

Curriculum Vitae February 2015

Personal details

Title(s), initial(s), first name, surname: Prof. dr. M.E.J. (Maartje) Raijmakers
Male/female: Female
Date and place of birth: 16/03/1967 Vesseem CA, NL
Nationality: Dutch
Children: 3 children (1999, 2001, 2005).

Education

PhD.

1996, *Magna Cum Laude*. Department of Psychology, University of Amsterdam. Supervisor (*Copromotor & Promotor*): Prof. dr. P. C. M. Molenaar & Prof. dr. M.W. van der Molen. Dissertation Title: Epigenesis in neural network models of cognitive development.

Master

1992, *Magna Cum Laude*: Department of Philosophy, University of Amsterdam. Major: Philosophical Logic and Artificial Intelligence. Supplementary courses in Biology and Psychology.

Work experience since graduating

- Associate Professor, Inst. of Pedagogics, Dept. Educational Sciences, Leiden University (01/08/2015 – present; fte = 0.8, fixed term)
- Affiliated Professor, Dept. of Psychology, University of Amsterdam (01/09/2011 – present; fte = 0.2). Affiliated to National Center for Science and Technology/science center NEMO.
- Associate Professor, Dept. of Psychology, University of Amsterdam (01/01/2008 – present; fte = 1.0 01/08/2008 – 01/07/2016, fixed term)
- Assistant Professor, Dept. of Psychology, University of Amsterdam (01/04/2007 – 01/01/2008; fte = 0.8, fixed term)
- Postdoc (KNAW-fellowship + extension), Dept. of Psychology, University of Amsterdam (01/04/2002 – 31/03/2007; fte = 0.8, fixed term). Two grants from the Royal Netherlands Academy of Art and Sciences: *Qualitative differences in categorization learning*.
- Postdoc (MaGW/NWO), Dept. of Psychology, University of Amsterdam (01/04/1999 – 31/03/2002; fte = 1.0 until 10/1999, fte = 0.8, fixed term) Personal grant MaGW, NWO: *Experimental-psychological and statistical validation of cognitive neural network models*.
- Postdoc (SGW/NWO), Dept. of Psychology, University of Amsterdam (01/04/1997 – 31/03/1999; fte = 1.0, fixed term). Personal grant SGW, NWO: *Bifurcation analysis of neural network models of cognitive development*.
- PhD., Dept. of Psychology, University of Amsterdam (01/09/1992 until 31/08/1996), fte = 1.0, fixed term: *Epigenesis in neural network models of cognitive development*.

Teaching in Academics

- *Propedeuse Ontwikkelingspsychologie*, (2009 – 2015, First year Psychology).
- *Basisprogramma Ontwikkelingspsychologie, incl. werkgroepen* (2008 - heden). 3rd year BA. Design and Coordination.
- *Cognitive Development* (2007 - 2014 in Dutch). 3rd year BA. Design, teaching, coordination.
- *Advanced Topics in Cognitive Development* (2006, 2007, 2008, 2010, 2012, 2014)

- in English). Research Master. Design, coordination, teaching.
- *Summerschool of the CSCA: Developmental Disorders* (2006). Visiting prof. A. Karmiloff-Smith. Design, coordination, teaching.
- *Master Theses, Research Projects, (students school psychology, research master students, interdisciplinary students)*
- *Bachelor Theses, (students school psychology, research master students).*
- *Intern-ships (Deventer Hospital infant health, science center NEMO informal education).*
- *Infant development* (2002 – 2005, Dutch), MA course. Master course. Design, coordination, teaching.
- *Simulation of Growth and Development* (1998 – 2002), Master course. Co-design, coordination, teaching.
- (2003) Co-designing of diagnostics-education with developmental section and Psychology Department.
- (2002-2004) Representative of Dept. of Psychology in the Master's education committee of the Cognitive Science Center Amsterdam. Design of the first interdisciplinary teaching program of the Master's Cognitive Science.

Primary school teaching and education

- Workshop mental models in science learning for primary school teachers. Design and teaching in collaboration with science center NEMO (2011, 2012, 2014, 2015).
- Designing teaching materials for inquiry-based science learning (mental models and the understanding of shadowsize; tree-determination, 2011, 2012).
- Franse, R., van Schijndel, T.J.P., Raijmakers, M.E.J. et al. (Jan. 2010 – Dec. 2011). Kleuters aan zet: exhibition in science center NEMO for young children (4 – 6 years) about the theme of shadow.

Supervisory responsibilities, PhD and Postdocs

(5 graduated + 2 in progress PhD's)

- Supervisory responsibilities for postdoc P. Kriengwatana (Amsterdam Brain & Cognition – September 2014 – February 2016).
- Supervisory responsibilities for postdoc C. Junge (program Brain & Cognition – October 2012 – October 2014).
- Supervision Postdoc T. van Schijndel (*Talentenkracht* February 2012).
- Supervision PhD-student T. van Schijndel (*Talentenkracht/Aspasia-project* October 2007 – October 2011,). *A developmental psychology perspective on preschool science learning: Children's exploratory play, naïve theories, and causal learning.* April 2012
- Supervision (promotor) Postdoc B. van Bers (January 2014 – December 2014).
- Supervision (promotor) PhD-student B. van Bers (VIDI-project October 2007 – November 2013) *Dynamics, models, and mechanisms of the cognitive flexibility of preschoolers.* March 2014.
- Supervisory responsibilities for postdoc D. Mandell (VIDI-project October 2007 – October 2011; priority program Brain & Cognition – October 2012).
- Supervision (promotor) PhD-student R. Franse (Curious Minds, January 2012 – January 2016).
- Co-promotor PhD-student E. Aktar, promotor S. Bögels (*Zwaartepunt-project* October 2010 – March 2015).
- Supervision postdoc Dr. M. Counihan/Dr. N. Gierasimczuk (*TalentenKracht-project kwartetten en kinderlogica* (January 2009 – December 2010).

- Supervision (co-promotor) of PhD. V. A. Schmittmann (2003 – December 2009).
Project: *Analysis of qualitatively different learning forms by testing multi-modality and other catastrophe flags.* Cum Laude
- Co-Supervision (co-promotor) of PhD. A. Ploeger (2004 – December 2008).
Project: *Integrating developmental psychology, dynamical systems theory and evolutionary theory.*
- Supervision postdoc I. Visser with personal NWO-grant VENI (2003 – 2005).
Project: *Implicit learning and explicit knowledge: the associative acquisition of rule following behaviour*
- Supervision postdoc I. Visser in FAR6-project: ESF grant from the European Committee (01/01/2006 – 01/01/2008). Project: *The development of rational and associative learning: Statistical mixture models of sequential behavior.*
- Supervision (co-promotor) PhD. I. Visser (1997 – 2002; Doctorate 16/05/2002).
Title: *Rules and Associations: Hidden Markov models and neural networks in the psychology of learning.*
- Supervision junior researcher T. van Schijndel at (*Talentenkracht* project March 2006 – October 2007).

Other academic activities/management

- Chair of the research master thesis & internship board, Dept. of Psychology, UvA (2013 – 2015).
- Member of the board of Section Developmental Psychology (2006 – 2015).
- Membership editorial board *Infant and Child Development* (2004-present).
- Member of the Master's educational committee of the Cognitive Science Center Amsterdam, which developed a accredited Master's program Cognitive Science (2002-2004). Currently, occasional adviser of the Master's program.
- Full membership of the IOPS research school (Interuniversity Graduate School of Psychometrics and Sociometrics).
- Occasional reviews for the following international journals: *Neural Networks*, *Science Education*, *International Journal of Science Education*, *Philosophical Psychology*, *Developmental Science*, *Biological Psychology*, *Journal of Experimental Psychology: Learning, Memory and Cognition*, *Cognitive Psychology*, *Journal of Experimental Child Psychology*, *Journal of Neuropsychology*. (conferences) *IEEE ICDL 2007*, *EpiRob-08*
- Occasional reviews for NWO-grants and NSF-grants.
- (1994-1996) Scientific committee Department of Psychology, UvA.

Public events

- Raijmakers, M.E.J., van Schijndel, T.J.P., Franse, R.K., Gierasimczuk, N. & van Es, S. *TalentenKrachtdag in Naturalis* (2008, 2009, 2010, 2011, 2012). Organised by *Curious Minds* (Platform Bèta Techniek), Den Haag.
- Raijmakers, M.E.J., van Schijndel, T.J.P., Franse, R.K. (2013, 2014). *Weekend van de Wetenschap*.

Scholarships and prizes

In total € 3.138.000 euros from which € 1.500.000 euros in person-based grants (SGW-postdoc, VENI, KNAW-fellowship, VIDI, ASPASIA).

- 2015 Franse, R.K. & Raijmakers, M.E.J. (2015). *Museumbeurs*, NWO. €50k
- 2014 Raijmakers M.E.J. & Boersma, P. (2014). *ABC - Talent. Postdoc Grant from Priority Program Brain & Cognition*. June 2014. € 125k

- 2012 Raijmakers M.E.J. (2012). Guided Discovery Learning Adapted to the Individual Child. Grant from *Platform Bèta Techniek* -program *TalentenKracht*. January 2012. € 400k
- 2009 Raijmakers M.E.J., vanderMaas, H.L.J. & vanBenthen, J.F.A.K. (2009). Causaal redeneren en experimenteren door kinderen van 3 tot 5 jaar; Kwartetten en Kinderlogica. Grant from *Platform Bèta Techniek* -program *TalentenKracht*. January 2009. € 170k
- 2009 Boersma, P., Raijmakers, M.E.J., Bögels, S. (2009). Models and tests of early category formation: interactions between cognitive, emotional, and neural mechanisms. Subsidie in het kader van het Cognition Program, Cognitive Science Center Amsterdam. December 2009. € 350k.
- 2007 *Talentenkracht (Platform Bèta Techniek)* - Grant for research on the scientific reasoning of preschoolers € 100.000 (3^e geldstroom)
- 2007 *Talentenkracht (Platform Bèta Techniek)* - Grant for research on the scientific reasoning of preschoolers 2008-2010 – € 220k (3^e geldstroom)
- 2006 *Talentenkracht (Platform Bèta Techniek)* Grant for research on the scientific reasoning of preschoolers - € 60.000 (3^e geldstroom)
- 2006 NWO – VIDI grant 2007-2012: The dynamics of simple rule learning in infants and preschoolers. € 600.000 (€ 400.000 from NWO). postdoc, .8 fte for 4 years. PhD. 1.0 fte for 4 years.
- 2006 NWO - ASPASIA grant for adequate representation of women in higher positions in science. - €100.000.
- 2004 PhD. Grant NWO in the Evolution & Behaviour program. Project: *Integrating developmental psychology, dynamical systems theory and evolutionary theory*. Co-applicant.
- 2004 Grant from the European Committee, EC Framework 6 project 516542 (NEST), *From Associations to Rules in the Development of Concepts*. International project with partners in 5 European countries. (At the UvA: post-doc 2 years + research assistant + additional financing). 213K€
- 2004 Extension of KNAW-fellowship (post-doc 2 years + additional financing). Grant from the Royal Netherlands Academy of Art and Sciences: *Qualitative differences in categorization learning*.
- 2003 Preparatory grant of the NWO Cognition Program, which resulted in an international workshop on *The Origin of Novelty*.
- 2001 KNAW-fellowship (post-doc 2 years). Grant from the Royal Netherlands Academy of Art and Sciences: *Constructivist models of cognitive development*.
- 1999 Personal post-doc grant MaGW, NWO (post-doc 3 years): *Experimental-psychological and statistical validation of cognitive neural network models*.
- 1997 Personal post-doc grant SGW, NWO (post-doc 2 years): *Bifurcation analysis of neural network models of cognitive development*.

External Collaborations

- Prof. Bill Batchelder, University of Irvine (Mathematical modelling)
- Prof. Stephen Lea, Exeter University (comparative research)
- Dr. Emmanuel Pothos, Cardiff University; Swansea University, (modelling implicit learning).
- Prof. Eveline Crone, University of Amsterdam/Leiden University (development of learning).
- Prof. Scott Johnson, University of California, LA. (Infant research).
- Dr. Paola Escudero, MARCS Laboratories, University of Western Sydney.
- Prof. Susan Bögels, Pedagogics, FMG, UvA. (Infant research).

- Prof. Paul Boersma, Institute of Phonetic Sciences, UvA. (Infant Research).
- Prof. Rineke Verbrugge, Institute of Artificial Intelligence, University of Groningen (logical reasoning).
- Prof. Johan van Benthem, FNWI, UvA (project *TalentenKracht*)
- Science Learning Center NEMO (NEMO/NCWT: R. Franse, A. Haarhuis, project *TalentenKracht*).
- *TalentenKracht* (Platform Beta Techniek) P. van Geert/H. Steenbeek (RUG), L. Verhoeven (KUN), J. Jolles (VU), H. Swaab (UL), M. van den Heuvel-Panhuizen (FI).
- Dr. N. Kirkham, Birkbeck college, University London.
- Prof. dr. Monique Volman, Dept. Pedagogics, University of Amsterdam
- Dr. Mariette Huizinga, Faculteit der Psychologie en Pedagogiek (Dept. Educational Neuroscience), Vrije Universiteit.

Visits of conferences

Selection of conferences with oral contributions and/or organization of symposia

- SRCD (Society for Research in Child Development, biennial 2009 - 2015)
- ICIS (Biennial International Conference on Infant Studies, 2008 - 2014)
- ECSITE (European Network of Science Centres and Museums, 2011 - 2015)
- BPS (British Psychological Society, 2013, 2014)
- Cognitive Science (2009)
- Mathematical Psychology (2009)
- VNOP (Vereniging van Nederlandse Ontwikkelingspsychologen, 2010, 2012, 2014)

List of Publications

International refereed journals

- van Schijndel, T. J., Visser, I., van Bers, B. M., & **Raijmakers**, M. E. (2015). Preschoolers perform more informative experiments after observing theory-violating evidence. *Journal of experimental child psychology*, *131*, 104-119.
- van Bers, B. M., Visser, I., & **Raijmakers**, M. (2014). Preschoolers can form abstract rule representations regardless of cognitive flexibility. *Journal of experimental child psychology*, *124*, 50-66.
- van Bers, B. M., Visser, I., & **Raijmakers**, M. (2014). Preschoolers learn to switch with causally related feedback. *Journal of experimental child psychology*, *126*, 91-102.
- Ter Schure, S, Mandell, DJ, Escudero, P, **Raijmakers**, M.E.J., Johnson, S.P. (2014). Learning Stimulus-Location Associations in 8- and 11-Month-Old Infants: Multimodal Versus Unimodal Information. *Infancy* *19* (5), 476-495.
- Peters, S., Koolschijn, P. C. M., Crone, E. A., Van Duijvenvoorde, A. C., & **Raijmakers**, M. E. (2014). Strategies influence neural activity for feedback learning across child and adolescent development. *Neuropsychologia*, *62*, 365-374.
- Peters, S., Braams, B.R., **Raijmakers**, M.E., Koolschijn, P.C.M.P., Crone, E.A (2014). The neural coding of feedback learning across child and adolescent development. *Journal of Cognitive Neuroscience*, *26* (8): 1705-1720.
- Peters, S., Koolschijn, P.C.M.P., Crone, E.A., van Duijvenvoorde, A.C.K., **Raijmakers**, M.E.J. (2014). Strategies influence neural activity for feedback learning across child and adolescent development. *Neuropsychologia*, *62*: 365-374.
- Andersen, L. M., Visser, I., Crone, E. A., Koolschijn, P. C., & **Raijmakers**, M. E. (2014). Cognitive Strategy Use as an Index of Developmental Differences in Neural Responses to Feedback. *Developmental Psychology*, *50*(12), 2686.

- Raijmakers**, M. E. J. , Schmittmann, & V. D., Visser, I. (2014). Costs and benefits of automatization in category learning of ill-defined rules. *Cognitive Psychology*, *69*, p. 1-24.
- Frappart, S., **Raijmakers**, M. E. J. & Frède, V. (2014). What do Children Know and Understand about Universal Gravitation? Structural and Developmental Aspects. *Journal of Experimental Child Psychology*, *120*, p. 17 – 38.
- Jansen, B., Hofman, A, Straatemeier, M., van Bers, B., **Raijmakers**, M. E. J., & van der Maas, H. L. J. (2014). The role of pattern recognition in children's exact enumeration of small numbers. *British Journal of Developmental Psychology*, *32*, 178–194.
- Raijmakers**, M. E., Mandell, D. J., van Es, S. E., & Counihan, M. (2014). Children's strategy use when playing strategic games. *Synthese*, *191*(3), 355-370.
- Wanrooij, K., Escudero, P. & **Raijmakers**, M.E.J. (2013). What do listeners learn from exposure to a vowel distribution? An analysis of listening strategies in distributional learning. *Journal of Phonetics* , *41*(5), 307-319.
- Gierasimczuk, N., Van der Maas, H.L.J., & **Raijmakers**, M.E.J. (2013). An Analytic Tableaux Model for Deductive Mastermind Empirically Tested with a Massively Used Online Learning System. *Journal of Logic, Language and Information* *22* (3), 297-314
- Mandell, D.J. & **Raijmakers** M.E.J. (2012). Using a single feature to discriminate and form categories: The interaction between color, form and exemplar number. *Infant Behavior & Development* *35*(3), 348-359.
- Visser, I., & **Raijmakers**, M. E. J. (2012). Developing Representations of Compound Stimuli. *Frontiers in Psychology*, *3*(March), 1-11.
- Schmittmann, V. D., van der Maas, H. L. J., & **Raijmakers**, M. E. J. (2012). Distinct discrimination learning strategies and their relation with spatial memory and attentional control in 4- to 14-year-olds. *Journal of experimental child psychology*, *111*(4), 644-62.
- van Bers, B. M. C. W., Visser, I., van Schijndel, T. J. P., Mandell, D. J. and **Raijmakers**, M. E. J. (2011). The Dynamics of Development on the Dimensional Change Card Sorting task. *Developmental Science* *14*(5), p. 960-971.
- Van Schijndel, T. J. P., Franse, R. K., & **Raijmakers**, M. E. J. (2010). The Exploratory Behavior Scale: Assessing young visitors' hands-on behavior in science museums. *Science Education*, *94*(5), 794-809.
- Van Schijndel, T.J.P., Singer, E., Maas, H. van der, & **Raijmakers**, M. (2010). A sciencing programme and young children's exploratory play in the sandpit. *European Journal of Developmental Psychology*, *7*: 5, 603 — 617.
- Schmittmann, V. D., Dolan, C. V., **Raijmakers**, M. E. J., & Batchelder, W. H. (2010). Parameter identification in multinomial processing tree models. *Behavior research methods*, *42*(3), 836-46.
- Kan, KJ, Ploeger, A. , **Raijmakers** M.E.J., Dolan, C.V., & van der Maas, H.L.J. (2010). Nonlinear Epigenetic Variance: Review and Simulations. *Developmental Science*, *1* - 17.
- Raijmakers**, M. E. J., Coffey, E., Stevenson, C., Winkel, J., & Berkeljon, A. (2009). An ART neural network model of discrimination shift learning. *The annual meeting of the cognitive science society Amsterdam*, p. 791 – 796.
- Visser, I., Pothos, E., & **Raijmakers**, M.E.J. (2009). Individual Strategies in Artificial Grammar Learning. *American Journal of Psychology*, *122* (3), p, 293-308.
- Van der Maas, H. L. J., & **Raijmakers**, M. E. J. (2009). Transitions in cognitive development: prospects and limitations of a neural dynamic approach. In J.P. Spencer, M. Thomas, & J. McClelland (Eds). *Toward a New Grand Theory of Development: Connectionism and Dynamic Systems Theory Re-Considered*.

- Oxford University Press.
- Ploeger, A., van der Maas, H.L.J., **Raijmakers**, M.E.J., & Galis, F. (2009). Why did the savant syndrome not spread in the population? A psychiatric example of a developmental constraint. *Psychiatry Research*, 166, 85-90.
- vanEs, S.E., vanSchijndel, T.J.P., Franse, R., & **Raijmakers**, M. E. J. (2009). Children's thoughts on unborn babies: Representational redescription in preconceptions of children on fetal development. *The annual meeting of the cognitive science society Amsterdam*, p. 112 – 117.
- Ploeger, A., van der Maas, H.L.J., & **Raijmakers**, M.E.J. (2008). Is evolutionary psychology a metatheory for psychology? A discussion of four major issues in psychology from an evolutionary developmental perspective. *Psychological Inquiry*, 19, 1-18.
- Ploeger, A., van der Maas, H.L.J., & **Raijmakers**, M.E.J. (2008). Is evolutionary developmental biology a viable approach to the study of the human mind? (Reply to commentaries). *Psychological Inquiry*, 19, 41-48.
- van Duijvenvoorde, A.C.K., Zanolie K., Rombouts, S.A.R.B., **Raijmakers**, M.E.J., and Crone E.A. (2008). Evaluating the Negative or Valuing the Positive? Neural Mechanisms Supporting Feedback-Based Learning across Development. *J. Neurosci.* 28: 9495-9503.
- Jansen, Brenda R. J., Maartje E. J. **Raijmakers**, and Ingmar Visser (2007). Belief change on the balance scale task. *Synthese*, 155(2), p. 211-236.
- Visser, I., **Raijmakers**, M.E.J. & Molenaar, P.C.M. (2007). Characterizing Sequence Learning: Online Measures and Hidden Markov Models Show Associations and Dissociations. *Memory & Cognition*, 35(6), p.1502-1517.
- Schmittmann, V. D., Visser, I., & **Raijmakers**, M. E. J. (2006). Multiple learning modes in the development of performance on a rules-based category-learning task. *Neuropsychologia*, 44 (11), 2079 -91.
- van der Maas, H.L.J., Dolan, C.V., Grasman, R.P.P.P., Wicherts, J.M., Huizinga, H.M., **Raijmakers**, M.E.J. (2006). A dynamical model of general intelligence: The positive manifold of intelligence by mutualism. *Psychological Review*, Vol. 113 (2006), p. 842-861
- van der Maas, H.L.J. , M.E.J. **Raijmakers**, & Visser, I. (2005). Inferring the Structure of Latent Class Models Using a Genetic Algorithm. *Behavior Research Methods, Instruments & Computers*, 37(2), pp. 340-352.
- Raijmakers**, M.E.J. & Molenaar, P.C.M. (2004). Modeling developmental transitions in Adaptive Resonance Theory. *Developmental Science*, 7(2), 149-157.
- Raijmakers**, M.E.J., Jansen, B.R.J. & van der Maas, H.L.J. (2004). Rules and Development in Triad Classification Task Performance. *Developmental Review*, 24(3), 289-321.
- Visser, I., **Raijmakers**, M.E.J. & Molenaar, P.C.M. (2002) Fitting hidden Markov models to psychological data. *Scientific Programming*, 10, 185-199.
- Raijmakers**, M.E.J., Dolan, C.V. & Molenaar, P.C.M. (2001). Finite Mixture Distribution Models of Simple Discrimination Learning. *Memory & Cognition*.
- Molenaar, P.C.M. & **Raijmakers**, M.E.J. (2000). A causal interpretation of Piaget's theory of cognitive development: Reflections on the relationship between epigenesis and nonlinear dynamics. *New ideas in psychology*, 18(1), p. 41-56.
- Molenaar, P.C.M. & **Raijmakers**, M.E.J. (2000). A phase transition between localist and distributed representation. *Behavioral & Brain Sciences*, 23 (4), 486.
- Van der Maas, L.J. van der & **Raijmakers**, M.E.J. (2000). A Phase Transition Model for Mother-Child Interaction: Comment on Olthof et al., 2000. *Infant and Child Development*, 9, 75-83.
- Visser, I., **Raijmakers**, M.E.J. & Molenaar, P.C.M. (2000). Confidence intervals for

- hidden Markov model parameters. *British Journal of Mathematical and Statistical Psychology*, 53, 317-327.
- Molenaar, P.C.M. & **Raijmakers**, M.E.J. (1999). Additional aspects of third source variation for the genetical analysis of human development and behaviour: a commentary on Eaves et al. *Twin Research*, 2, 49-62.
- Raijmakers**, M.E.J. & Molenaar, P.C.M. (1997): Exact ART: A complete implementation of an ART network. *Neural Networks*, 10(4), 649-669.
- Raijmakers**, M.E.J. (1997). Is the learning paradox refuted? *Behavioral and Brain Sciences*, 20(4), p. 573.
- Raijmakers**, M.E.J. (1997): Book review van J.L. Elman, E.A. Bates, M.H. Johnson, A. Karmiloff-Smith, D. Parisi, K. Plunkett. Rethinking innateness: a connectionist perspective on development. *Acta Psychologica*, 97, p. 307-311.
- Raijmakers**, M.E.J. van der Maas, L.J. & Molenaar, P.C.M. (1996): Numerical Bifurcation Analysis of Distance-Dependent On-Center Off-Surround Shunting Neural networks. *Biological Cybernetics*, 75, 495-507.
- Raijmakers**, M.E.J., Van Koten, S., & Molenaar, P.C.M. (1996): On the validity of Simulating Stagewise Development by means of PDP Networks: Application of Catastrophe Analysis and an Experimental Test of Rule-Like Behavior. *Cognitive Science*, 20 (1): 101-136.
- Raijmakers**, M.E.J. & Molenaar, P.C.M. (1995): How to decide whether a neural representation is a cognitive concept? *Behavioral & Brain Sciences*, 18 (4).

Dutch journals/publications

- Raijmakers**, M.E.J. (2012). Denkbeelden over wetenschap en techniek: Aansluiten bij voorkennis. *Tijdschrift voor Het Jonge Kind*, oktober 2012, p. 16 - 19.
- van Schijndel, T.J.P., Franse, R, **Raijmakers**, M.E.J. (2010). Kleuters aan zet. In: de Lange, J. & Post, A. (eds.). *TalentenKracht* magazine, November 2010, p. 6 - 14. Den Haag: TalentenKracht/Platform Beta Techniek.
- Segers, E., **Raijmakers**, M.E.J. (2010). Logisch redeneren tijdens het spelen van spelletjes. In: de Lange, J. & Post, A. (eds.). *TalentenKracht* magazine, November 2010, p. 63 - 64. Den Haag: TalentenKracht/Platform Beta Techniek.
- Raijmakers**, M.E.J., van Schijndel, T.J.P., Franse, R. & vanEs, S. (2010). De ideeënwereld van kinderen. In: de Lange, J. & Post, A. (eds.). *TalentenKracht* magazine, November 2010, p. 110 - 114. Den Haag: TalentenKracht/Platform Beta Techniek.
- Molenaar, P.C.M. & **Raijmakers**, M.E.J. (1994) Reflections on Genetics, Epigenetics and Nonlinear Dynamics. *Tijdschrift voor Ontwikkelingspsychologie*, 21, (3).
- Raijmakers**, M.E.J. & Molenaar, P.C.M. (1994): Simulating Transitions in Cognitive Development by Means of Neural Networks. *Tijdschrift voor Ontwikkelingspsychologie*, 21(3).

Contributions to books/proceedings

- Raijmakers**, M.E.J. (2015). The importance of accounting for heterogeneity of strategy use. In Szymanik, J & Ghosh, S. (eds.).
- Raijmakers**, M.E.J., Kan, K.J., Ploeger, A. & van der Maas, H.L.J. (2014). Nonlinear Epigenetic Variance in Developmental Processes. In Peter C.M. Molenaar, Richard M. Lerner, Karl M. Newell (eds.). *Handbook Of Developmental Systems Theory And Methodology*. NY: Guilford Press.
- H.L.J. van der Maas, K.J. Kan, A.D. Hofman & M.E.J. **Raijmakers** (2014). Dynamics of Development: A Complex Systems Approach. In P.C.M. Molenaar, R.M. Lerner & K.M. Newell (Eds.), *Handbook Of Developmental Systems Theory And Methodology*. NY: Guilford Press.

- van der Maas, H.L.J. & **Raijmakers**, M.E.J. (2014). The Dynamics of Cognitive Development. In Peter C.M. Molenaar, Richard M. Lerner, Karl M. Newell (eds.). *Handbook Of Developmental Systems Theory And Methodology*. NY: Guilford Press.
- M. E. J. **Raijmakers**, S. van Es, and M. Counihan. Children's strategy use in playing strategic games. In R. Verbrugge and J. van Eijck, editors, *Proceedings of the Workshop on Reasoning About Other Minds: Logical and Cognitive Perspectives (RAOM-2011)*, Groningen, The Netherlands, July 11th, 2011, volume 751 of CEUR Workshop Proceedings, p. 137-148. CEUR-WS.org, 2011.
- Visser, I., Schmittmann, V.D. & **Raijmakers**, M.E.J. (2009). Hidden Markov Models for Individual Time Series. To appear in Valsiner, J. & Molenaar, P.C.M. (eds). *Dynamic Process Methodology in the Social and Developmental Sciences*. Springer Verlag New York.
- van Es, S. E., Schijndel, T. J. P. V., Franse, R., & **Raijmakers**, M. E. J. (2009). Children's thoughts on unborn babies: Representational redescription in preconceptions of children on fetal development. *Proceedings of the cognitive science society* (pp. 112-117).
- Raijmakers**, M. E. J., Coffey, E., Stevenson, C., Winkel, J., & Berkeljon, A. (2009). An ART neural network model of discrimination learning. *2009 Conference of the Cognitive Science Society* (pp. 169-174).
- Van der Maas, H. L. J., & **Raijmakers**, M. E. J. (2009). Transitions in cognitive development: prospects and limitations of a neural dynamic approach. In J.P. Spencer, M. Thomas, & J. McClelland (Eds). *Toward a New Grand Theory of Development: Connectionism and Dynamic Systems Theory Re-Considered*. To be published by Oxford University Press.
- Raijmakers**, M.E.J. & Molenaar, P.C.M. (2008). Modelling cognitive developmental transitions in neural networks: bifurcations in an adaptive resonance theory model. In: Mareschal, D., Sirois, S., Westermann, G. & Johnson, M. (eds.). *Neuroconstructivism: Perspectives and Prospects, Volume 2*. Oxford: Oxford University Press. p. 99 – 128.
- Berkeljon, A. & **Raijmakers**, M.E.J. (2007). An ART Neural Network Model of Discrimination Learning. *Proceedings of the IEEE ICDL, Imperial college London, 11 – 13 July 2007* (6 pages).
- Schmittmann, V.D. & **Raijmakers**, M.E.J. (2007). Development of reversal shift learning: An individual differences analysis. *Proceedings of the IEEE ICDL, Imperial college London, 11 – 13 July 2007* (6 pages).
- Visser, Ingmar, Verena Schmittmann, & Maartje E.J. **Raijmakers** (2007). Markov process models for discrimination learning. In, K. van Montfort, H. Oud & A. Satorra (Eds.), *Longitudinal models in the behavioral and related sciences*, European Association of Methodology, chapter 14, p. 337-366.
- van der Maas, H. L. J., Jansen, B. R. J. & **Raijmakers** M.E.J. (2004). Developmental patterns in proportional reasoning. In A. Demetriou & A. Raftopoulos (Eds.), *Cognitive Developmental Change Theories, Models and Measurement*. Cambridge University Press.
- Raijmakers**, M.E.J. & Molenaar, P.C.M. (2001). A biologically plausible maturation of an ART network. In: French, R.M. & Sougné, J.P (eds.). *Connectionist models of learning, development and evolution*. Springer-Verlag: London. (p. 83 - 91)
- Visser, I., **Raijmakers**, M.E.J. & Molenaar, P.C.M. (2001). Hidden Markov model interpretations of neural networks. In: French, R.M. & Sougné, J.P (eds.). *Connectionist models of learning, development and evolution*. Springer-Verlag: London.
- Molenaar, P.C.M., Newell, K., Hartelman, P. & **Raijmakers**, M.E.J. (1999).

- Recursive estimation in nonlinear dynamics: Application to the analysis of stage transition and chaos. In: Savelsbergh, G.J.P., van der Maas, L.J. & van Geert, P.L.C. (eds.). *Nonlinear developmental processes*. Koninklijke Nederlandse Academie van Wetenschappen. Verhandelingen, afd. Letterkunde. Nieuwe reeks, deel 175.
- Raijmakers**, M.E.J. & Molenaar, P.C.M. (1999). A biologically plausible maturation of an ART network. In Mira, J. & Sánchez-Andrés, J.V. (eds.). Foundations and tools for neural modeling. *Lecture Notes in Computer Science*, 1606, 730-736.
- Van der Maas, L.J., **Raijmakers**, M.E.J., Hartelman, P. & Molenaar, P.C.M. (1999). Reaction time as recovery time after perturbation. In: Savelsbergh, G.J.P., van der Maas, L.J. & van Geert, P.L.C. (eds.). *Nonlinear developmental processes*. Koninklijke Nederlandse Academie van Wetenschappen. Verhandelingen, afd. Letterkunde. Nieuwe reeks, deel 175 (p. 159 - 167).
- Molenaar, P.C.M. & **Raijmakers**, M.E.J. (1998) Fitting Nonlinear Dynamical Models Directly to Observed Time Series. In: Newell, K.M. & Molenaar, P.C.M. (eds.). *Applications of nonlinear dynamics to developmental process modeling*. Lawrence Erlbaum Ass., Publishers, Mahwah, NJ.
- Raijmakers** (1996): An experimental test of rule-like network performance. In G.W. Cottrell (ed.) *Proceedings of The Eighteenth Annual Conference of the Cognitive Science Society*. pg. 827. La Jolla, California. Lawrence Erlbaum Associates, Publishers, Mahwah, New Jersey.
- Van der Maas, L.J. & **Raijmakers**, M.E.J. (1995): Uncertainty in developmental Psychology. In: *Chance and Uncertainty*. Eds: W. van den Brink, N. van Dijk, J. Bethlehem et al., Amsterdam University Press, Amsterdam.
- Invited lectures (other lectures at conferences are not listed)**
- Raijmakers**, M.E.J. (2015). Invited lecture at SMART Cognitive Science Workshop, Amsterdam.
- Raijmakers**, M.E.J. (2015). Symposium ter ere van het afscheid van Paul van Geert.
- Raijmakers**, M.E.J. (2015). Invited lecture at The Dutch Neurofederation stimulating developmental cognitive and affective neuroscience, March 26.
- Raijmakers**, M.E.J. (2014). The assessment of Children's Logical Reasoning. Invited lecture at the Artificial Intelligence Colloquium. Groningen, The Netherlands.
- Raijmakers**, M.E.J. (2014). How to test children's logical reasoning abilities? Invited lecture at the Institute of Artificial Intelligence, Faculty of Mathematics and Natural Sciences, University of Groningen
- Raijmakers**, M.E.J. (2012). *Kinderen laten kijken naar biologische preparaten*. (Letting children look at biological preparation). Lecture at the opening of the museum Vrolijk, Amsterdam medical center.
- Raijmakers**, M.E.J. (2012). The development of science learning from a psychological perspective. Invited keynote lecture at the international conference of gender and STEM. Haarlem, The Netherlands.
- Raijmakers**, M.E.J. (2012). Putting science into practice. Invited lecture at the King's college London. September, London.
- Raijmakers**, M.E.J. (2011). Invited keynote lecture at the European Mathematical Psychology Group (EMPG), August 2011 Paris. "The Application of Latent Markov Models in Category Learning".
- Raijmakers**, M.E.J., Kan, K.J. (2011). Invited lecture at the Inductive Developmental Systems Theory Conference, October 2011 Penn State. "Nonlinear Epigenetic Variance: empirical data and neural network development".
- van Schijndel, T.J.P., **Raijmakers**, M.E.J., Franse, R. & Haarhuis, A. (2010). Naïve Theories and Exploratory Play. Exploratorium San Francisco. October 2010.

- Raijmakers, M.E.J. (2010). De ideeënwereld van jonge kinderen. Kenniscentrum voor wetenschap en techniek West (KWT-west). Den Haag.
- Raijmakers, M.E.J. (2010). How can a process approach help to develop talents in children? Discussion at the symposium in the honour of Paul van Geert, Groningen, December 2010.
- Raijmakers, M.E.J. & Visser, I. (2009). Stimulus Similarity Differentially Affects Rule-Based Category Learning. Invited lecture at the Annual meeting of the Society for Mathematical Psychology, Amsterdam, August 2009.
- Raijmakers, M.E.J. & van Schijndel, T.J.P. (2008). Symposium of the Curious Minds. Trippenhuis, Amsterdam.
- Raijmakers, M.E.J. (2008). Adaptive Resonance Theory. Lecture at the 2008 CSCA interdisciplinary summerschool on Cognitive Modelling.
- Raijmakers, M.E.J. (2007). How Babies learn. Symposium on behalf of 100 year of Psychology at the UvA.
- Raijmakers, M.E.J. (2007). Inter-individual differences in free classification. Invited presentation at the School of Psychology, University of Exeter.
- Raijmakers, M.E.J. & VanderMaas, H.L.J. (2005). Cognitive development: The balance scale task. Invited lecture at the ESF exploratory workshop: *Understanding the Dynamics of Knowledge*. Siena.
- Raijmakers, M.E.J. (2005). Rules and development in free classification. Invited lecture at the Expert Meeting *Advances in Developmental Cognitive Neuroscience*, April 2005 Amsterdam.
- Raijmakers, M.E.J. (2004). Belief revisions during the cognitive development of proportional reasoning. *Workshop on belief revision of the ILLC, Amsterdam*.
- Raijmakers, M.E.J. (2004) Two modes of simple discrimination learning during development. Invited lecture at the *CSCA symposium on Development of Cognitive Control: Normative Changes and Psychopathology*. Amsterdam, March 2004.
- Raijmakers, M.E.J. & Schmittmann, V. D. (2004). Two modes of categorization learning during development. Invited poster presentation at the biennial workshop *Attention & Performance XXI*, 2004, Denver.
- Raijmakers, M.E.J. (2003). Transities in cognitieve ontwikkeling. Invited lecture at the *Seminar Cognitive Science, CSCA*, Amsterdam, januari 2003.
- Raijmakers, M.E.J. (2003). Rule-like behavior in neural networks. Invited lecture at the RijksUniversiteit Groningen, September, 2003.
- Raijmakers, M.E.J., van Someren, M. & Kamps, J. (2003). The Origin of Novelty. Invited poster at the NWO symposium of the Cognition programme, June 2003.
- Raijmakers (2001): Detecting rules in free classification. Invited presentation at the Symposium on Development of Cognitive Strategies. Amsterdam, May 2001.
- Raijmakers (2001): Modeling transitions in cognitive development with bifurcations in neural networks. Invited lecture at the NWO-Seminar Computational Neuroscience. NIH, Amsterdam April 2001.
- Raijmakers (2000): Selforganisation in cognitive psychology. Invited lecture at the summerschool of the BCN. Groningen.
- Raijmakers (1999): A Biologically Plausible Maturation of an ART network. Invited lecture at IWANN, Alicante, 1999.
- Raijmakers (1998): Zelf-organisatie in Ontwikkelingspsychologie. Invited lecture at the werkgroep Socio-Cybernetica, Amsterdam.
- Raijmakers (1996): Leert een neuraal netwerk cognitieve concepten? Invited lecture at the vakgroep cognitiewetenschappen (TCW) van de Rijks Universiteit Groningen.