

## PEER RELATIONS

# Sibling Relations and Their Impact on Children's Development

Nina Howe, PhD, Holly Recchia, PhD

Department of Education and Centre for Research in Human Development, Concordia University, Canada December 2014, Rev. ed.

## Introduction

The majority of children around the world have at least one sibling. The sibling relationship is likely to last longer than any other relationship in one's lifetime and plays an integral part in the lives of families. Yet, in comparison to the wealth of studies on parent-child relationships, relatively little attention has been devoted to the role of siblings and their impact on one another's development. In recent decades, research has focused on sibling relations in early childhood, and the shift from examining the role of structural variables (e.g., age, birth order) towards more process variables (e.g., understanding of their social worlds) has proved to be a fruitful direction. Siblings are viewed as an integral component of family systems<sup>1,2</sup> and as an important context for learning and development<sup>3</sup> but there are a number of methodological and conceptual challenges to studying siblings from this perspective.

## Subject

In early childhood, four major characteristics of sibling relations are prominent. First, sibling interactions are emotionally charged relationships defined by strong, uninhibited emotions of a positive, negative and sometimes ambivalent quality. Second, sibling relations are defined by intimacy: as youngsters spend large amounts of time playing together, they know each other very well. This long history and intimate knowledge translates into opportunities for providing emotional and instrumental support for one another, engaging in pretend play, for conflict, and for understanding others points of view. Third, sibling relations are characterized by large individual differences in the quality of children's relations with one another. Fourth, the age difference between siblings often makes the issues of power and control as well as rivalry and jealousy sources of contention for children, but also provide a context for more positive types of complementary exchanges, such as teaching, helping, and caregiving interactions. Proadly speaking, the characteristics of sibling relations sometimes make them challenging for parents, because of the potentially

emotional and highly charged nature of the relationship. One issue that arises due to age differences is differential parental treatment. 34,35

# **Problems**

There are a number of methodological issues that plague the sibling literature. Birth order and age differences are confounded in many studies, thus it is challenging to distinguish between role and developmental differences. Recruiting families with young children and collecting data at home can be time-consuming, yet provides rich naturalistic data. Middle-class sibling dyads have generally been studied and therefore we know little about families with more than two children, single-parent families, from different socioeconomic groups, or from non-Western families, although there have been some studies of Mexican-American families.

## **Research Context**

There are a number of longitudinal studies that have followed siblings and families over early childhood and beyond. Most studies of siblings in early childhood have employed naturalistic observations of siblings interacting at home, usually with their mothers, although a few studies have also included fathers. Observational data is often complemented by sibling and parent interviews, questionnaires, hypothetical scenarios, structured tasks such as conflict negotiations, teaching tasks, or play sessions and measures of children's cognitive, emotional and social development.

# **Key Research Questions**

The basic question that has driven the research on sibling relations is why some dyads appear to get along so well and act as sources of emotional and instrumental support and companionship for one another, whereas other siblings have a much more troubled and conflictual relationship.<sup>2,4</sup> Following from this basic question, there are a number of key questions that have been raised:

- 1. How are the quality and nature of sibling relations associated with social-emotional outcomes, children's adjustment, children's later interactions in other relationships, and their understanding of their social worlds?
- 2. How should parents intervene in their children's conflicts? What are the connections between differential parental treatment (i.e., when one child is given preferential treatment) and sibling relationships?
- 3. What are the roles of age, birth order and gender in defining the nature and quality of sibling relations? How are individual differences in temperament associated with relationship quality?
- 4. How does the quality of earlier sibling relations affect sibling interactions over time?

# **Recent Research Findings**

Sibling relations provide an important context for the development of children's understanding of their social, emotional, moral and cognitive worlds. <sup>10,23</sup> In particular, siblings play an important role in the development of children's understanding of others' minds, namely their understanding of emotions, thoughts, intentions and beliefs. <sup>2,4</sup> Siblings seem to demonstrate an understanding of others' minds and emotions during real-life interactions long before they show this understanding on more formal assessments. <sup>4,6,33</sup> In particular, this understanding is revealed during episodes of teasing, pretend play, conflict resolution, teaching, and through

their use of emotional and mental language during conversations. Young siblings who engage in frequent pretend play demonstrate a greater understanding of others' emotions and thinking, show evidence of creativity in their play themes and object use, and are more likely to construct shared meanings in play. Individual differences in pretend play and conflict management strategies predict children's social understanding over time, conflict resolution skills at age six, and adjustment to first grade.

One important area of research is related to sibling conflict and the best ways for parents to intervene when children disagree. Sibling conflicts are frequent, <sup>12,59</sup> poorly resolved, <sup>60,61</sup> and sometimes highly aggressive, <sup>25</sup> violent <sup>62</sup> or even abusive. <sup>63</sup> Sibling conflict in childhood is also associated with poorer adjustment both concurrently <sup>64</sup> and later in life. For instance, extreme levels of childhood sibling conflict are related to later violent tendencies as adults. <sup>65</sup> High levels of conflict may be particularly problematic when they are accompanied by an absence of sibling warmth. <sup>66</sup> Given these findings, it is not surprising that sibling conflict is a source of worry for parents <sup>67</sup> and that they are concerned about the best way to intervene. On the one hand, stepping in and resolving conflicts may deprive children of the opportunity to develop conflict resolution strategies of their own and may actually make conflicts worse. <sup>68-70</sup> On the other hand, intervention may sometimes help to make conflicts less intense and lead to more constructive resolutions. <sup>71,72</sup> Although most parents intervene by adjudicating, <sup>73</sup> some recent interventions have trained parents to mediate their children's sibling conflicts. <sup>74-77</sup> By structuring the negotiation process and yet leaving the final resolution in the hands of the children themselves, these interventions suggest a promising way to improve conflict outcomes while simultaneously helping children to understand one another and to develop more constructive resolution strategies.

When parents treat their children differently by directly varying amounts of positive affect, responsiveness, control, discipline and intrusiveness to the two children, sibling relations are likely to be more conflictual and less friendly, 1,34,35,42 but only if children view the differences as unfair. More broadly speaking, sibling jealousy in the preschool years is linked to lower quality sibling relationships later in childhood. 22

First-born siblings engage in leadership, teaching, caregiving, and helping roles, whereas second-born siblings are more likely to imitate, follow, be a learner, and elicit care and help. <sup>25,29,81-83</sup> Younger siblings often imitate the older child's language and actions during play, which is one way to establish shared meanings about the course of the play. <sup>25,84,85</sup> Siblings demonstrate the ability to teach one another during semi-structured tasks and also during ongoing interactions while playing together at home, <sup>31,32,83,86-91</sup> while taking into account the sibling's knowledge and understanding. During early childhood, siblings can act as sources of support during caretaking situations when the mother is absent for a short time <sup>8,92</sup> and in middle childhood siblings may provide support during stressful family experiences. <sup>49,93</sup> The natural power differences that result from the age difference between siblings mean that two children are likely to have different experiences in the family. For instance, second-born children have the benefit of learning from an older sibling, sometimes leading to precocious development for second-borns in some areas. <sup>94</sup>

Although older sisters are more likely to engage in caretaking and helping roles than older brothers, <sup>7,29</sup> there are few consistent gender or age gap differences in sibling relations in early childhood. As second-born siblings become more cognitively, linguistically and socially competent over the early years, they begin to take on more active roles in sibling interactions, for example by initiating more games. <sup>44</sup> As such, the early power imbalance that exists between siblings seems to become less relevant as siblings age, and interactions become more equitable. <sup>6,23,36</sup>

There is continuity in the quality of sibling relations during the early years and from early to middle childhood to early adolescence, particularly for older siblings' positive behaviour and feelings towards the younger. <sup>39,46,95,96</sup> However, large individual differences in the quality of sibling relations have been documented in many studies

cited here, which may also be influenced by other factors such as children's temperamental profiles. 1,4,9

# **Conclusions**

The sibling relationship is a natural laboratory for young children to learn about their world. It is a safe and secure place to learn how to interact with others who are interesting and engaging playmates, to learn how to manage disagreements, and to learn how to regulate both positive and negative emotions in socially acceptable ways. There are many opportunities for young children to develop an understanding of social relations with family members who may be close and loving at times and nasty and aggressive at other times. Further, there are many opportunities for siblings to use their cognitive skills to convince others of their point of view, teach or imitate the actions of their sibling. The positive benefits of establishing warm and positive sibling relationships may last a lifetime, whereas more difficult early relationships may be associated with poor developmental outcomes. The task for young siblings is to find the balance between the positive and negative aspects of their interactions as both children develop over time.

# Implications for Policy and Service Perspectives

Sensitive parenting requires that adults employ developmentally appropriate strategies with children of different ages. Parental strategies for managing sibling conflicts, particularly the promotion of constructive (e.g., negotiated and fair resolutions) versus destructive (e.g., use of power and aggression) strategies, is vitally important for learning how to get along with others. The service and policy implications indicate that some parents may need help with these issues and there is a need for the development of parent education and sibling intervention programs. Certainly we know from research that interventions to train parents to mediate sibling quarrels can be successful, <sup>74,75</sup> but reducing conflict has not generally been associated with an increase in prosocial sibling interactions. Most programs have been aimed at assisting parents to develop better guidance strategies, but have not directly targeted siblings themselves. However, one promising social skills intervention program aimed at increasing prosocial interactions between young children was successful in improving sibling relationship quality and emotion regulation skills. (Plearly, however, the development of intervention programs aimed at improving sibling relationships is an area for future work from both a services and policy perspective.

#### References

- 1. Brody GH. Sibling relationship quality: Its causes and consequences. Annual Review of Psychology 1998;49:1-24.
- 2. Howe N, Ross H, Recchia H. Sibling relations in early childhood. In Hart C, Smith PK, eds. *Wiley-Blackwell Handbook of Childhood Social Development*. New York, NY: Wiley; 2011:356-372.
- 3. Howe N, Recchia H. Introduction to special issue on the Sibling Relationship as a Context for Learning and Development. *Early Education and Development* 2014: 25:155-159.
- 4. Dunn J. Sibling relationships. In: Smith PK, Hart CH, eds. *Blackwell handbook of childhood social development*, Malden, Mass: Blackwell Publishing; 2002:223-237.
- 5. Dunn J. Young children's close relationships: Beyond attachment. Thousand Oaks, Calif: Sage Publications; 1993.
- 6. Volling BL. Sibling relationships. In: Bornstein MH, Davidson L, Keyes CLM, Moore KA, eds. Well-being: Positive development across the life course. Mahwah, NJ: Lawrence Erlbaum Associates; 2003:205-220.
- 7. Garner PW, Jones DC, Miner JL. Social competence among low-income preschoolers: Emotion socialization practices and social cognitive correlates. *Child Development* 1994;65(2):622-637.

- 8. Howe N, Rinaldi CM. 'You be the big sister': Maternal-preschooler internal state discourse, perspective-taking, and sibling caretaking. *Infant and Child Development* 2004;13(3):217-234.
- 9. Youngblade LM, Dunn J. Individual differences in young children's pretend play with mother and sibling: Links to relationships and understanding of other people's feelings and beliefs. *Child Development* 1995;66(5):1472-1492.
- 10. Howe N, Petrakos H, Rinaldi C, LeFebvre R. "This is a bad dog, you know...": Constructing shared meanings during sibling pretend play. *Child Development* 2005;76,783-794.
- 11. Howe N, Abuhatoum S, Chang-Kredl S. "Everything's upside down. We'll call it upside down valley!": Siblings' creative use of play themes, objects, and language during pretend play. *Early Education and Development* 2014;25:381-398.
- 12. Ross HS, Filyer RE, Lollis SP, Perlman M, Martin JL. Administering justice in the family. Journal of Family Psychology 1994;8(3):254-273.
- 13. Howe N, Rinaldi CM, Jennings M, Petrakos H. "No! The lambs can stay out because they got cozies!": Constructive and destructive sibling conflict, pretend play, and social understanding. *Child Development* 2002;73(5):1460-1473.
- 14. Recchia HE, Howe N. When do siblings compromise? Associations with children's descriptions of conflict issues, culpability, and emotions. Social Development 2010;19:838-857.
- 15. Carpendale JIM, Lewis C. Constructing an understanding of mind: The development of children's social understanding within social interaction. *Behavioral and Brain Sciences* 2004;27(1):79-96.
- 16. Brown JR, Dunn J. Talk with your mother or your sibling? Developmental changes in early family conversations about feelings. *Child Development* 1992;63(2):336-349.
- 17. Dunn J. The beginnings of social understanding. Cambridge, Mass: Harvard University Press; 1988.
- 18. Dunn J, Munn P. Becoming a family member: Family conflict and the development of social understanding in the second year. *Child Development* 1985;56(2):480-492.
- 19. Recchia HE, Howe, N. Family talk about internal states and children's relative appraisals of self and sibling. *Social Development* 2008;17:776–794.
- 20. Abuhatoum S, Howe N. Power in sibling conflict during early and middle childhood. Social Development 2013;22:738-754.
- Della Porta S, Howe N. Mothers' and children's use of power during hypothetical conflict situations. Merrill-Palmer Quarterly 2012;58:507-529.
- 22. Kolak AM, Volling BL. Sibling jealousy in early childhood: Longitudinal links to sibling relationship quality. *Infant and Child Development* 2011 20, 213–226.
- 23. Volling BL, Kennedy DE, Jackey LMH. The development of sibling jealousy. In Legerstee M, Hart S, eds. *Handbook of jealousy: Theory, research, and multidisciplinary approaches.* Malden, MA: Blackwell Publishers; 2010:387-417.
- 24. Miller AL, Volling BL, McElwain NL. Sibling jealousy in a triadic context with mothers and fathers. Social Development 2000;9:433-457.
- 25. Abramovitch R, Corter C, Pepler DJ, Stanhope L. Sibling and peer interaction: A final follow-up and a comparison. *Child Development* 1986;57(1):217-229.
- 26. Azmitia M, Hesser J. Why siblings are important agents of cognitive development: A comparison of siblings and peers. *Child Development* 1993;64(2):430-444.
- 27. Brody GH, Stoneman Z, MacKinnon CE, MacKinnon R. Role relationships and behavior between preschool-aged and school-aged sibling pairs. *Developmental Psychology* 1985;21(1):124-129.
- 28. Klein P, Feldman R, Zarur S. Mediation in a sibling context: The relations of older siblings' mediating behavior and younger siblings' task performance. *Infant and Child Development* 2002;11(4):321-333.
- 29. White N, Ensor R, Marks A, Jacobs L, Hughes C. "It's mine!" Does sharing with siblings at age 3 predict sharing with siblings, friends, and unfamiliar peers at age 6? *Early Education and Development* 2014;25:185-201.
- 30. Volling BL, Yu T, Gonzalez R, Kennedy DE, Rosenberg L, Oh W. Children's responses to mother—infant and father—infant interaction with a baby sibling: Jealousy or joy? *Journal Of Family Psychology* 2014;28(5):634-644.
- 31. Howe N, Recchia H. Individual differences in sibling teaching. Early Education and Development 2009;20:174-197.
- 32. Howe N, Recchia H, DellaPorta S, Funamoto A. "The driver doesn't sit, he stands up like the Flintstones!": Sibling teaching during teacher-directed and self-quided tasks. *Journal of Cognition and Development* 2012;13:208-231.
- Kramer L. Learning emotional understanding and emotion regulation through sibling interaction. Early Education and Development 2014;25:160-184.

- 34. Meunier JC, Roskam I, Stievenart M, Van DMG, Browne DT, Wade M. Parental differential treatment, child's externalizing behavior and sibling relationships: Bridging links with child's perception of favoritism and personality, and parents' self-efficacy. *Journal of Social and Personal Relationships* 2012;29:612-638.
- 35. Volling BL. The family correlates of maternal and paternal perceptions of differential treatment in early childhood. *Family Relations* 1997;46:227-236.
- 36. Harrist A, Achacoso JA, John A, Pettit GS, Bates JE, Dodge KA. Reciprocal and complementary sibling interactions: Relations with socialization outcomes in the kindergarten classroom. *Education and Development* 2014;25:202-222.
- 37. Maynard AE. Cultures of teaching in childhood: Formal schooling and Maya sibling teaching at home. *Cognitive Development* 2004:19:517–535.
- 38. Maynard AE. Cultural teaching: The development of teaching skills in Maya sibling interactions. Child Development 2002;73:969-982.
- 39. Gamble WC, Yu JJ. Young children's sibling relationship interactional types: Associations with family characteristics, parenting, and child characteristics. *Education and Development* 2014;25:223-239.
- 40. Pérez-Granados DR, Callanan MA. Parents and siblings as early resources for young children's learning in Mexican-descent families. Hispanic Journal of Behavioral Sciences 1997;19:3-33.
- 41. Modry-Mandell KL, Gamble WC, Taylor AR. Family emotional climate and sibling relationship quality: Influences on behavioral problems and adaptation in preschool-aged children. *Journal of Child and Family Studies*, 2007;16:61–73.
- 42. Volling BL, Belsky J. The contribution of mother-child and father-child relationships to the quality of sibling interaction: A longitudinal study. *Child Development* 1992;63(5):1209-1222.
- 43. Corter C, Abramovitch R, Pepler DJ. The role of the mother in sibling interaction. Child Development 1983;54(6):1599-1605.
- 44. Dunn J, Creps C. Children's family relationships between two and five: Developmental changes and individual differences. Social Development 1996;5(3):230-250.
- 45. Dunn J, Kendrick C. The speech of two-year-olds and three-year-olds to infant siblings: "Baby talk" and the context of communication. *Journal of Child Language* 1982;9(3):579-595.
- 46. Howe N, Fiorentino LM, Gariepy N. Sibling conflict in middle childhood: Influence of maternal context and mother-sibling interaction over four years. *Merrill Palmer Quarterly* 2003;49(2):183-208.
- 47. Stewart RB, Mobley LA, Van-Tuyl SS, Salvador MA. The firstborn's adjustment to the birth of a sibling: A longitudinal assessment. *Child Development* 1987;58(2):341-355.
- 48. Richmond MK, Stocker CM, Rienks SL. Longitudinal associations between sibling relationship quality, parental differential treatment, and children's adjustment. *Journal of Family Psychology* 2005;19:550-559.
- 49. Gass K, Jenkins J, Dunn J. Are sibling relationships protective? A longitudinal study. *Journal of Child Psychology and Psychiatry* 2007;48:167-175.
- 50. Brody GH, Stoneman Z, McCoy JK. Associations of maternal and paternal direct and differential behavior with sibling relationships: Contemporaneous and longitudinal analyses. *Child Development* 1992;63(1):82-92.
- 51. Hughes C, Fujisawa KK, Ensor R, Lecce S, Marfleet R. Cooperation and conversations about the mind: A study of individual differences in 2-year-olds and their siblings. *British Journal of Developmental Psychology* 2006;24:53–72.
- 52. Howe N, Petrakos H, Rinaldi CM. "All the sheeps are dead. He murdered them": Sibling pretense, negotiation, internal state language, and relationship quality. *Child Development* 1998;69(1):182-191.
- 53. Leach J, Howe N, DeHart G. "An earthquake shocked up the land!": Play with siblings and friends. Social Development. In press.
- 54. Howe N, Bruno A. Sibling pretend play in middle childhood: The role of creativity and maternal context. *Early Education and Development* 2010;21:1-23.
- 55. Cutting AL, Dunn J. Conversations with siblings and with friends: Links between relationship quality and social understanding. *British Journal of Developmental Psychology* 2006;24:73-87.
- 56. Youngblade LM, Dunn J. Social pretend with mother and sibling: Individual differences and social understanding. In: Pellegrini AD, ed. The future of play theory: A multidisciplinary inquiry into the contributions of Brian Sutton-Smith. Albany, NY: State University of New York Press; 1995:221-239.
- 57. Herrera C, Dunn J. Early experiences with family conflict: Implications for arguments with a close friend. *Developmental Psychology* 1997;33(5):869-881.
- 58. Donelan-McCall N, Dunn J. School work, teachers, and peers: The world of first grade. International *Journal of Behavioral Development* 1997;21(1):155-178.

- 59. Dunn J, Munn P. Sibling quarrels and maternal intervention: Individual differences in understanding and aggression. *Journal of Child Psychology and Psychiatry and Allied Disciplines* 1986;27(5):583-595.
- 60. Siddiqui AA, Ross HS. How do sibling conflicts end? Early Education and Development 1999;10(3):315-332.
- 61. Vuchinich S. Starting and stopping spontaneous family conflicts. Journal of Marriage and the Family 1987;49(3):591-601.
- 62. Steinmetz SK. Family violence: Past, present, and future. In: Sussman MB, Steinmetz SK, eds. *Handbook of marriage and the family*. New York, NY: Plenum Press; 1987:725-765.
- 63. Wiehe VR. Sibling abuse: Hidden physical, emotional, and sexual trauma. 2<sup>nd</sup> ed. Thousand Oaks, Calif: Sage Publications; 1997.
- 64. Buist KL, Dekovic M, Prinzie P. Sibling relationship quality and psychopathology of children and adolescents: a meta-analysis. *Clinical Psychology Review* 2013;33(1):97-106.
- 65. Gully KJ, Dengerink HA, Pepping M, Bergstrom DA. Research note: Sibling contribution to violent behavior. *Journal of Marriage and the Family* 1981;43(2):333-337.
- 66. McGuire S, McHale SM, Updegraff K. Children's perceptions of the sibling relationship in middle childhood: Connections within and between family relationships. *Personal Relationships* 1996;3:229–239.
- 67. Kramer L, Baron LA. Parental perceptions of children's sibling relationships. *Family Relations: Journal of Applied Family and Child Studies* 1995;44(1):95-103.
- 68. Brody GH, Stoneman Z. Sibling conflict: Contributions of the siblings themselves, the parent-sibling relationship, and the broader family system. *Journal of Children in Contemporary Society* 1987;19(3-4):39-53.
- 69. Dreikurs R, Gould S, Corsini RJ. Family council: The Dreikurs Technique for putting an end to war between parents and children (and between children and children). Oxford, England: Henry Regnery; 1974.
- 70. Felson RB. Aggression and violence between siblings. Social Psychology Quarterly 1983;46(4):271-285.
- Perlman M, Ross HS. The benefits of parent intervention in children's disputes: An examination of concurrent changes in children's fighting styles. Child Development 1997:68(4):690-700.
- 72. Recchia HE, Howe N. Sibling relationship quality moderates the associations between parental interventions and siblings' independent conflict strategies and outcomes. *Journal of Family Psychology* 2009;23:551-561.
- 73. Ross H, Martin J, Perlman M, Smith M, Blackmore E, Hunter J. Autonomy and authority in the resolution of sibling disputes. In: Killen M, ed. *Children's autonomy, social competence, and interactions with adults and other children: Exploring connections and consequences* San Francisco, Calif: Jossey-Bass; 1996:71-90.
- 74. Siddiqui A, Ross H. Mediation as a method of parent intervention in children's disputes. Journal of Family Psychology 2004;18(1):147-159.
- Smith J. Effects of parent mediation on children's socio-cognitive skills and sibling conflict interactions [thesis or dissertation] Waterloo,
  Ontario: Department of Psychology, University of Waterloo; 2004.
- 76. Ross HS, Lazinski MJ. Parent mediation empowers sibling conflict resolution. Education and Development 2014;25:259-275.
- 77. Ross HS. Parent mediation of sibling conflict: Addressing issues of fairness and morality. In Wainryb C, Recchia H, eds. *Talking about right and wrong: Parent-child conversations as contexts for moral development* Cambridge, UK: Cambridge University Press; 2014:143-167.
- 78. Kowal A, Kramer L. Children's understanding of parental differential treatment. Child Development 1997;68(1):113-126.
- 79. Kowal AK, Krull JL, Kramer L. How the differential treatment of siblings is linked with parent-child relationship quality. *Journal of Family Psychology* 2004;18:658-665.
- 80. Kowal A, Kramer L, Krull JL, Crick NR. Children's perceptions of the fairness of parental preferential treatment and their socioemotional well-being. *Journal of Family Psychology* 2002;16:297-306.
- 81. Azmitia M, Hesser J. Why siblings are important agents of cognitive development: A comparison of siblings and peers. *Child Development* 1993;64(2):430-444.
- 82. Brody GH, Stoneman Z, MacKinnon CE, MacKinnon R. Role relationships and behavior between preschool-aged and school-aged sibling pairs. *Developmental Psychology* 1985;21(1):124-129.
- 83. Klein P, Feldman R, Zarur S. Mediation in a sibling context: The relations of older siblings' mediating behavior and younger siblings' task performance. *Infant and Child Development* 2002;11(4):321-333.
- 84. Barr R, Hayne H. It's not what you know, it's who you know: Older siblings facilitate imitation during infancy. *International Journal of Early Years Education* 2003:11:7-21.
- 85. Dunn J. Kendrick C. Siblings: Love, envy, and understanding. Cambridge, MA: Harvard University Press; 1982.
- 86. Howe N, Della Porta S, Recchia H, Funamoto A, Ross H. "This bird can't do it 'cause this bird doesn't swim in water": Sibling teaching during naturalistic home observations in early childhood. *Journal of Cognition and Development*. Online 18 Oct 2013.

## DOI:10.1080/15248372.2013.848869

- 87. Howe N, Brody M, Recchia H. Effects of task difficulty on sibling teaching in middle childhood. *Infant and Child Development* 2006;15:455-470.
- 88. Recchia HE, Howe N, Alexander S. "You didn't teach me, you showed me": Variations in children's approaches to sibling teaching. *Merrill-Palmer Quarterly* 2009:55:55-78.
- 89. Howe N, Recchia H. Teachers and playmates: Reciprocal and complementary interactions between siblings. *Journal of Family Psychology* 2005;19, 497-502.
- 90. Pérez-Granados DR, Callanan MA. Parents and siblings as early resources for young children's learning in Mexican-descent families. Hispanic Journal of Behavioral Sciences 1997;19:3-33.
- 91. Prime H, Perlman M, Tackett JL, Jenkins JM. Cognitive sensitivity in sibling interactions: Development of the construct and comparison of two coding methodologies. *Education and Development* 2014;25:240-258.
- 92. Stewart RB, Marvin RS. Sibling relations: The role of conceptual perspective-taking in the ontogeny of sibling caregiving. *Child Development* 1984;55(4):1322-1332.
- 93. Jenkins J. Sibling relationships in disharmonious homes: Potential difficulties and protective effects. In: Boer F, Dunn J, eds. *Children's sibling relationships: Developmental and clinical issues*. Hillsdale, NJ: Lawrence Erlbaum Associates; 1992:125-138.
- 94. Perner J, Ruffman T, Leekam SR. Theory of mind is contagious: You catch it from your sibs. Child Development 1994;65(4):1228-1238.
- 95. Dunn J, Slomkowski C, Beardsall L. Sibling relationships from the preschool period through middle childhood and early adolescence. Developmental Psychology 1994;30(3):315-324.
- 96. Stillwell R, Dunn J. Continuities in sibling relationships: Patterns of aggression and friendliness. *Journal of Child Psychology and Psychiatry and Allied Disciplines* 1985;26(4):627-637.
- 97. Kramer L. Experimental interventions in sibling relations. In: Conger RD, Lorenz FO, Wickrama KAS, eds. *Continuity and change in family relations: Theory, methods, and empirical findings*. Mahwah, NJ: Erlbaum; 2004:345-380.
- 98. Kramer L, Radey C. Improving sibling relationships among young children: A social skills training model. *Family Relations* 1997;46(3):237-246.
- 99. Kramer L. The essential ingredients of successful sibling relationships: An emerging framework for advancing theory and practice. Child Development Perspectives 2010;4:80-86.