



LEIDEN INSTITUTE FOR BRAIN AND COGNITION

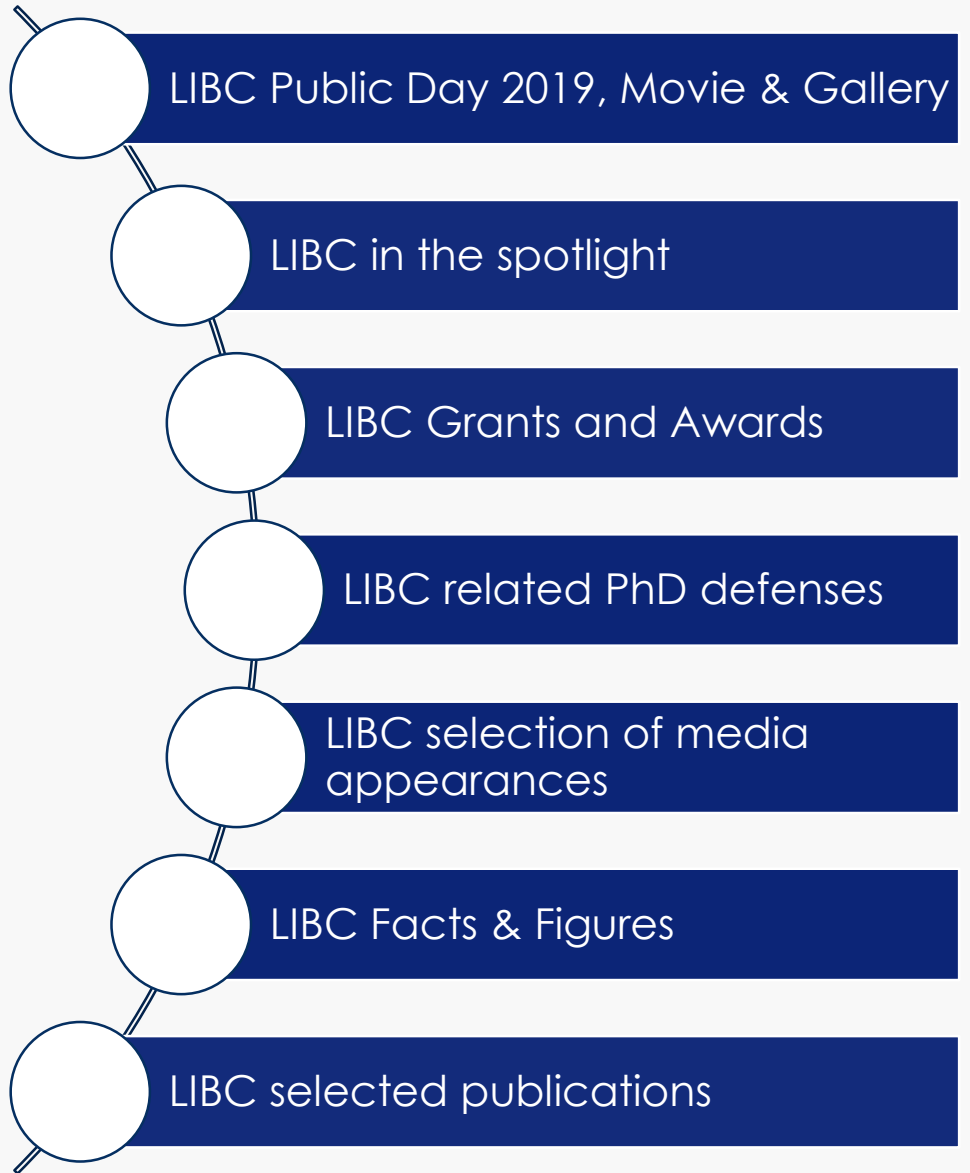
LIBC ANNUAL REPORT 2019



**Universiteit
Leiden**
The Netherlands

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LIBC Publieksdag 2019

Geheugensporen



LIBC LEIDEN INSTITUTE FOR BRAIN AND COGNITION



Universiteit
Leiden

Bij ons leer je de wereld kennen

LIBC PUBLIC DAY 2019
'GEHEUGENSPOREN'

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LIBC PUBLIC DAY 2019

‘GEHEUGENSPOREN’

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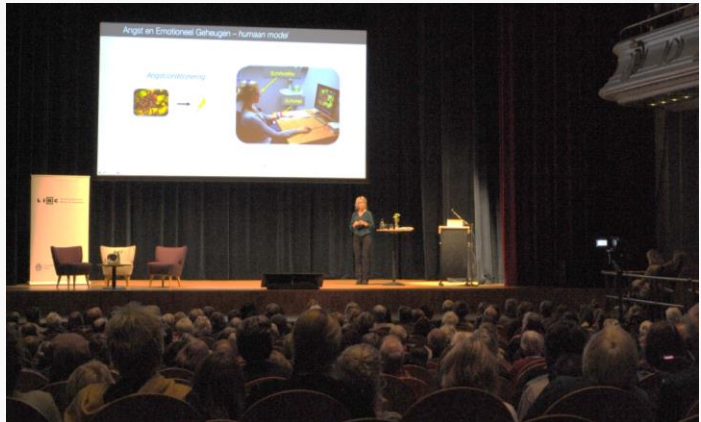
- ▶ More than 700 people attended the LIBC Dutch public symposium 2019 titled ‘Geheugensporen’ on October 11th. Memory is much more than just an archive of memories. Our memory determines who we are and provides us with our identity. Through our memories we also filter our experiences. In this way, memory bridges the past, present and future, and this is crucial to lead a coherent, layered life.
- ▶ At the same time, memory is fallible, creative and demanding: In daily life, memory regularly abandons us, or presents us with distorted memories. This can lead to major problems in our sense of self and identity.

▶ **Speakers**

- Dr. Harm Krugers (University of Amsterdam)
- Prof.dr. Eus van Someren (VU University Amsterdam)
- Dr. Rianne de Kleine (Leiden University)
- Dr. Charlotte van Schie (Leiden University & University of Wollongong, Australië)
- Artproject PolakVanBekum
- Prof.dr. Marko Jelicic (Maastricht University)
- Rogier Feis (Leiden University)
- Prof.dr. Wiesje van der Flier (VU University of Amsterdam)
- Prof.dr. Merel Kindt, (University of Amsterdam)
- Chris Hoeboer (Leiden University)
- Prof.dr. Kees Korrelboom (Tilburg University)

PUBLIC DAY GALLERY

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Professor of Radiology, with a particular emphasis on experimental cerebrovascular imaging Thijs van Osch has delivered his inaugural lecture at Leiden University. He explains: "with the emergence of MRI scanners with a stronger magnetic field, new scan techniques and artificial intelligence (AI), the possibilities for recording the workings of the brain and learning from this data are increasing all the time. These developments mean that we can extract increasing amounts of information from the MRI signal. Technological developments are fantastic, but the final goal is to apply them to patient care."



Prof. dr. Bernet Elzinga and prof. dr. Andrea Evers are co-applicants on a Gravitation grant awarded to PI prof. dr. Anita Jansen (Maastricht University). They are team captains of two of six teams involved in the Gravitation grant programme "New Science of Mental Disorders": the Communication Networks team (Elzinga) and the Mind-Body Interface team.



Prof. dr. Berna Guroglu (right) and prof. dr. Ellen de Bruijn (left) both delivered their inaugural lecture on the same day (June 28th). They specialise in related disciplines: research on the influence of social context on processes in the brain – Guroglu in adolescents and De Bruijn in psychiatric patients.



Prof. dr. Johan Frijns & Dr. ir. Jeroen Briare participate in an NWO CrossOver grant for artificial intelligence at Cochlear Implants. Approximately 2.3 million euros (of the total of 10 million euros) is intended for the sub-project led by the Leiden researchers on the application of innovative artificial intelligence techniques to improve speech understanding in difficult (daily) situations such as noisy surroundings as well as interactions, stress levels, listening effort and tiredness.



On December 10, Anne Cuperus received his doctorate titled 'Virtual experience, real impact: The influence of virtual reality on memory and behavior'. Although a wide variety of virtual reality (VR) healthcare applications are already available, there still are many unexplored opportunities. Anne's thesis increases our understanding of how VR can be applied in healthcare by exploring two novel VR paradigms. Part 1 focusses on the use of VR to simulate exposure to psychological trauma in healthy individuals for research purposes, while part 2 investigates whether VR can be used to affect physical activity by means of a novel kind of perceptual illusion.



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Prof.dr. Andrea Evers was awarded the NWO Stevin Prize. From the NWO website: "According to the Stevin Prize selection committee, her research has had a considerable influence on medical professional practice. It has increased our understanding of the importance of good communication between doctor and patient, in which the doctor clearly responds to the patient's expectations."
Prof.dr . Andrea Evers has also been inaugurated as a new member of the Royal Dutch Academy of Arts and Sciences (KNAW).



SAILS is a new, university wide initiative which aims to enable collaboration on the use of Artificial Intelligence (AI). By building on and expanding the already existing expertise of AI the project intends to advance science and improve the quality of daily life. The LIBC is represented in SAILS. On Friday 24th May 2019 the Kick Off event was organised. The programme consisted off a short pitch by researchers from all the different university disciplines, followed by a match-making.

ERC Grant

Advanced Grant

[Prof.dr. Joke Meijer](#)

'How to preserve a healthy biological clock in modern society'

NWO Grant

Stevin Price

[Prof.dr. Andrea Evers](#)

Gravitation Grant - for the treatment of depression

'Mind – Body interface' & 'Communications Networks'

[Prof.dr. Bernet Elzinga & prof. dr. Andrea Evers](#) (co-applicants)

Crossover call

'INTENSE – Innovative NeuroTEchNology for Society'

[Prof.dr. Johan Frijns](#) (co-applicant)

'ProMise'

[prof.dr. Hanna Swaab](#) and [prof.dr. Wouter Staal](#)(co-applicants)

VICI Grant

'Melody in Speech'

[Prof.dr. Yiya Chen](#)

'The impact of arousal on cognitive function and cortical state'

[Prof.dr. Sander Nieuwenhuis](#)

VENI Grant

'Challenging the elderly brain'

[Dr. Sophie Schmid](#)

ZonMW Grant

- National multi-year programme 'Violence does not have a place in the home: Tackling domestic violence and child abuse'
[Rewind and Fast Forward](#)
[Dr. Marieke Tollenaar](#) (co-applicant)
- National multi-year programme 'Violence does not have a place in the home: Tackling domestic violence and child abuse'
[Effectively intervening in traumatized parents and children after structural domestic violence: An individualized multi-component approach](#)
[Prof.dr. Lenneke Alink](#) (co-applicant)
- Medical Inspirator Prize 2019
[Prof.dr. Andrea Evers and dr. Henriët van Middendorp](#)
'Lyme paralyses lives'

Other Grants and Prizes

- **Utopa Foundation (via Leiden University Fund)**
'The role of trust in economic decisions'
[Prof.dr. Eric van Dijk and others](#)
- **Ammodo Science Award**
[Dr. Lenneke Alink](#)
- **Oswald Külpe Prize**
[Prof.dr. Paul van den Broek](#)
- **Mind & Life Europe Francisco J. Varela Research Award**
'Mindfulness effects on pain beyond placebo effects: Disentangling the role of decentering and positive treatment expectations'.
[Dr. Kaya Peerdeman](#) with co-PI [dr. Mike Keesman](#)
- **ARPH Young Talent Award** (Association for Research in Psychology and Health)
[Dr. Kaya Peerdeman](#)

Appointments, nominations & Awards

- [Prof.dr. Andrea Evers](#) is inaugurated as a new member of the Royal Dutch Academy of Arts and Sciences (KNAW).
- [Prof.dr. Eveline Crone](#) has been elected as the new Vice President of the European Research Council (ERC)

Inaugural lecture(s) given by LIBC members in 2019

- **Prof.dr. Thijs van Osch**, 'De aantrekkingskracht van MRI' May 3, 2019
- **Prof.dr. Ellen de Bruijn**, The smoke alarm in our brains: how do we detect mistakes? June 28, 2019
- **Prof.dr. Berna Guroglu**, The adolescent brain responds differently to different interaction partners. June 28, 2019

LIBC RELATED PHD DEFENSES

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- February 6, S.B.B. de Boer, Age of onset of disruptive behavior of residentially treated adolescents.
Supervisor: Prof.dr. Robert Vermeiren
- February 14, Neeltje Blankenstein, Risky business?
Supervisor: Prof.dr. E.A.M. Crone
- February 19, The Acquisition of English Vowels by Javanese and Sundanese Native Speakers
Supervisors: Prof.dr. N.O.Schiller & Prof.dr. M. Klamer
- February 21, Bryant Jongkees, Neuromodulation of cognitive-behavioral control
Supervisors: Prof.dr. S. Nieuwenhuis & prof.dr. L. Colzato
- March 6, Lisa Schreuders, 'Got a friend in me?'
Supervisors: Prof.dr. B. Güroglu & prof.dr. E.A.M. Crone
- April 9, Janice Sandjojo, Turning disabilities into abilities. Promoting self-management in people with intellectual disabilities
Supervisor: Prof.dr. A.W.M. Evers
- April 24, Dana van Son, EEG Theta/Beta Ratio A marker of executive control and its relation with anxiety-linked attentional bias for threat
Supervisor: Prof.dr. A.J.W. van der Does
- May 15, Andreas Burger, Hitting the Right Nerve: Effects of Transcutaneous Vagus Nerve Stimulation on Symptoms of Anxiety
Supervisors: Prof.dr. A.J.W. van der Does & prof.dr. J.F. Brosschot
- May 16, T. Schomann, Multimodal Visualization of Adult Stem Cells in Inner Ear and Brain Pathology
Supervisor: Prof.dr.ir. J.H.M. Frijns
- May 29, Annemarieke Opstal, Functional brain responses in the maintenance of energy balance
Supervisor: Prof.dr. S.A.R.B Rombouts
- June 6, Susan Williams, Finding Focus
Supervisors: Prof.dr. H. Borgdorff, Dr. R. Schaefer & Dr. M. Schuijjer
- June 12, Ilse van Wijk, Social behavior in young twins
Supervisor: Prof.dr. M.J. Bakermans-Kranenburg
- June 13, M.A.M. de Jong, Novel Speech Processing Strategies in Cochlear Implants, Real Improvements Competing with Learning Effects
Supervisor: Prof.dr.ir. J.H.M. Frijns
- June 26, Sanne van Luenen, Living positive with HIV: EHealth for people with HIV and depressive symptoms
Supervisor: Prof.dr. P. Spinhoven
- September 10, 2019 Lemmy Schakel, Evaluating the effectiveness of innovative psychological intervention tools in optimizing health outcomes: A multimethod approach.
Supervisors: Prof.dr. A.W.M. Evers & prof.dr. T.H.M. Ottenhoff
- September 18, Tijn Schouten, Classification of dementia and early cognitive decline using Magnetic Resonance Imaging
Supervisors: Prof.dr. S.A.R.B. Rombouts & prof.dr. M.J. de Rooij

- September 25, Andrea Spruijt, Curious minds: Stimulating parent-child interaction to foster neurocognitive functioning in four- to eight-year-olds
Supervisor: Prof.dr. J.T. Swaab
- September 26, Lisette van Zonneveld, Early intervention in children at high risk of future criminal behavior
Supervisor: Prof.dr. J.T. Swaab & Prof. dr. S.H.M van Goozen
- October 29, Aleksandrina Skvortsova, Placebo effects and the endocrine system: the role of oxytocin
Supervisor: Prof.dr. A.W.M. Evers
- October 29, A.K. Hauber, Personality disorders and insecure attachment among adolescents
Supervisor: Prof.dr. R. Vermeiren
- 7 November, Losing Control
Supervisor: Prof.dr. A.J.W van der Does
- 13 November, The production and perception of incomplete tonal neutralization
Supervisor: Prof.dr. N.O. Schiller
- 21 November, Marie-José van Hoof, Unresolved-disorganized attachment, psychopathology, and the adolescent brain
Supervisors: Prof.dr. R. Vermeiren & prof.dr. Marinus van IJzendoorn
- December 10, Anne Cuperus, Virtual experience, real impact: The influence of virtual reality on memory and behavior
Supervisors: Prof.dr. A.W.M. Evers & dr. I. van der Ham
- December 10, Mara van der Meulen, The social brain in middle childhood
Supervisor: Prof.dr. E.A.M. Crone
- December 12, Eleanor Dutton, Language diversity in the psycholinguistic study of sentence form variation
Supervisors: Prof.dr. N.O. Schiller & prof.dr. M.G. Kossmann

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Press (online & printed)

- Lara Wierenga – NRC 1 March 2019, [Jongensbrein is niet anders dan een meisjesbrein](#)
- Gert Jan Lelieveld - NRC 24 april 2019, [Waarom sommigen vaccineren erger vinden dan niks doen](#)
- Zsuzsika Sjoerds – De Volkskrant 13 September 2019, [Bij elk bericht op je telefoon een shotje dopamine in het brein.](#)
- Antoinette van Laarhoven - Nu.nl 16 October 2019, [Omgaan met jeuk: 'Het wordt minder als je er geen aandacht aan besteedt'](#)
- Sabine Peters – De Volkskrant 22 November 2019, [Een kijkje in het puberbrein](#)
- Paul van den Broek – NRC 3 December 2019, [En wéér lezen middelbare scholieren slechter](#)

Radio & television

- Andrea Evers - NPO NRC zomeravondgesprek 16 August, ['Ik ben zelf een placebo geworden.'](#)
- Bianca Westhoff & Sandy Overgaauw, NPO radio 1, Januari 2019, 'De grote psychologeshow'
- Rebecca Schaefer, NPO Radio 1 ['Rebecca Schaefer doet hersenonderzoek naar muziek'](#)
- Laura Steenbergen, NPO 22 januari 2019, ['Dokters van morgen'](#)
- Johan Frijns, NPO 29 October 2019, ['De Dokters van morgen'](#)
- Thijs van Osch, NPO Radio 1, 6 December 2019, [Leidse onderzoekers winnen wedstrijd snelste MRI-scanner](#)

Leiden University news

- Dana van Son, 24 April 2019, [Angstig karakter is zichtbaar in de hersenen](#)
- Marian Hickendorff, 4 februari 2019, ['De beste rekenles moet nog worden uitgevonden'](#)
- Carel ten Cate, 11 January 2019, [De grasparkieten van Carel ten Cate in diverse media](#)
- Lara Wierenga, 11 February 2019, [Dat jongens achterlopen in hersenontwikkeling is een mythe](#)
- Judith Schomaker, 25 November 2019, [Kijken, kijken en wél kopen](#)
- Bryant Jongkees, 18 februari 2019, [Optimale hoeveelheid dopamine verbetert het cognitieve vermogen](#)

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Blogs

- Fenna Poletiek, Leiden Psychology blog, 2019, February 18, [An intelligent mind is an experimenting mind](#)
- Iris Koele, Leiden Psychology blog, 2019, May 28, [Music on prescription: Train your body and brain](#)
- Roos Voorwaard, Leiden Psychology blog, 2019, November 11, [Fact or fake? The deceiving brain](#)
- Gert-Jan Lelieveld, Leiden Psychology blog, 2019, 2 December, [Worried about riots? Make strikers less anonymous](#)
- Marie-José van Hoof, Leiden Psychology blog, 2019, 24 December, [The relationships between attachment, psychopathology and emotion processing](#)

Podcast

- In the series 'Science shots' podcasts of the University of Leiden: Marieke Bos, [Chaos in the adolescent brain](#) (in Dutch).

Board

- Prof.dr. Paul van den Broek (Education and child studies, FSS) (until May)
- Prof.dr. Bernet Elzinga (Psychology, FSS)
- Prof.dr. Bernhard Hommel (Psychology, FSS)
- Dr. Dietsje Jolles (from May)
- Prof.dr. Claartje Levelt (Linguistics, FGW & Psychology, FSS)
- Prof.dr. Ir. Thijs van Osch (Radiology, LUMC)
- Prof.dr. Serge Rombouts (Radiology, LUMC & Psychology, FSS), chair
- Dr. Laura Steenbergen
- Prof.dr. Nic van der Wee (Psychiatry, LUMC)

Members

- Senior researchers: 105
- Post-docs: 25
- PhD students: 96

LIBC staff

- Liselot van den Berg (0.4 fte) (from July)
- Dr. Anne Hafkemeijer, MRI research coordinator/consultant (0.6 fte)
- Anne-Fleur Latuhihin, assistant(0.4 fte)
- Mattanja Latuhihin-van der Wielen management assistant (0.4 fte)
- Elio Sjak-Shie, technical support for Social Science researchers (0.2 fte)
- Gijs Vermeij, Laboratory technician (0.2 fte)
- Marissa Wolswijk, Laboratory technician/manager LIBC scanner (0.6 fte)

Equipment: LIBC members currently have access to the following equipment

- 3T and 7T MRI scanners at the LUMC
- MRI dummy scanner at the LUMC
- Electrophysiological lab at the FH
- Neurofeedback lab at the FSS
- Psychophysiological lab at the FSS
- Infant labs (visual and auditory) at the FSS & FH
- Systems for eye-movement measurements at the FH
- More than 20 labs for behavioral research at the FSS
- fNIRS lab at the FSS
- tDCS lab at the FSS
- Phonetics lab at the FH

Training and education

- FMRI Data and Statistics
50 MA students
Coordinator: prof.dr. Serge Rombouts & dr. Anne Hafkemeijer
- LIBC Minor program on 'Brain and Cognition'
52 BA students
Coordinator: dr. Zsuzsika Sjoerds
- Minor program educational sciences 'Kindermishandeling en Verwaarlozing: een levensloopperspectief' (Dutch)
50 BA students
Coordinator: Doreen Arnoldus

Yearly public symposium

Public Symposium 'GEHEUGENSPOREN; HET IK TUSSEN VERLEDEN, HEDEN EN TOEKOMST'. (Dutch) Organizers: prof.dr. Bernet Elzinga, dr. Laura Steenbergen & Mattanja Latuhihin

[Watch a video report of this symposium](#)

Sylvius lectures series

The LIBC organises Sylvius lectures, in which international experts address topics of broad, interdisciplinary interest.

- Fabrizio Benedetti, University of Turin Medical School, Neuroscience Dept, Turin, Italy.
Placebos, words and drugs: sharing common mechanisms of action
- Hugo Critchley, Brighton and Sussex Medical School
Autonomic control, interoception, and experience
- Andrew Whiten, Centre for Social Learning and Cognitive Evolution, School of Psychology and Neuroscience, University of St Andrews
Social learning and culture in child, chimpanzee, and in our evolutionary ancestry

LIBC Human Potential

- Bocanegra, B. R., Poletiek, F. H., Ftitache, B., & Clarks, A. (2019). Intelligent problem- solvers externalize cognitive operations. *Nature Human Behaviour*, 3(2), 136-142
- Braem, S., & Hommel, B. (2019). Executive functions are cognitive gadgets. *Behavioral and Brain Sciences*, 42, 18-19
- Evers, A., Skvortsova, A., Meeuwis, S. H., Necka, E. A., Piedimonte, A., & Peters, M. (2019). Biobehavioral and Neurobiological mechanisms of placebo effects. *Psychosomatic Medicine*, 81(4), A204-A205
- Gross, J., & de Dreu, C. K. W. (2019). The rise and fall of cooperation through reputation and group polarization. *Nature Communications*, 10, Art. 776

LIBC Junior

- vKlapwijk, E. T., van de Kamp, F., van der Meulen, M., Peters, S., & Wierenga, L. M. (2019). Qoala-T: A supervised-learning tool for quality control of FreeSurfer segmented MRI data. *Neuroimage*, 189, 116-129.
- Duijvenvoorde A.C.K. van, Westhoff B., Vos F. de, Wierenga L.M. & Crone E.A. (2019), A three-wave longitudinal study of subcortical-cortical resting-state connectivity in adolescence: Testing age- and puberty-related changes., *Human Brain Mapping* 40(13): 3769-3783.
- Karlsson J., Jolles D., Koornneef A., Van den Broek P. & Van Leijenhorst L. (2019), Individual differences in children's comprehension of temporal relations: Dissociable contributions of working memory capacity and working memory updating, *Journal of Experimental Child Psychology* 185: 1-18.
- Beckerman, M., van Berkel, S. R., Mesman, J., Huffmeijer, R., & Alink, L. R. A. (2019). Are Negative Parental Attributions Predicted by Situational Stress? From a Theoretical Assumption Toward an Experimental Answer. *Child Maltreatment*. 2019, Oct 8;

LIBC Language

- Chen, J. N., Zou, Y. Q., Sun, Y. H., & ten Cate, C. (2019). Problem-solving males become more attractive to female budgerigars. *Science*, 363(6423), 166-167
- Pablos Robles L., Doetjes J.S., Ruijgrok B.J. & Cheng L.L.S. (2019), Backward licensing of Negative Polarity Items in Dutch: an ERP investigation, *JOURNAL OF NEUROLINGUISTICS* 51(August 2019): 96-110.
- Van de Velde, D. J., Schiller, N. O., Levelt, C. C., van Heuven, V. J., Beers, M., Briaire, J. J.& Frijns, J. H. M. (2019). Prosody perception and production by children with cochlear implants. *Journal of Child Language*, 46(1), 111-141
- Voeten, C. C., & Levelt, C. C. (2019). ERP Responses to Regional Accent Reflect Two Distinct Processes of Perceptual Compensation. *Frontiers in Neuroscience*, 13

LIBC Stress & Emotion

- Dalm, S., Karszen, A. M., Meijer, O. C., Belanoff, J. K., & de Kloet, E. R. (2019). Resetting the Stress System with a Mifepristone Challenge. *Cellular and Molecular Neurobiology*, 39(4), 503-522.
- Pittner, K., van Ijzendoorn, M. H., Alink, L. R. A., Buisman, R. S. M., Compier-de Block, L. H. C. G. C., van den Berg, L. J. M., Elzinga, B. M., Lindenberg, J., Tollenaar, M. S., Diego, V. P., & Bakermans-Kranenburg, M.J. (2019). The genetic and environmental etiology of child maltreatment in a parent-based extended family design. *Development and Psychopathology*, 31(1), 157–172.
<http://doi.org/10.1017/S0954579418001608>
- Angelidis, A., Kyrgiou, A., van der Wee, N., van der Does, W., & Putman, P. (2019). Effects of hydrocortisone on cognitive performance and threat-interference under acute stress in highly anxious females. *European Neuropsychopharmacology*, 29, S698-S699
- Tona, K. D., van Osch, M. J. P., Nieuwenhuis, S., & Keuken, M. C. (2019). Quantifying the contrast of the human locus coeruleus in vivo at 7 Tesla MRI. *PLoS One*, 14(2).
- Van Schie, C. C., Chiu, C. D., Rombouts, S. A. R. B., Heiser, W. J., & Elzinga, B. M. (2019). When I relive a positive me: Vivid autobiographical memories facilitate autonoetic brain activation and enhance mood. *Human Brain Mapping*, 40(16), 4859-4871.
- Bas-Hoogendam, J. M., van Steenbergen, H., van der Wee, N. J. A., & Westenberg, P. M. (2019). Neuroimaging results from the Leiden Family Lab study on Social Anxiety Disorder: a multiplex, multigenerational endophenotype study. *Journal of Neural Transmission*, 126(11), 1523.
- Burger, A. M., van der Does, W., Thayer, J. F., Brosschot, J. F., & Verkuil, B. (2019). Transcutaneous vagus nerve stimulation reduces spontaneous but not induced negative thought intrusions in high worriers. *Biological Psychology*, 142, 80-89.

LIBC Social

- Quesque, F., Behrens, F., & Kret, M. E. (2019). Pupils say more than a thousand words: Pupil size reflects how observed actions are interpreted. *Cognition*, 190, 93-98
- Gross, J., & de Dreu, C. K. W. (2019). The rise and fall of cooperation through reputation and group polarization. *Nature Communications*, 10
- Zadelaar, J. N., Weeda, W. D., Waldorp, L. J., van Duijvenvoorde, A. C. K., Blankenstein, N. E., & Huizenga, H. M. (2019). Are individual differences quantitative or qualitative. An integrated behavioral and fMRI MIMIC approach. *Neuroimage*, 202.
- Molenmaker, W. E., de Kwaadsteniet, E. W., & van Dijk, E. (2019). The effect of decision timing on the willingness to costly reward cooperation and punish noncooperation: Sanctioning the past, the present, or the future. *Journal of Behavioral Decision Making*, 32(3), 241-254