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News

CBCD celebrates 21 years



Image: some of the 120 participants at the anniversary event. Photo by Harish Patel.

In November the [Centre for Brain and Cognitive Development \(CBCD\)](#) marked its first 21 years with two day gathering of presentations, posters and celebrations. The centre was established in October 1998 when **Mark Johnson**, **Gergely Csibra** and **Leslie Tucker** moved from the former Medical Research Council Cognitive Development Unit. They were joined that year by **Denis Mareschal** as a founder member of the centre.

The centre grew steadily and in 2006 moved to the purpose-built [Henry Wellcome Building](#) which was complemented by the opening of the [BUCNI MRI](#) imaging facility. Since 1998, over 15,000 babies have passed through the doors of CBCD, which has been at the forefront of developing techniques to understand the development of infants.

This year CBCD will expand its capacity with the opening of the new [ToddlerLab](#), a state-of-the-art facility to enable research to understand toddlers with emerging developmental disorders.

The event was organised by the founding members of CBCD, Leslie Tucker, Mark Johnson, Denis Mareschal and Gergely Csibra and supported by ISSF funding. Many current and former members of staff delivered presentations. To find out more about the event, please see the event [brochure](#).

Department welcomes new members

Welcome to new PhD student, **Aislinn Bowler**! Aislinn joined the [GEL Lab](#) in September 2019, funded by a prestigious MRC joint industry-academia iCASE studentship. Her studentship will involve collaborations between Birkbeck, UCL and Mindwave Ventures. She is supervised by **Professor Angelica Ronald** and Professor Pasco Fearon (UCL).

And, welcome to **Dr. Brandi Lee Drisdelle** who has started a post-doctoral fellowship award funded by the Natural Sciences and Engineering Research Council of Canada (NSERC), which runs from January 2020 to January 2022. They will be working with **Professor Martin Eimer** in Brain and Behaviour Lab.

Top Media Mentions

Our staff have been attracting high profile media attention

Our late colleague **Professor Annette Karmiloff-Smith** was involved in developing a 12-part documentary 'Babies' which will be launched globally on Netflix on Friday 21 February 2020. The series was developed by the production company Nutopia. <http://www.nutopia.com/>

Dr. Tim Smith was interviewed by Mosaic Science (supported by Wellcome) in an article about the weird and mesmerising world of children's television.

<https://mosaicscience.com/story/childrens-tv-education-sesame-street-teletubbies-kids-videos/>



Image: Count von Count, Sesame Street. CC BY-NC-ND 2.0. via <https://www.flickr.com/photos/worldbank/>

Professor Denis Mareschal was referred to in an article in The Guardian about childhood deprivation and brain development.

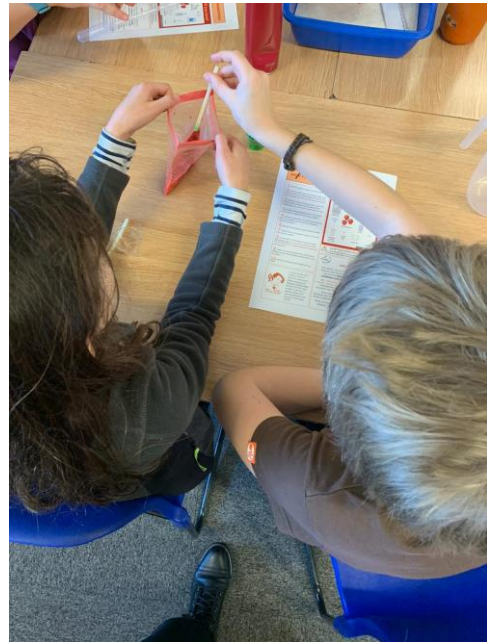
<https://www.theguardian.com/science/2020/jan/06/severe-childhood-deprivation-reduces-brain-size-study-finds>

Professor Mike Oaksford was quoted in the article "*Cognitive Prosthesis*" Enhances Productivity, by Diana Kwon, which appeared in Scientific American, 1st November, 2019.

<https://www.scientificamerican.com/article/cognitive-prosthesis-enhances-productivity/>

Public Engagement and Talks

The Genes Environment Lifespan (GEL) Lab celebrates Rosalind Franklin's contribution to genetics



Images: members of the GEL Lab outside Rhodes Avenue Primary School and some of the primary school children exploring the genetic basis of taste. Photos thanks to the GEL Lab team.

The GEL Lab is leading a series of events this year to mark 100 years since the birth of Rosalind Franklin, a pioneer in the field of genetics and an alumnus of Birkbeck.

The programme of events commenced in January with the first in their series of genetics workshops aimed at year 6 primary school children. The team visited Rhodes Avenue Primary School in North London to give a short lecture and worked with the children to extract DNA and explore the genetic basis of taste. It was hugely enjoyable experience for the GEL Lab, and early feedback from the students is encouraging, with many of the children citing it as one of the highlights of their science learning for their entire primary career!

The GEL Lab will be continuing their activities throughout the year, with public lectures, blogs and 'genetics 101' vlogs. In March they will be hosting an event about Rosalind Franklin as part of the International Women's Day celebrations. A full schedule of their events can be found here:

<http://www.gel.bbk.ac.uk/home/202-anniversary-events/>

Other public presentations, invited talks and event attendance

Dr. Gillian Forrester was invited to deliver a keynote lecture (as a former fellow) at [The Daphne Jackson Trust](#) 2019 Conference in October at the Institute of Physics. The Daphne Jackson Trust supports returners to STEM after a break for family responsibilities. The conference was hosted by the Institute of Physics and sponsored by the Institute of Chemistry. Speakers included Professor Dame Julia Higgins (immediate past president of the IOP), Professor Dame Carol Robinson, (President, Royal Society of Chemistry), Professor

Dame Julia Goodfellow (President, Royal Society of Biology). <https://daphnejackson.org/news-and-events/research-conference/2019-research-conference/>

In October, **Gillian** was also an invited speaker to the Psychology seminar series at Queen Mary University of London where she spoke about Essential Skills for Psychologists. In December she was invited to speak to staff and students at The Barts Cancer Institute about her work on great apes and human cognition.

Professor Ulrike Hahn gave the Hilgard Scholar lecture at Stanford University, USA, in October.

Dr. Tim Smith and his research group attended the Infant & Toddler Forum CIC launch event in London on 10 December 2019.

In October **Professor Martin Eimer** was invited to speak about *The Control of Attention in Visual Research* to the Life Sciences Masters Programme at the University of Utrecht, The Netherlands.

Dr. Iroise Dumontheil was interviewed by Learnus, which focuses on communicating research to support the evolution of teaching. The interview focuses on Iroise's research and the field of educational neuroscience more broadly. https://www.youtube.com/watch?v=R4VKm_wOuS8

Dr. Emma Meaburn gave an invited talk titled *Polygenic scores for education: fact or fiction* to visiting academics from the Department of Psychology & Neuroscience, DePauw University.

Dr. Bosiljka Milosavljevic presented a poster on maternal-infant interactions, maternal mental health and infant development in rural Gambia at the Budapest CEU Conference on Cognitive Development. (BCCCD).

Dr. Alex Shepherd was invited to Barcelona following the opening of the new migraine centre at the Vall d'Hebron Hospital and Institute of Research (VHIR). She was their first international speaker and her talk was entitled: *Visual processing differences in migraine, between attacks, and their links with environmental visual triggers. From retina to cortex.*

Alex also attended to the Prolonged Disorders of Consciousness conference at the Wellington hospital in October and the Applied Vision Association (AVA) Christmas meeting at Cardiff University in December.

In October **Dr. Clare Press** gave a presentation to the Cambridge CBSU Chaucer Club on *The perceptual prediction paradox*. And, in January she presented her talk on *The perceptual prediction paradox. Symposium on cause and effect in action* to the Experimental Psychological Society meeting

GEL Lab Director **Professor Angelica Ronald** gave a talk at the Social Genetic and Developmental Psychiatry Centre at King's College London entitled: *Pathways to mental illness in adults: new research on psychotic-like experiences during adolescence.*

In October **Dr. Iroise Dumontheil** delivered a seminar to the Centre for Educational Neuroscience seminar, University of London entitled: *Training children to stop and think in maths and science (UnLocke) - does it work?*

Iroise also delivered a seminar in December for the Centre for Brain and Cognitive Development seminar on: *Contextual influences on cognitive control in adolescence.*

In January **Dr. Belinda Brooks-Gordon** and her students delivered a research-based exhibition and presentations on sex-work and harm reduction for the national police liaison officers' training day. Belinda Brooks-Gordon led the exhibition entitled *Evidence-based Narratives on Sex Work* to enable Birkbeck's educational purpose to contribute to broader public service.



Image: Left to Right: Dan Vajzovic, ACC Cambridgeshire Constabulary; Dr. Belinda Brooks-Gordon and Nick Skipworth, Chief Inspector Cambridgeshire Constabulary

Forthcoming events

Dr. Iroise Dumontheil, is delivering the first lecture of Birkbeck's event series celebrating 100 years of Birkbeck joining the University of London. Her lecture, on *Using an educational neuroscience approach to improve maths and science achievement in primary school*, will take place from 6pm to 7pm on Tuesday 11 February.

Awards and Recognition

Congratulations to Professor Emily Jones!

We wish Emily Jones many congratulations on her recent promotion to professorship. **Professor Emily Jones** is based in the Centre for Brain and Cognitive Development. Her research centres on the cognitive and neural mechanism that drive variability in developmental trajectories in young children. She has a particular interest in the development of basic skills in children with Autism Spectrum Disorder and is involved in a number of national and international collaborations in this area.

Professor Jones has coordinated a cross-European study of infants at high familial risk for autism as part of the [EU-AIMS](#) project and co-chaired an EU-funded COST Working Group that aims to build capacity for studying high-risk infants in Europe. She has recently been awarded a significant grant from the MRC for a new project on early-stage processing, modifiers and outcomes. Find out more about her work here: <http://cbcd.bbk.ac.uk/people/scientificstaff/emily-jones>



Image: Professor Emily Jones at work in CBCD, pictured here with her daughter.

Grants

Congratulations to all our staff receiving research grants

NAME	FUNDER	TITLE	AMOUNT £
Emily Jones	MRC	Human neurocognitive development: Early-stage processing, modifiers, and outcomes.	1,226,390

Conference Activity

Members of staff from across the department have been representing Psychological Sciences at conferences across the world

In December **Dr. Clare Press** delivered a presentation to the Nvp Dutch Society for Brain and Cognition meeting, Egmond aan Zee. Symposium on *Predictive cognition – the role of prediction in perception, attention and action*.

Professor Angelica Ronald attended the World Congress of Psychiatric Genetics in Los Angeles in October 2019. She gave an invited talk entitled: *Genetic Overlap Between Psychotic Experiences Across Age and With Psychiatric Disorders*.

Doctoral Activity

Theses Awarded

Congratulations to all those successfully defending their theses

Candidate: **Ana Maria Portugal**

Title: *The association of early touchscreen media use with the development of visual attention and executive function*

Supervisors: Dr. Tim Smith, Dr. Rachael Bedford

Examiners: Dr. Iroise Dumontheil (Birkbeck) and Professor Gaia Scerif (University of Oxford)

Candidate: **Anna Peng**

Title: *A process-driven approach to the understanding of developmental differences in cognitive flexibility in young children and adults.*

Supervisors: Dr. Natasha Kirkham, Professor Denis Mareschal

Examiners: Professor Gaia Scerif (University of Oxford) and Dr. Sam Gilbert (UCL)

Candidate: **Jessica Massonnié**

Title: *Understanding the impact of classroom noise on children's learning and well-being, and its modulation by executive functions*

Supervisors: Dr. Natasha Kirkham, Professor Denis Mareschal

Examiners: Professor Michael Thomas (BBK) and Dr. Emma Blakey (University of Sheffield).

Candidate: **Wikus Barkhuizen**

Title: *The cooccurrence, shared genetic aetiology and causal associations between tobacco use and psychotic experiences*

Supervisor: Professor Angelica Ronald

Examiners: Professor Sir Robin Murray (Kings College London) and Dr. Andrew McQuillin (UCL)

Theses Examined

Staff from around the department are frequently invited to examine doctoral theses at institutions across the country

Professor Martin Eimer was a member of the PhD examination committee for the examination of Katya Olmos Solis' thesis entitled: *Studying task relevance through the eye and brain activity* at the Free University Amsterdam; 12 November 2019

Dr. Tim Smith was the external examiner for Alexander Vasilyev's PhD thesis at Queen Mary University entitled: *Eye-movements during execution of visual tasks* on 14 January 2020.

Professor Mike Oaksford acted as the external examiner for Patricia Mirabile's PhD, Sorbonne University, Paris. Her thesis title was: *How we reason about explanations: Philosophy and psychology of explanatory reasoning.*

Publications

Journal Articles

Berggren, N., & Eimer, M. (2020). Attentional access to multiple target objects in visual search. *Journal of Cognitive Neuroscience*, 32, 283-300. <https://www.ncbi.nlm.nih.gov/pubmed/31560272>

Broadbent, H., Osborne, T., Kirkham, N., & Mareschal, D. (In press). Touch and look: The role of visual-haptic cues for categorical learning in primary school children. *Infant and Child Development*.

Costa, P. A., **Tasker, F.**, Carneiro, F. A., Pereira, H., & Leal, I. (2020). Reactions from family of origin to the disclosure of lesbian motherhood via donor insemination. *Journal of Lesbian Studies*, 24, 1-11, [doi: 10.1080/10894160.2019.1614378](https://doi.org/10.1080/10894160.2019.1614378)

de Mooij, S.M.M., Kirkham N.Z., Raijmakers, M., van der Maas, H.L.J., & **Dumontheil I.** (2020) Should online maths learning environments be tailored to individuals' cognitive profiles? *Journal of Experimental Child Psychology*, 191, 104730.

Doro, M., Bellini, F., Brigadoi, S., **Eimer, M.** & Dell'Acqua, R. (In press). A bilateral N2pc (N2pcb) component is elicited by search targets on the vertical midline. *Psychophysiology*.

Evans, R.E.C., Taylor, S.A., Kalashtry, J., Sakai, N.S., **Miles A.** (2019) Patient deprivation and perceived scan burden negatively impact on the quality of WB-MRI. *Clinical Radiology*. <https://doi.org/10.1016/j.crad.2019.10.019>

Figueroa, V. and **Tasker, F.** (2019) "No, We're Not Culturally Ready for That Yet": Chilean heterosexual women's discourses on Lesbian and Gay parenting. " No, Todavía No Estamos Culturalmente Preparados para Eso": Discursos de Mujeres Heterosexuales Chilenas sobre la Parentalidad Lésbica y Gay. *Revista Psykhe* 28 (2), 1-15. [doi: 10.7764/psykhe.28.2.1505](https://doi.org/10.7764/psykhe.28.2.1505)

Gato, J., Leal, D. & **Tasker, F.** (2019). Parenting Desires, Parenting Intentions, and Anticipation of Stigma Upon Parenthood Among Lesbian, Bisexual and Heterosexual Women in Portugal. *Journal of Lesbian Studies*, 23, 451-463, [doi: 10.1080/10894160.2019.1621733](https://doi.org/10.1080/10894160.2019.1621733)

Grimley, C.E., Kato, P.M., **Grunfeld, E.A.** (2020) Health and health belief factors associated with screening and help-seeking behaviours for breast cancer: A systematic review and meta-analysis of the European evidence. *British Journal of Health Psychology*;25(1):107-128 <https://www.ncbi.nlm.nih.gov/pubmed/31876992>

Gutierrez, M., & Berggren, N. (In press). Anticipation of aversive threat potentiates task-irrelevant attentional capture. *Cognition and Emotion*, 1-8

Havers, L., Taylor, M. J., & **Ronald, A.** (2019). Genetic and environmental influences on the stability of psychotic experiences and negative symptoms in adolescence. *Journal of Child Psychology and Psychiatry*, 60, 784-792. <https://www.ncbi.nlm.nih.gov/pubmed/30957239>

Haensel, J., Danvers, M., Ishikawa, M., Itakura, S., **Tucciarelli, R., Smith, T.J.** and **Senju, A.** (In Press) Culture modulates face scanning during dyadic social interactions. *Scientific Reports* , ISSN 2045-2322.

Hosang, G., Lichtenstein, P., **Ronald, A.**, Lundström, S. & Taylor, M. J. (In press) An investigation of the shared genetic and environmental architecture of ADHD and hypomanic symptoms in youths. A longitudinal twin study. *JAMA Psychiatry*.

Katus, T., & **Eimer, M.** (In press). Retrospective selection in visual and tactile working memory is mediated by shared control mechanisms. *Journal of Cognitive Neuroscience*.

Kirkham, N., Rea, M., **Osborne, T.**, White, H., & **Mareschal, D.** (2019). Do cues from multiple modalities support quicker learning in primary school children? *Developmental Psychology*, 55, 2048-2059.
<https://psycnet.apa.org/record/2019-46863-001>

Madrid-Valero, J.J., **Ronald, A.**, Shakeshaft, N., Schofield, K., Malanchini, M. & Gregory, A.M. (In press). Sleep quality, insomnia and internalising difficulties in adolescents: insights from a twin study. *Sleep*.
<https://www.ncbi.nlm.nih.gov/pubmed/31553447>

Magis-Weinberg, L., Custers, R., & **Dumontheil, I.** (In Press) Rewards enhance proactive and reactive control in adolescence and adulthood. *Social Cognitive and Affective Neuroscience*.

McCants, C., **Katus, T.**, & **Eimer, M.** (2020). Task goals modulate the activation of part-based versus object-based representations in visual working memory. *Cognitive Neuroscience*, 11, 92-100. 223.
<https://www.ncbi.nlm.nih.gov/pubmed/31311410>

McConnachie, A. L., Ayeda, N., Jadva, V., Lamb, M., **Tasker, F.** & Golombok, S. (2020). Father-Child Attachment in Adoptive Gay Father Families. *Attachment & Human Development*, 22:1, 110-123,
[doi: 10.1080/14616734.2019.1589067](https://doi.org/10.1080/14616734.2019.1589067)

Morris, S., Farran, E. K., & **Dumontheil, I.** (2019). Field independence associates with mathematics and science performance in 5- to 10-year-olds after accounting for domain-general factors. *Mind, Brain, and Education*, 13(4), 268–278.

Oaksford, M., & Chater, N. (2020). New paradigms in the psychology of reasoning. *Annual Review of Psychology*, 71, 305-330. doi.org/10.1146/annurev-psych-010419-051132

Press, C., Kok, P., & **Yon, D.** (In press) Learning to perceive and perceiving to learn. *Trends in Cognitive Sciences*.

Press, C., Kok, P., & **Yon, D.** (2020). The perceptual prediction paradox. *Trends in Cognitive Sciences*.

Saffari, A., Arno, M., **Ronald, A.**, Wong, C., Schalkwyk, L., Mill, J., Dudbridge, F., & **Meaburn, E. L.** (In press). RNA sequencing of identical twins discordant for autism reveals blood-based signatures implicating immune and transcriptional dysregulation. *Molecular Autism*.
<https://molecularautism.biomedcentral.com/articles/10.1186/s13229-019-0285-1>

Werchan, D. M., Lynn, A., **Kirkham, N. Z.**, & Amsco, D. (2019). The emergence of object-based visual attention in infancy: A role for family socioeconomic status and competing visual features. *Infancy*.
[doi: 10.1111/infa.12309](https://doi.org/10.1111/infa.12309)

Taylor, S.A., Mallett, S., **Miles, A.**, Morris, S., Quinn, L., Clarke, C.S., Beare, S., Bridgewater, J., Goh, V., Janes, S., Koh, D.M., Morton, A., Navani, N., Oliver, A., Padhani, A., Punwani, S., Rockall, A., Halligan, S. (2019) Whole-body MRI compared with standard pathways for staging metastatic disease in lung and colorectal cancer: the Streamline diagnostic accuracy studies. *Health Technology Assessment*. Dec;23(66):1-270. [doi: 10.3310/hta23660](https://doi.org/10.3310/hta23660)

Taylor, S. A., Mallett, S., Bhatnagar, G., Morris, S., Quinn, L., Tomini, F., **Miles, A.**, Baldwin-Cleland, R., Bloom, S., Gupta, A., Hamlin, P. J., Hart, A. L., Higginson, A., Jacobs, I., McCartney, S., Murray, C. D., Plumb, A.A., Pollok, R. C., Rodriguez-Justo, M., Shabir, Z., Slater, A., Tolan, D., Travis, S., Windsor, A., Wylie, P., Zealley, I. and Halligan, S. (2019) Magnetic resonance enterography compared with ultrasonography in newly diagnosed and relapsing Crohn's disease patients: the METRIC diagnostic accuracy study. *Health Technology Assessment*;23(42) <https://doi.org/10.3310/hta23420>

Wilkinson H.R., Smid, C., Morris, S., Farran, E.K., **Dumontheil, I.**, Mayer, S., Tolmie, A., Bell, D., Porayska-Pomsta, K., Holmes, W., **Mareschal, D.**, **Thomas, M.S.C.** and the UnLocke Team**. (In press) Domain-specific inhibitory control training to improve children's learning of counterintuitive concepts in mathematics and science. *Journal of Cognitive Enhancement* (in press) **The UnLocke team consists of the authors of this paper as well as Annie Brookman-Byrne, Roshni Modhvia, and Dilini Sumanapala. <https://link.springer.com/article/10.1007/s41465-019-00161-4>

Book chapters

Chater, N., & **Oaksford, M.** (2020). Bayesian rationality in the psychology of reasoning. In W. Spohn & M. Knauff (Eds.), *Handbook of Rationality*. Cambridge, Mass.: MIT Press.

Grunfeld, E.A. Return to Work. (In press) In M. Gellman (ed.), *Encyclopedia of Behavioural Medicine*. Springer.

Oaksford, M., & Chater, N. (2020). Integrating Causal Bayes Nets and inferentialism in conditional inference. In S. Elqayam, I. Douven, J. St. B. T. Evans, & N. Cruz (Eds.). *Logic and uncertainty in the human mind (Festschrift for David Over)*. London: Routledge.