Infants and Toddlers: What Have We Learned from Research on Social-emotional Development?

by Alice Sterling Honig and Donna S. Wittmer

The past decades have seen the emergence of surprising and interesting new knowledge about the social-emotional development of infants and toddlers. Below, we summarize findings that help us gain new respect for, and new determination to support, the growth and development of very young children.

Emotions

Infants and toddlers express a range of emotions. By six weeks, infants give dazzling social smiles to familiar, loving caregivers who feel deeply the joy of those smiles. Babies by three to four months also give facial/emotional signals and cries of distress, disgust, fear, joy, sadness, pain, and anger (Chóliz, Fernández-Abasca, & Martínez-Sánchez, 2012; Malatesta & Haviland, 1982).

Young children can also feel jealous. Jealously is defined as the threat of losing to a rival, or losing former exclusivity in a valued relationship (White & Mullin, 1989). When mom talked with another adult, 10% of five-month-olds cried; but 50% cried when mom cuddled another baby (Draghi-Lorenz et al., 2001). When mom cuddled a baby doll, 13-month-olds showed anger and sadness as mom gave gentle cooing attention to a 'stranger' baby. They often ceased playing, acted resistant to mom's suggestions, and struggled to re-secure mom's exclusive attention by clinging, whining, and pestering her for attention (Hart, 2015). Toddler jealousy at the birth of a newborn sibling may cause decreased joy, increased tantrums, crying, deliberate naughtiness, bodily complaints, sleep problems, and regression: "I want a bottle, too!" complains a toddler, completely weaned months ago.

Separation anxiety starts anywhere between eight to ten months and often peaks between 15 and 18 months. If mothers told their toddlers when they would be back after leaving them in care, then less separation protest occurred than when mom left them without any explanation (Weinraub & Lewis, 1977).

What Teachers Can Do:

- Caregivers are on the front line to model gentleness, cherishing, and soothing so infants and toddlers learn that their feelings — even angry feelings — are truly understood.
- Offer to hold both babies if one baby acts jealous of your holding another.
- When infants and toddlers are upset, provide a calm environment and loving, comforting hugs.
- Give words for feelings. Use and encourage emotion talk: 'mad' and 'sad' are easy toddler words!
- Cheerfully accept a bit of regression: toddlers can have a small bottle with water when feeling jealous at birth of a new baby.

Attachment

Attachment, according to British psychiatrist Dr. John Bowlby, is a bond formed with another specific person that binds them together in space and endures over time. During the first year, infants learn to trust or not trust their primary

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caregivers. Mutually enjoyable verbal and physical loving exchanges between a caregiver and baby create emotional connections that meet the basic needs of the infant. Each attachment of baby is to a few special persons — caregivers who are attuned to baby's signals of distress, sensitive to baby tempos, and promptly and effectively meet a baby's needs — for nursing, attentiveness, diapering, cuddling, or soothing. By one year, an infant stays near his attachment person and also ventures out to explore the world. When scared or hurt, baby may gallop back and throw himself onto his special attachment person.

Children Who Feel Secure

Babies at about a year are assessed by the 20-minute Ainsworth Strange Situation Procedure (SSP), during which reunion responses after brief separation from mom are recorded and identified. Securely attached ('B' babies) greet mom with smiles and accept loving hugs upon reunion. They feel loved and act more socially competent with peers (Gauthier, 2003). Secure babies are better able to regulate emotions; show more positive and fewer negative emotions; cope through problem-solving (Abraham & Kerns, 2013), and experience higher levels of self-worth (Booth-Laforce et al., 2006).

Children with Insecure Patterns

During the SSP, some insecure infants show hesitant/ambivalent responses ('C' babies). They may run for a hug and then push mom away and struggle to get down. They have experienced discordant maternal responses — sometimes attentive and sometimes negligent or insensitive. Insecure attachments were predicted at 12 months, when babies had been observed in interactions with mother at four months: their mothers had not used affectionate looks, touches, and vocalizations (Beebe et al., 2010; 2012).

Babies who are identified as avoidantly attached ('A' babies) act indifferent to mom and do not seek contact at reunions during the SSP. Although often demanding at home, they may not protest at separation even during the first day left in group care. Their moms, observed as often cold and intrusive into baby's play, do not seem to enjoy snuggling or close physical contact. Although these children come across as 'cool,' their heart rate, stress hormone levels, and attentional capacity suggest they are *definitely distressed by the separation* (Fraley, 2013).

Babies identified as disoriented/disorganized ('D' babies) during SSP reunions may run toward mom but then stop, as if bewildered and sometimes show mixtures of 'A' and 'C' behaviors.

Insecurity with both parents has a robust effect: 'Double-insecure' children reported more overall problems, and were rated by teachers as having more externalizing problems than those secure with at least one parent (Kochanska, & Kim, 2013).

Long-term Predictors of Early Attachment

Infants and toddlers who are **securely** attached show:

- greater involvement and success in peer interactions (Hedenbro & Rydelius, 2014; Kerns & Brumariu, 2014).
- less peer conflict in first grade (Raikes, Virmani, Thompson, & Hatton, 2013).
- four times as much compliance with mom's requests compared with insecure toddlers (Kok, van IJzendoorn, Linting, Bakermans-Kranenburg, Tharner, Luijk, & Tiemeier, 2013).
- fewer anxious, internalizing and externalizing behaviors (Groh, Roisman, van IJzendoorn, Bakermans-Kranenburg, & Fearon, 2012).
- lower levels of anxiety when they are teenagers (Brumariu, & Kerns, 2013).

Infants and toddlers who are **insecurely** attached:

- expect more hostile responses from peers than do children who are securely attached (Mcquaid et al., 2009).
- when in preschool, former 'A 'babies behaved as bullies while playing with former 'C' babies (Sroufe & Fleeson, 1986).
- disorganized insecure toddlers observed at 36 months were most likely to show significant unresolved attachent with respect to loss and trauma years later (Groh et al., 2014).

Infants and Toddlers Need Secure Relationships with Teachers

Infants and toddlers can be securely attached to more than one person. Secure attachments to both family members AND teachers provide children with emotional support, build children's sense of self-worth, and help them value relationships (Honig, 2002). Infants and toddlers develop secure attachments with family members and teachers

over time when they experience responsive, affectionate, emotionally available interactions (Wittmer & Petersen, 2013). When infants and toddlers feel secure with their teachers in a program, they are more socially competent (Howes, Phillips, & Whitebook, 1992); have better language development; can regulate their emotions; and participate more in problem-solving activities (Howes & Smith, 1995).

What Teachers Can Do:

- Warmly greet each child personally every day.
- Demonstrate affection and positive regard for each child.
- Watch carefully for babies who never fuss at all on entering child care. They may need extra reassurance — with warm voice tones and loving cuddles.
- Respond contingently with appropriate soothing to distressed children's needs.
- Provide primary care for a small group of infants whose feeding, toileting, and sleep patterns you know intimately.
- When possible, implement care continuity, where a teacher stays with the group during the first three years.
- Support children in safe explorations and in difficult tasks (Bernier et al., 2014).
- Be available for 'emotional refueling' (Kaplan, 1998) (for example, after a boisterous peer knocks down a toddler's newly built tower).
- Home visitors support parents' needs for nurturing. They also note when residues of past parental traumas may require professional mental health specialists.

Temperament

Does temperament style affect infant development? Temperament traits cluster into three major patterns: easy going/flexible; fearful/shy/withdrawn; triggery, impulsive/intense/feisty. Temperament is partly genetic. Babies who were most active at four days of age were also more active eight years later (Korner et al., 1985). That said, adults still can positively affect children's temperament with their supportive interactions.

However, differential *susceptibility* has been the focus of recent studies. That is, infants with a difficult temperament have been noted as *more sensitive to the quality of caregiving*. A longitudinal study of over 6,000 children for 18 years revealed that those with a more difficult infant temperament (compared with easy infants) were more vulnerable to negative parenting. But, they also thrived more with positive parenting (Slagt et al., 2016).

Stress is *more* distressing for highly sensitive infants, especially in non-high-quality child care. Cortisol levels (stress measures) increased from morning to afternoon in infants and toddlers in child care (but not home care,) particularly for those timorous toddlers not as involved in successful peer play (Watamura, Donzella, Alwin, & Gunnar, 2003). Intrusive, over-controlling care was associated with cortisol rise: girls were more anxious and vigilant; boys showed increased angry, aggressive behaviors.

Infants with difficult, irritable temperaments often challenge caregivers. Responsive caregivers make a strong difference. When parents were sensitive to infant distress cues in caring ways, and supportive of enjoyable interaction (observed at 15 months), then highly negative, angry seven-month-olds were noted as more self-regulated at 25 months compared with irritable babies of less responsive parents (Kim & Kochanska, 2012). Infants with irritable temperaments were less anxious or depressed at ages two and three and exhibited fewer behavior problems when mothers were sensitive (Warren & Simmens, 2005), showed positive effect and were less intrusive (NICHD Early Child Care Research Network, 2004).

In Holland, home visitors taught half of a group of 100 mothers of low-income of highly irritable infants how to watch for and respond effectively and appropriately to infant distress cues and how to soothe babies by swaddling, using low soothing tones, and other helpful techniques. At one year, two-thirds of these infants were securely attached compared with less than one-third of the irritable babies whose moms were not given extra help (Van den Boom, 1994). Temperament is not destiny!

What Teachers Can Do:

- Become a good detective. Tune in to temperament styles and how you can best help each infant feel comfortable and get calm if upset.
- Enlist home visitors to support moms with highly irritable infants. Goodness of fit between baby and caregiver can best assist in times of temperament troubles.

Social Interactions

Social Referencing

Babies use caregivers for social referencing quite early. By three months of age, infants respond to an adult's expression

of fear (Hoehl & Striano, 2010). Baby references a trusted caregiver's face before venturing toward an unknown object. By social referencing, baby learns to interpret a feeling as mildly upset to be managed *or* baby learns (if adults respond with exaggerated negatives) to feel scared even if the upset was just a brief and mild tumble (Hennighausen & Lyons-Ruth, 2005).

Babies are alert to others' focus of attention. From 12 to 14 months of age if an adult looks at a location behind the infant's body, babies show that they realize that the adult is seeing something that the baby is not seeing (Moll & Tomasello, 2004). Some 12- and 18-month-old infants saw an experimenter handling two novel toys in turn, and then leave the room. Another person then played with a third toy. When the first person returned and exclaimed, "Look at that one! Can you give it to me?", then babies *knew* to give the third toy to the adult! They realized she must be referring to the new toy she had not seen before she left the room (Tomasello & Haberi, 2003).

Aggression

Aggression differs markedly, so infants are more likely to tug on a peer's toy than to strike a peer. Parents of one-year-olds rated their babies' aggressiveness. Next, families and toddlers gathered for a pretend birthday party with age-appropriate toys. Risk factors linked to both male and female toddler aggressive actions were: spousal and family violence, maternal smoking, stress, anxiety or depression during pregnancy, and maternal history of conduct problems (Hay et al., 2011).

Critical parenting affects child aggression. If moms had been highly critical with them, then insecurely attached infants showed higher aggression in first grade, compared with children who had had secure attachments in infancy (Cyr, Pasalich, McMahon, & Spieker, 2014). The NICHD Study of more than 1,000 dyads also found that secure attachment for 15-month-old infants protected them so they did not show more aggression in grade 1; but insecurely attached babies in first grade had greater behavior problems. Secure attachment *buffers* children as they grow, and moderates the link between early parenting and later child aggression.

What Teachers Can Do:

- Be aware of stresses that cause child outbursts — such as violent fights in the home, divorce, custody battles, or frequent transfers of tots bounced from one household to another. Your insights and compassion are urgently required.
- Aggressive toddlers may be imitating adults who model angry outbursts. Your calm support helps children regulate negative emotions.

Prosocial Development

Infants have a built-in ability for empathy for sadness (Wittmer, 2009). When 15- and 18-month-old babies (n=92) saw an experimenter wince with pain, pretending to have hurt her finger, they looked sad (Chiarella et al., 2013). Older infants only showed empathy when the adult's facial emotion matched the event.

Experimenters presented six- and ten-month-old infants with toy wood climbers who made repeated attempts to climb a hill. On the third attempt, one of two new characters either hindered or gave help by pushing the climber up from behind. Encouraged to choose between the two new characters by reaching for one of them, babies significantly more often chose the helping character (Hamlin, Wynn, & Bloom, 2007)!

What Teachers Can Do:

- Notice and specifically admire peer prosocial actions.
- Read picture books emphasizing empathy, kindness, cooperation, and helping.
- Realize that infants and toddlers are sensitive to whether you and others are helpful and kind.

Caregiver Relationships with Parents

How caregivers and parents get along impacts babies' emotional well-being. Babies have better social-emotional interactions with caregivers and peers when there are cordial, easy, and positive relations between staff and parents (Elicker, Fortner-Wood, & Noppe, 1999). Open communication, mutual respect, support and trust create an interpersonal context for optimal child care. The Care Quality Checklist (Honig, 2014) can help parents, directors, and teachers recognize the most important aspects of these relationships that help a young child thrive.

Some babies are like dandelions: they will sturdily survive even somewhat stressful/difficult family situations. Others are more like orchids; they wilt when caregiving is severe/cold or ignores distress cues. Caregivers who provide sufficient patient attentive attunement, genuine pleasure and love, help stressed babies flower and flourish. You are at the forefront of providing harmonious care to enhance

infant/toddler development. May you flourish long in your precious work.

References

Abraham, M. M., & Kerns, K. A. (2013). Positive and negative emotions and coping as mediators of mother-child attachment and peer relationships. *Merrill-Palmer Quarterly, 59*(4), 399–425.

Beebe, B., Jaffe, J., Markese, S., Buck, K., Chen, H., Cohen, P., & Feldstein, S. (2010). The origins of 12-month attachment: A microanalysis of 4-month mother–infant interaction. *Attachment & Human Development, 12*(1), 3–141.

Beebe, B., Lachmann, F. M., Markese, S., Buck, K. A., Bahrick, L. E., Chen, H. & Jaffe, J. (2012). On the origins of disorganized attachment and internal working models: Paper II. An empirical microanalysis of 4-month mother–infant interaction. *Psychoanalytic Dialogues, 22*(3), 352–374.

Booth-Laforce, C., Oh, W., Kim, A. H., Rubin, K. H., Rose-Krasnor, L., & Burgess, K. (2006). Attachment, self-worth, and peer-group functioning in middle childhood. *Attachment & Human Development, 8*(4), 309–325.

Brumariu, L. E., & Kerns, K. A. (2013). Pathways to anxiety: Contributions of attachment history, temperament, peer competence, and ability to manage intense emotions. *Child Psychiatry and Human Development, 44,* 504–515.

Chiarella, S. S., & Poulin-Dubois, D. (2013). Crybabies and pollyannas: Infants can detect unjustified emotional reactions. *Infancy, 18,* E81–E96.

Chóliz, M., Fernández-Abascal, E. G., & Martínez-Sánchez, F. (2012). Infant crying: Pattern of weeping, recognition of emotion and affective reactions in observers. *The Spanish Journal of Psychology, 15*(3), 978–988.

Cyr, M., Pasalich, D. S., McMahon, R. J., & Spieker, S. J. (2014). The longitudinal link between parenting and child aggression: The moderating effect of attachment security. *Child Psychiatry Human Development, 45*(5), 555–564.

Draghi-Lorenz, R., Reddy, V., & Costall, A. (2001). Rethinking the development of "non-basic" emotions: a critical review of existing theories. Development. *Review, 21,* 263–304.

Elicker, J., Fortner-Wood, C., & Noppe, I. C. (1999). The context of infant attachment in family child care. *Journal of Applied Developmental Psychology, 20*(2), 319–336.

Fraley, R. C. (2013) A brief overview of adult attachment theory and research. Retrieved: https://internal.psychology.illinois.edu/~rcfraley/attachment.htm

Gauthier, Y. (2003). Infant mental health as we enter the third millennium: Can we prevent aggression? *Infant Mental Health Journal, 24*(3), 296–309.

Groh, A. M., Roisman, G. I., van IJzendoorn, M. H., Bakermans-Kranenburg, M., & Fearon, R. P. (2012). The significance of insecure and disorganized attachment for children's internalizing symptoms: A meta-analytic study. *Child Development, 83*(2), 591–610.

Hamlin, J. K., Wynn, K., & Bloom, P. (2007). Social evaluation by preverbal infants. *Nature, 450*(7169), 557–559.

Hamlin, J. K., Wynn, K., Bloom, P., & Mahajan, N. (2011). How infants and toddlers react to antisocial others. *Proceedings of the National Academy of Sciences of the United States of America, 108*(50), 19931–19936.

Hart, S. L. (2015). *Infant jealousy: Responses to differential treatment.* New York: Springer.

Hay, D., Mundy, L., Roberts, S., Carta, R., Waters, C. S, Perra, O., Jones, I., & van Goozen, S. (2011). Known risk factors for violence predict 12-month-old infants' aggressiveness with peers. *Psychology Science, 22*(9), 1205–1211.

Hedenbro, M., & Rydelius, P. (2014). Early interaction between infants and their parents predicts social competence at the age of four. *Acta Paediatrica, 103*(3), 268–274.

Hennighausen, K. H., & Lyons-Ruth, K. (2005). Disorganization of behavioral and attentional strategies toward primary attachment figures: From biologic to dialogic processes. In C. S, Carter, et al. (Eds.): *The 92nd Dahlem Workshop Report: Attachment and Bonding: A New Synthesis* (pp. 269–299). Cambridge, MA: MIT Press.

Hoehl, S., & Striano, T. (2010). Discrete emotions in infancy: Perception without production? *Emotion Review 2*(2), 132–133.

Honig, A. S. (2002). *Secure relationships: nurturing infant/toddler attachment in early care settings.* Washington, DC: National Association for the Education of Young Children.

Honig, A. S. (2014). *The best for babies: Expert advice for assessing infant-toddler programs.* Lewisville, NC: Gryphon House.

Howes, C., Phillips, D., & Whitebook, M. (1992). Thresholds of quality: Implications for the social development of children in center-based child care. *Child Development, 63,* 449–460.

Howes, C., & Smith, E. (1995). Relations among child care quality, teacher behavior, children's play activities, emotional security, and cognitive activity in child care. *Early Childhood Research Quarterly, 10,* 381–404.

Kaplan, L. (1998, Reprint edition). *From infant to individual.* New York: Simon & Schuster.

Kerns, K. A., & Brumariu, L. E. (2014). Is insecure parent-child attachment a risk factor for the development of anxiety in childhood or adolescence? *Child Development Perspectives, 8*(1), 12–17.

Kim, S., & Kochanska, G. (2012). Child temperament moderates effects of parent-child mutuality on self-regulation: A relationship-based path for emotionally negative infants. *Child Development, 83*(4), 1275–1289.

Kochanska, G., & Kim, S. (2013). Early attachment organization with both parents and future behavior problems: From infancy to middle childhood. *Child Development, 84*(1), 283–296.

Kok, R., van IJzendoorn, M. H., Linting, M., Bakermans-Kranenburg, M., Tharner, A., Luijk, M., & Tiemeier, H. (2013). Attachment insecurity predicts child active resistance to parental requests in a compliance task. *Child: Care, Health & Development, 39*(2), 277–287.

Korner, A. F., Zeanah, C. H., Linden, J., Kraemer, H. C., Berkowitz, R. I., & Agras, W. S. (1985). Relation between neonatal and later activity and temperament. *Child Development, 56,* 38–42.

Malatesta, C. Z., & Haviland, J. M. (1982). Learning display rules: The socialization of emotion expression in infancy. *Child Development, 53*(4), 991–1003.

Mcquaid, N. E., Bibok, M. B., & Carpendale, J. I. M. (2009). Relation between maternal contingent responsiveness and infant social expectations. *Infancy, 14*(3), 390–401.

Moll, H., & Tomasello, M. (2004). Twelve and 18-month-old infants follow gaze to spaces behind barriers. *Developmental Science, 7*(1), F1–F9.

NICHD Early Child Care Research Network. (2004). Father's and mother's parenting behavior and beliefs as predictors of child social adjustment in the transition to school. *Journal of Family Psychology, 18*(4), 628–638.

Raikes, H. A., Virmani, E. A., Thompson, R. A., & Hatton, H. (2013). Declines in peer conflict from preschool through first grade: Influences from early attachment and social information processing. *Attachment & Human Development, 15*(1), 65–82.

Slagt, M., Duba, J. S., Dekovic, M., & van Aken, M. A. G. (2016). Differences in sensitivity to parenting depending on child temperament: A meta-analysis. *Psychological Bulletin (10*), 1068–1110.

Sroufe, L. A., & Fleeson, J. (1986). Attachment and the construction of relationships. In W. W. Hartup & Z. Rubin (Eds.) *Relationships and development* (pp. 51–71). Hillsdale, NJ: Lawrence Erlbaum Associates.

Tomasello, M., & Haberi, K. (2003). Understanding attention: 12- and 18-month-olds know what is new for other persons. *Developmental Psychology, 39*(5), 906–912.

Van den Boom, D. (1994). The influence of temperament and mothering on attachment and exploration: An experimental manipulation of sensitive responsiveness among lower-class mothers with irritable infants. *Child Development, 65*(5), 1457–1477.

Warren, S. L., & Simmens, S. J. (2005). Predicting toddler anxiety/depressive symptoms: Effects of caregiver sensitivity on temperamentally vulnerable children. *Infant Mental Health Journal, 26*(1), 40–55.

Watamura, S., Donzella, B., Alwin, J., & Gunnar, M. (2003). Morning-to-afternoon increases in cortisol concentrations for infants and toddlers at child care: Age differences and behavioral correlates. *Child Development, 74*(4), 1006–1021.

Weinraub, M., & Lewis, M. (1977). The determinates of children's responses to separation. *Monographs of the Society for Research in Child Development,* 42(4, Serial No. 172).

White, G. L., & Mullen, P. E. (1989). *Jealousy: Theory, research, and clinical strategies*. New York: Guilford Press.

Wittmer, D. S. (2008). *Focusing on peers. The importance of relationships in the early years*. Washington, DC: Zero to Three.

Wittmer, D. S., & Petersen, S. H. (2013). *Infant and toddler development and responsive program planning. A relationship-based approach*. Upper Saddle River, NJ: Pearson.