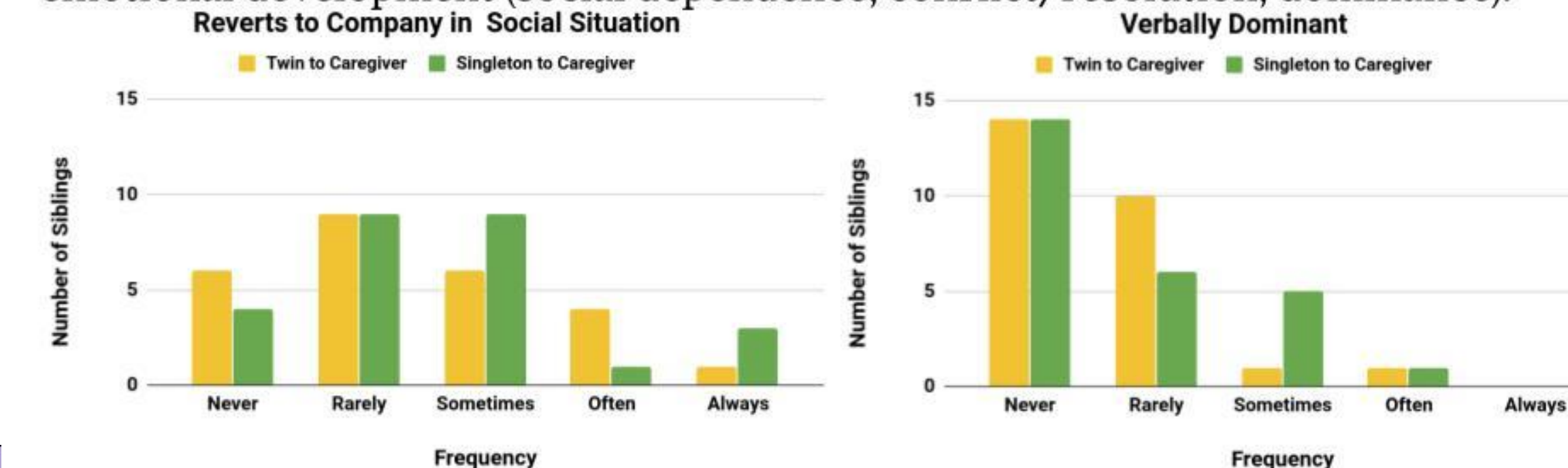


Figures 9 and 10. Frequency distributions of participants' verbal and physical disagreements.

**Conclusion:** Singletons & twins are equally likely to engage in verbal/physical conflict, be socially dependent, promptly resolve conflicts, and experience dominance within their relationships.

## Result 6: Twins and Singletons Have Similar Emotional Development Scores with Caregiver

No statistical significance found between twins and singletons & primary caregiver emotional development (social dependence, conflict/resolution, dominance).



Figures 11 and 12. Frequency distributions of participants' social dependence and verbal dominance.

**Conclusion:** Singletons & twins are equally likely to engage in verbal/physical conflict, be socially dependent, promptly resolve conflicts, and experience dominance in their relationships with their primary caregivers.

## Sources of Error: Sampling Issues and Response Biases

- **Convenience sampling:** introduces possibility of sampling bias that could skew findings, such as over-representation of fraternal twins.
- **Homogenous sample:** almost all replies taken from students attending (or related to students attending) same high school; more representative sample would draw from other portions of the population.
- **Social desirability bias:** results possibly unreflective of reality of siblings' circumstances, as lower or higher scores for certain questions conventionally considered to be more socially acceptable, which may have interfered with truthfulness of replies.
- **Sample size:** model sample would contain greater quantity of singletons and twins to increase accuracy of statistical conclusions.

## Conclusion 1: Parenting Trends May Explain Attachment

- Twins and singletons have similar attachment to their sibling.
  - ◆ Result is surprising-- twins are generally perceived to have a deeper connection (Figures 1, 2 and 5).
  - ◆ Results may be due to current trends of raising twins to be individuals vs. earlier "pairing" trends
    - Singleton-like treatment results in singleton-like attachments vs.
    - "Pairing" twins leads to enmeshment and codependency (Friedman, 2014)
- Singletons having higher attachment to caregivers is reflective of prior studies with adults (Figures 3, 4 and 6).
  - ◆ For ex. Singleton participants more likely to regard mothers as attachment figure than twins (Tancredy & Fraley, 2005).
- Parents of twins sometimes decrease their role as primary nurturer believing that their twins are each other's automatic companions (Friedman, 2014).
  - ◆ Could interfere with "monotropy" [strong attachment to mother] (Bowlby, 1969)
    - This attachment trend was only evident in singletons (Figure 8).
  - ◆ Perhaps lower attachment in twin to caregiver is NOT due to a higher attachment to co-twin, but to the differing roles each one plays in the twin's life [parent vs. sibling] (Figure 7).

## Conclusion 2: Social Mores May Explain Emotional Development

- Similar ages (adolescents) may introduce similar power dynamics
  - ◆ Equal comfort among either party to: 1) resort to violence to address conflict; 2) resolve conflict; 3) communicate needs of both sibling and themselves; and 4) revert to sibling's company as a peer in social situations.
- Caregiver and participant have an imbalance of power
  - ◆ Caregiver has the authority to: 1) speak for self and child; 2) resolve conflict; 3) discourage retaliation
  - ◆ Social mores may dictate caregiver-child interactions, which was seen in both singletons and twins.

## Future Research

- **Demographics:** Determine whether these variables affect levels of attachment and emotional development (e.g. gender, zygosity, age, socioeconomic status, heterogeneity, sample size, higher order multiples).
- **Variances:** Evaluate *within* twin and singleton sets, in addition to *between* these groups.
- **Conception:** in-vitro vs. natural conception
- **Language Development:** Impact of parent-child attachment on twin vs. singleton verbal development.
- **Caregiving Environment:** Impact of institutionalized care on twin and singleton attachment/emotional development.

## References

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