



Universiteit  
Leiden  
The Netherlands

## **Physiological reactivity to fear in children: effects of temperament, attachment & the serotonin transporter gene**

Gilissen, R.

### **Citation**

Gilissen, R. (2008, April 16). *Physiological reactivity to fear in children: effects of temperament, attachment & the serotonin transporter gene*. Retrieved from <https://hdl.handle.net/1887/12701>

Version: Not Applicable (or Unknown)

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/12701>

**Note:** To cite this publication please use the final published version (if applicable).

# References

- Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Ainsworth, M.D.S., Blehar, M.C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.
- Aviezer, O., Sagi, A., Joels, T., & Ziv, Y. (1999). Emotional availability and attachment representations in Kibbutz infants and their mothers. *Developmental Psychology*, 35, 811- 821.
- Bakermans-Kranenburg, M. J., & Van IJzendoorn, M. H. (2006). Gene-environment interaction of the dopamine D4 receptor (DRD4) and observed maternal insensitivity predicting externalizing behavior in preschoolers. *Developmental Psychobiology*, 48, 406-409.
- Bakermans-Kranenburg, M. J., & Van IJzendoorn, M. H. (2007). Genetic vulnerability or differential susceptibility in child development: The case of attachment. *Journal of Child Psychology and Psychiatry*, 48, 1160-1173.
- Bar-Haim, Y., Lamy, D., Pergamin, L., Bakermans-Kranenburg, M.J., & Van IJzendoorn, M.H. (2007). Threat-related attentional bias in anxious and nonanxious individuals: A meta-analytic study. *Psychological Bulletin*, 133, 1-24.
- Barr, C. S., Newman, T. K., Becker, M. L., Parker, C. C., Champoux, M., Lesch, K. P., et al. (2003). The utility of the non-human primate model for studying gene by environment interactions in behavioral research. *Genes, Brain and Behavior*, 2, 336-340.

- Bearden, C.E., & Freimer, N.B. (2006). Endophenotypes for psychiatric disorders: ready for primetime? *Trends in Genetics*, *22*, 306-313.
- Bechara, A., Tranel, D., Damasio, H., Adolphs, R., Rockland, C., & Damasio, A.R. (1995). Double dissociation of conditioning and declarative knowledge relative to the amygdala and hippocampus in humans. *Science*, *269*, 1115-1118.
- Belsky, J., Fish, M., Isabella, R. (1991). Continuity and discontinuity in infant negative and positive emotionality – family antecedents and attachment consequences. *Developmental Psychology*, *27*, 421-431.
- Belsky, J. (1997). Theory testing, effect-size evaluation, and differential susceptibility to rearing influence: the case of mothering and attachment. *Child Development*, *68*, 598-600.
- Belsky, J. (2005). Differential susceptibility to rearing influence: An evolutionary hypothesis and some evidence. In B. Ellis, & D. Bjorklund (Eds.), *Origins of the social mind: Evolutionary psychology and child development* (pp. 139-163). New York: Guilford.
- Berntson, G.G., Bigger, J.T., Eckberg, D.L., Grossman, P., Kaufman, P.G., Malik, M., et al. (1997). Heart rate variability: Origins, methods, and interpretive caveats. *Psychophysiology*, *34*, 623-648.
- Berntson, G.G., Cacioppo, J.T., & Quigley, K.S. (1991). Autonomic determinism: The modes of autonomic control, the doctrine of autonomic space, and the laws of autonomic constraint. *Psychological Review*, *98*, 459-487.
- Berntson, G.G., Lozano, D.L., & Chen, Y (2005). Filter properties of root mean square successive difference (RMSSD) for heart rate. *Psychophysiology*, *42*, 246-252.
- Biringen, Z., Robinson, J.L., & Emde, R.N. (1998). Appendix B: The Emotional Availability Scales (3<sup>rd</sup> ed.; An abridged Infancy/Early Childhood Version). *Attachment & Human Development*, *2*, 256-271.
- Biringen, Z. (2000). Emotional availability: Conceptualization and research findings. *American Journal of Orthopsychiatry*, *70*, 104-114.

- Blumer, H. (1933). Emotional possession: Fear and terror. In H. Blumer. *Movies and Conduct* (pp. 74-94). New York: Macmillan & Company.
- Bokhorst, C.L., Bakermans-Kranenburg, M.J., Fearon, R.M., Van IJzendoorn, M.H., Fonagy, P., & Schuengel, C. (2003). The importance of shared environment in mother-infant attachment security: A behavioral genetic study. *Child Development, 74*, 1769-1782.
- Boomsma, D.I., Orlebeke, J.F., & Van Baal, G.C.M. (1992). The Dutch Twin register: Growth data on weight and height. *Behavior Genetics, 22*, 247-251.
- Boucsein, W. (1992). *Electrodermal activity*. New York: Plenum Press.
- Bowlby, J. (1973). *Attachment and Loss: Vol 2. Separation*. New York: Basic Books.
- Boyce, W.T., & Ellis, B.J. (2005). Biological sensitivity to context: I. An evolutionary-developmental theory of the origins and functions of stress reactivity. *Development & Psychopathology, 17*, 271-301.
- Bretherton, I. (2000). Emotional availability: an attachment perspective. *Attachment and Human Development, 2*, 233-241.
- Bretherton, I., Ridgeway, D., & Cassidy, J. (1990). Assessing internal working models of attachment relationships: An attachment story completion task for 3-year-olds. In M.T. Greenberg, K. Cicchetti, & E.M. Cummings (Eds.), *Attachment in the preschool years: Theory, research and intervention* (pp. 87-119). Chicago: University of Chicago Press.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA London: Harvard University Press.
- Burnham, J.J., & Gullone, E. (1997). The fear survey schedule for children-II: A psychometric investigation with american data. *Behaviour Research and Therapy, 35*, 165-173.
- Buske-Kirschbaum, A., Jobst, S., Psych, D., Wustmans, A., Kirschbaum, C., Rauh, W., et al. (1997). Attenuated free cortisol response to psychosocial stress in children with atopic dermatitis. *Psychosomatic Medicine, 59*, 419-426.

- Buske-Kirschbaum, A., Von Auer, K., Krieger, S., Weis, S., Rauh, W., & Hellhammer, D. (2003). Blunted cortisol responses to psychosocial stress in asthmatic children: a general feature of atopic disease? *Psychosomatic Medicine*, *65*, 806-810.
- Cantor, J. (1997). Children's fright reactions to mass media. *Trends in Communication*, *2*, 73-89.
- Cantor, J. (2002). Fright reactions to mass media. In J. Bryant, & D. Zillmann (Eds.). *Media effects: Advances in theory and research* (pp. 287-306). Mahwah, NJ: Lawrence Erlbaum Associates.
- Carillo, E., Moya-Albiol, L., González-Bono, E., Salvador, A., Ricarte, J., Gómez-Amor, J. (2001). Gender differences in cardiovascular and electrodermal responses to public speaking task: The role of anxiety and mood states. *International Journal of Psychophysiology*, *42*, 253-264.
- Caspi, A., Sugden, K., Moffitt, T. E., Taylor, A., Craig, I. W., Harrington, H., et al. (2003). Influence of life stress on depression: moderation by a polymorphism in the 5-HTT gene. *Science*, *301*, 386-389.
- Cassidy, J. (1988). Child-mother attachment and the self in six-year-olds. *Child Development*, *59*, 121-134.
- Cassidy, J., & Shaver, P. R. (1999). *Handbook of attachment: Theory, research, and clinical applications*. New York: The Guilford Press.
- Christie, I.C., & Friedman, B.H. (2004). Autonomic specificity of discrete emotion and dimensions of affective space: a multivariate approach. *International Journal of Psychophysiology*, *51*, 143-153.
- Cole, P.M., Zahn-Waxler, C., Fox, N.A., Usher, B.A., & Welsh, J.D. (1996). Individual differences in emotion regulation and behavior problems in preschool children. *Journal of Abnormal Psychology*, *105*, 518-529.
- Darwin, C.R. (1872). *The expression of the emotions in man and animals*. London: Murray.

- Dawson, M.E., Schell, A.M., & Filion, D.L. (2000). The electrodermal system. In J.T. Cacioppo, L.G. Tassinary, & G.G. Berntson (Eds.), *Handbook of Psychophysiology*, 2<sup>nd</sup> ed. (pp. 200-223). Cambridge, UK: Cambridge University Press.
- Dearing, E., & Hamilton, L.C. (2006). Contemporary advances and classic advice for analyzing mediating and moderating variables. *Monographs of the Society for Research in Child Development*, 71, 88-104.
- Debiec, J., & LeDoux, J. (2004). Fear and the brain. *Social Research*, 71, 807-818.
- De Geus, E.J.C., Willemsen, G.H.M., Klaver, C.H.A.M., & Van Doornen, L.J.P. (1995). Ambulatory measurement of respiratory sinus arrhythmia and respiration rate. *Biological Psychology*, 41, 205-227.
- Dickerson, S. S., & Kemeny, M. E. (2004). Acute stressors and cortisol responses: a theoretical integration and synthesis of laboratory research. *Psychological Bulletin*, 130, 355-391.
- Diener, M.L., & Mangelsdorf, S.C. (1999). Behavioral strategies for emotion regulation in toddlers: Associations with maternal involvement and emotional expressions. *Infant Behavior and Development*, 22, 569-583.
- Easterbrooks, M. A., Biesecker, G., & Lyons-Ruth, K. (2000). Infancy predictors of emotional availability in middle childhood: the roles of attachment security and maternal depressive symptomatology. *Attachment and Human Development*, 2, 170-187.
- Ebstein, R.P. (2006). The molecular genetic architecture of human personality: Beyond self-report questionnaires. *Molecular Psychiatry*, 11, 427-445.
- El-Sheikh, M. (2007). Children's skin conductance level and reactivity: Are these measures stable over time and across tasks? *Developmental Psychobiology*, 49, 180-186.
- Evans, D., & Cruse, P. (2004). *Emotion, evolution, and rationality*. Oxford: Oxford University Press.

- Fowles, D.C., Christie, M.J., Edelberg, R., Grings, W.W., Lykken, D.T., & Venables, P.H. (1981). Committee Report: Publication recommendations for electrodermal measurements. *Psychophysiology*, *18*, 232-239.
- Fowles, D.C., & Kochanska, G. (2000). Temperament as a moderator of pathways to conscience in children: the contribution of electrodermal activity. *Psychophysiology*, *37*, 788-795.
- Fowles, D.C., Kochanska, G., & Murray, K. (2000). Electrodermal activity and temperament in preschool children. *Psychophysiology*, *37*( 6), 777-787.
- Fox, N.A. (2004). Temperament and early experience form social behavior. *Annals of the New York Academy of Sciences*, *1038*, 171-178.
- Fox, N.A., & Calkins, S.D. (2000). Multiple-measure approaches to the study of infant emotion. In M. Lewis & J.M. Haviland-Jones (Eds.), *Handbook of Emotion* (pp. 203-219). New York: The Guilford Press.
- Fox, N.A., & Card, J.A. (1999). Psychophysiological measures in the study of attachment. In J. Cassidy, & P.R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 226-248). New York: The Guilford Press.
- Fox, N.A., Hane, A.A., & Pine, D.S. (2007). Plasticity for affective neurocircuitry: How the environment affects gene expression. *Current Directions in Psychological Science*, *16*, 1-50.
- Fox, N.A., Henderson, H.A., Marshall, P.J., Nichols, K.E., & Ghera, M.M. (2005). Behavioral inhibition: Linking biology and behavior within a developmental framework. *Annual Review of Psychology*, *56*, 235-262.
- Fox, N. A., Nichols, K. E., Henderson, H. A., Rubin, K., Schmidt, L., Hamer, D., et al. (2005). Evidence for a gene-environment interaction in predicting behavioral inhibition in middle childhood. *Psychological Science*, *16*, 921-926.
- Frazier, T.W., Strauss, M.E., & Steinhauer, S.R. (2004). Respiratory sinus arrhythmia as an index of emotional response in young adults. *Psychophysiology*, *41*, 75-83.

- Furmark, T., Tillfors, M., Everz, P., Marteinsdottir, I., Gefvert, O., & Fredrikson, M. (1999). Social phobia in the general population: prevalence and sociodemographic profile. *Social Psychiatry and Psychiatric Epidemiology*, *34*, 416-424.
- Furmark, T., Tillfors, M., Garpenstrand, H., Marteinsdottir, I., Langstrom, B., Oreland, L., et al. (2004). Serotonin transporter polymorphism related to amygdala excitability and symptom severity in patients with social phobia. *Neuroscience Letters*, *362*, 189-192.
- Gallagher, K.C. (2002). Does child temperament moderate the influence of parenting on adjustment? *Developmental Review*, *22*, 623-643.
- Gelernter, J., Kranzler, H., & Cubells, J. F. (1997). Serotonin transporter protein (SLC6A4) allele and haplotype frequencies and linkage disequilibria in African- and European-American and Japanese populations and in alcohol-dependent subjects. *Human Genetics*, *101*, 243-246.
- Gilissen, R., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., & Van der Veer, R. (2008). Parent-child relationship, temperament, and physiological reactions to fear-inducing film clips: Further evidence for differential susceptibility. *Journal of Experimental Child Psychology*, *99*, 182-195.
- Gilissen, R., Koolstra, C.M., Van IJzendoorn, M.H., Bakermans-Kranenburg, M.J., & Van der Veer, R. (2007). Physiological reactions of preschoolers to fear-inducing film clips: Effects of temperamental fearfulness and quality of the parent-child relationship. *Developmental Psychobiology*, *49*, 187-195.
- Goodman, G., Aber, J. L., Berlin, L., & Brooks-Gunn, J. (1998). The relations between maternal behaviors and urban preschool children's internal working models of attachment security. *Infant Mental Health Journal*, *19*, 378-393.
- Gordis, E. B., Granger, D. A., Susman, E. J., & Trickett, P. K. (2006). Asymmetry between salivary cortisol and alpha-amylase reactivity to stress: Relation to aggressive behavior in adolescents. *Psychoneuroendocrinology*, *31*, 976-987.
- Groot, P.F.C., De Geus, E.J.C., & De Vries, J. (1998). *Ambulatory Monitor System. User manual v1.2 (AMS device 36xx)*. Vrije Universiteit, Department of Psychophysiology, Amsterdam, the Netherlands.



- Gullone, E. (2000). The development of normal fear: A century of research. *Clinical Psychological Review, 20*, 429-451.
- Hageman, D., Waldstein, S.R., Thayer, J.F. (2003). Central and autonomic nervous system integration in emotion. *Brain and Cognition, 52*, 79-87.
- Hariri, A. R., Mattay, V. S., Tessitore, A., Kolachana, B., Fera, F., Goldman, D., et al. (2002). Serotonin transporter genetic variation and the response of the human amygdala. *Science, 297*, 400-403.
- Heils, A., Teufel, A., Petri, S., Stober, G., Riederer, P., Bengel, D., et al. (1996). Allelic variation of human serotonin transporter gene expression. *Journal of Neurochemistry, 66*, 2621-2624.
- Hessler, D.M., & Katz, L.F. (2007). Children's emotion regulation: Self-report and physiological response to peer provocation. *Developmental Psychology, 43*, 27-38.
- Jansen, L.M.C., Gispen-de Wied, C.C., Van der Gaag, R.J., ten Hove, F., Willemsen-Swinkels, S.W.M., Harteveld, E., Van Engeland, H. (2000). Unresponsiveness to psychosocial stress in a subgroup of autistic-like children, Multiple Complex Developmental Disorder. *Psychoneuroendocrinology, 25*, 753-764.
- Kagan, J., Reznick, J. S., & Snidman, N. (1988). Biological bases of childhood shyness. *Science, 240*, 167-171.
- Kalamas, A.D., & Gruber, M.L. (1998). Electrodermal responses to implied versus actual violence on television. *The Journal of General Psychology, 125*, 31-37.
- Katsuragi, S., Kunugi, H., Sano, A., Tsutsumi, T., Isogawa, K., Nanko, S., et al. (1999). Association between serotonin transporter gene polymorphism and anxiety-related traits. *Biological Psychiatry, 45*, 368-370.
- Kaufman, J., Yang, B., Douglas-Palumberi, H., Houshyar, S., Lipschitz, D., Krystal, J. H., et al. (2004). Social supports and serotonin transporter gene moderate depression in maltreated children. *PNAS, 101*, 17316-17321.

- Kirschbaum, C., Pirke, K. M., & Hellhammer, D. H. (1993). The 'Trier Social Stress Test'--a tool for investigating psychobiological stress responses in a laboratory setting. *Neuropsychobiology*, *28*, 76-81.
- Klaver, C. H. A. M., de Geus, E. J. C., & de Vries, J. (1994). Ambulatory Monitoring System. In F. J. Maarse, A. E. Akkerman, A. N. Brand, L. J. M. Mulder, & Van der Stelt (Eds.), *Computers in Psychology: Applications, methods and instrumentation* (pp 254-268). Lisse: Swets & Zeitlinger.
- Klein Velderman, M., Bakermans-Kranenburg, M.J., Juffer, F., & Van IJzendoorn, M.H. (2006). Effects of attachment-based interventions on maternal sensitivity and infant attachment: differential susceptibility of highly reactive infants. *Journal of Family Psychology*, *20*, 266-274.
- Kochanska, G., Aksan, N., & Joy, M.E. (2007). Children's fearfulness as a moderator of parenting in early socialization: Two longitudinal studies. *Developmental Psychology*, *43*, 222-237.
- Kochanska, G., Aksan, N., & Koenig, A. L. (1995). A longitudinal study of the roots of preschoolers' conscience: Committed compliance and emerging internalization. *Child Development*, *66*, 1752-1769.
- Kubicek, L.F., & Emde, R.N. (1998). Emotion expression and regulation of pleasure and fear in earlier- and later-talking toddlers. *Infant Behavior and Development*, *21*, 512.
- Lang, P.J., Davis, M., & Öhman, A. (2000). Fear and anxiety: animal models and human cognitive psychophysiology. *Journal of Affective Disorders*, *61*, 137-159.
- LeDoux, J. (1998). Fear and the brain: Where have we been, and where are we going? *Biological Psychiatry*, *44*, 1229-1238.
- LeDoux, J. (2003). The emotional brain, fear, and the amygdala. *Cellular and Molecular Neurobiology*, *23*, 727-737.
- Lenssens, M. (Director). (2000). *Tik Tak 15, de regenbooghond en andere verhalen* [Film]. The Netherlands: Weton-Wesgram B.V.

- Lesch, K.P. (2003). Neuroticism and serotonin: A developmental genetic perspective. In R. Plomin, J.C. DeFries, I.W. Craig, P. McGuffin (Eds.). *Behavioral genetics in the postgenomic era* (pp. 389-415). Washington, D.C.: American Psychological Association.
- Lesch, K. P., Bengel, D., Heils, A., Sabol, S. Z., Greenberg, B. D., Petri, S., et al. (1996). Association of anxiety-related traits with a polymorphism in the serotonin transporter gene regulatory region. *Science*, *274*, 1527-1531.
- Lesch, K. P., & Mössner, R. (1998). Genetically driven variation in serotonin uptake: Is there a link to affective spectrum, neurodevelopmental, and neurodegenerative disorders? *Biological Psychiatry*, *44*, 179-192.
- Marsden, P. (Producer). (2000). *Dinosaur* [Film]. United States: Walt Disney Pictures.
- Middeldorp, C. M., de Geus, E. J., Beem, A. L., Lakenberg, N., Hottenga, J. J., Slagboom, P. E., et al. (2007). Family based association analyses between the serotonin transporter gene polymorphism (5-HTTLPR) and neuroticism, anxiety and depression. *Behavioral Genetics*, *37*, 294-301.
- Mikulincer, M., & Shaver, P.R. (2005). Mental representations of attachment security: Theoretical foundation for a positive social psychology. In M.W. Baldwin (Ed.), *Interpersonal cognition* (pp. 233-266). New York: The Guilford Press.
- Mössner, R., Henneberg, A., Schmidt, A., Syagailo, Y.V., Grässle, M., Hennig, T., et al. (2001). Allelic variation of serotonin transporter expression is associated with depression in Parkinson's disease. *Molecular Psychiatry*, *6*, 350-352.
- Munafo, M. R., Clark, T., & Flint, J. (2005). Does measurement instrument moderate the association between the serotonin transporter gene and anxiety-related personality traits? A meta-analysis. *Molecular Psychiatry*, *10*, 415-419.
- Nachmias, M., Gunnar, M., Mangelsdorf, S., Parritz, R.H., & Buss, K. (1996). Behavioral inhibition and stress reactivity: The moderating role of attachment security. *Child Development*, *67*, 508-522.
- Oppenheim, D. (1997). The attachment doll-play interview for preschoolers. *International Journal of Behavioral Development*, *20*, 681-697.

- Osborn, D.K., & Endsley, R.C. (1971). Emotional reactions of young children to TV violence. *Child Development*, 42, 321-331.
- Page, T.F. (2001). The social meaning of children's narratives: A review of the attachment-based narrative story stem technique. *Child and Adolescent Social Work Journal*, 18, 171-187.
- Palomba, D., Sarlo, M., Angrilli, A., Mini, A., & Stegagno, L. (2000). Cardiac responses associated with affective processing of unpleasant film stimuli. *International Journal of Psychophysiology*, 36, 45-57.
- Phan, K.L., Wager, T., Taylor, S.F., & Liberzon, I. (2002). Functional neuroanatomy of emotion: A meta-analysis of emotion activation studies in PET and fMRI. *NeuroImage* 16, 331– 348.
- Plomin, R., Owen, M. J., & McGuffin, P. (1994). The genetic basis of complex human behaviors. *Science*, 264, 1733-1739.
- Porges, S.W. (2003). Social engagement and attachment: A phylogenetic perspective. *Annals of the New York Academy of Sciences*, 1008, 31-47.
- Propper, C., & Moore, G. A. (2006). The influence of parenting on infant emotionality: A multi-level psychobiological perspective. *Developmental Review*, 26, 427-460.
- Ravaja, N. (2004). Contributions of psychophysiology to media research: Review and recommendations. *Media Psychology*, 6, 193-235.
- Riksen-Walraven, J.M., Smeekens, S., & Stapert, W.G.H.M. (1999). Meten van de kwaliteit van de ouder-kind interactie: Is één keer observeren genoeg? [Measurement of the quality of the parent-child interaction: Is one time observing enough?]. *Nederlands Tijdschrift voor Opvoeding, Vorming en Onderwijs*, 15, 67-81.
- Rothbart, M.K., Ahadi, S.A., & Hershey, K.L. (1994). Temperament and social behavior in childhood. *Merrill-Palmer Quarterly*, 40, 21-39.

- Rothbart, M.K., Ahadi, S.A., Hershey, K.L., & Fisher, P. (2001). Investigations of temperament at 3–7 years: The Children's Behavior Questionnaire. *Child Development, 72*, 1394-1408.
- Ruiz-Adial, E., Sollers, J.J., Vila, J., & Thayer, J.F. (2003). The rhythm of the heart in the blink of an eye: Emotion-modulated startle magnitude covaries with heart rate variability. *Psychophysiology, 40*, 306-313.
- Rutter, M (2006). *Genes and Behavior: Nature-nurture interplay explained*. Oxford, UK: Blackwell.
- Rutter, M., Moffitt, T. E., & Caspi, A. (2006). Gene-environment interplay and psychopathology: Multiple varieties but real effects. *Journal of Child Psychology and Psychiatry, 47*, 226-261.
- Salomon, K., Matthews, K.A., & Allen, M. (2000). Patterns of sympathetic and parasympathetic reactivity in a sample of children and adolescents. *Psychophysiology, 37*, 842-849.
- Scarpa, A., Raine, A., Venables, P.H., & Mednick, S.A. (1997). Heart rate and skin conductance in behaviorally inhibited Mauritian children. *Journal of Abnormal Psychology, 106*, 182-190.
- Seifer, R., Sameroff, A.J., Baldwin, C.P., & Baldwin, A. (1992). Child and family factors that ameliorate risk between 4 years and 13 years of age. *Journal of the American Academy of Child and Adolescent Psychiatry, 31*, 893-903.
- Sen, S., Burmeister, M., & Ghosh, D. (2004). Meta-analysis of the association between a serotonin transporter promoter polymorphism (5-HTTLPR) and anxiety-related personality traits. *American Journal of Medical Genetics Part B-Neuropsychiatric Genetics, 127B*, 85-89.
- Solomon, J., & George, C. (1999). The measurement of attachment security in infancy and childhood. In J. Cassidy, & P.R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 287-317). New York: The Guilford Press.

- Stein, M. B., Schork, N. J., & Gelernter, J. (2007). Gene-by-environment (serotonin transporter and childhood maltreatment) interaction for anxiety sensitivity, an intermediate phenotype for anxiety disorders. *Neuropsychopharmacology*, 1-8.
- Suomi, S.J. (1997). Early determinants of behaviour: Evidence from primate studies. *British Medical Bulletin*, 53, 170-184.
- Suomi, S.J. (1999). Attachment in Rhesus monkeys. In J. Cassidy, & P.R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 181-197). New York: The Guilford Press.
- Suomi, S. J. (2003). Gene-environment interactions and the neurobiology of social conflict. *Roots of Mental Illness in Children, 1008*, 132-139.
- Tabachnick, B.G., & Fidell, L.S. (2001). *Using multivariate statistics (4<sup>th</sup> ed.)*. Boston: Allyn and Bacon.
- Task Force of the European Society of Cardiology the North American Society of Pacing Electrophysiology. (1996). Heart rate variability: Standards of measurement, physiological interpretation, and clinical use. *Circulation*, 93, 1043-1065.
- Thayer, J.F., & Lane, R.D. (2000). A model of neurovisceral integration in emotion regulation and dysregulation. *Journal of Affective Disorders*, 61, 201-216.
- Uhart, M., McCaul, M. E., Oswald, L. M., Choi, L., Wand, G.S. (2004). GABRA6 gene polymorphism and an attenuated stress response. *Molecular Psychiatry*, 9, 998-1006.
- Umekage, T., Tochigi, M., Marui, T., Kato, C., Hibino, H., Otani, T., et al. (2003). Serotonin transporter-linked promoter region polymorphism and personality traits in a Japanese population. *Neuroscience Letters*, 337, 13-16.
- Valkenburg, P.M. (2004). Fear responses to news and entertainment. In P.M. Valkenburg, *Children's responses to the screen: A media psychological approach* (pp. 58-83). Mahwah, NJ: Lawrence Erlbaum Associates.

- Valkenburg, P.M., Beentjes, J.W.J., Nikken, P., & Tan, E. (2002). Kijkwijzer: The Dutch rating system for audiovisual productions. *Communications: The European Journal of Communication Research*, 27, 79-102.
- Valkenburg, P.M., Cantor, J., & Peeters, A.L. (2000). Fright reactions to television: A child survey. *Communication Research*, 27, 82-99.
- Van Evra, J. (2004). *Television and child development*, 3<sup>rd</sup> ed. Mahwah, NJ: Lawrence Erlbaum Associates.
- Van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2006). DRD4 7-repeat polymorphism moderates the association between maternal unresolved loss or trauma and infant disorganization. *Attachment and Human Development*, 8, 291-307.
- Vaughn, B.E., & Waters, E. (1990). Attachment behavior at home and in the laboratory: Q-sort observations and Strange Situation classifications of one-year-olds. *Child Development*, 61, 1965-1973.
- Verschueren, K., & Marcoen, A. (1994). *Test met gehechtheidsverhalen classificatiesysteem: Aanpassing van de Doll Stories Completion Task van Cassidy (1986)* [Adaptation of the Doll Stories Completion Task of Cassidy 1986]. Unpublished manual, Katholieke Universiteit Leuven, Center for Developmental Psychology, Louvain, Belgium.
- Verschueren, K., & Marcoen, A. (1999). Representation of Self and Socioemotional Competence in Kindergartners: Differential and Combined Effects of Attachment to Mother and to Father. *Child Development*, 70, 183–201.
- Verschueren, K., Marcoen, A., & Schoefs, V. (1996). The internal working model of the self, attachment, and competence in five-year-olds. *Child Development*, 67, 2493-2511.
- Whalen P.J., Shin L.M., McInerney S.C., Fischer H., Wright C.I., & Rauch S.L. (2001). A functional MRI study of human amygdala responses to facial expressions of fear versus anger. *Emotion*, 1, 70-83.

Willis-Owen, S. A., Turri, M. G., Munafo, M. R., Surtees, P. G., Wainwright, N. W., Brixey, R. D., et al. (2005). The serotonin transporter length polymorphism, neuroticism, and depression: a comprehensive assessment of association. *Biological Psychiatry*, *58*, 451-456.

Ziv, Y., Aviezer, O., Gini, M., Sagi, A., & Koren-Karie, N. (2000). Emotional availability in the mother-infant dyad as related to the quality of infant-mother attachment relationship. *Attachment and Human Development*, *2*, 149-169.



