Developmental Cognitive Neuroscience 2022/2023

Thursdays, 17:45 - 19:15

Classes 3, 4, 7 & 8 will be online

Instructors:
Barbara Pomiechowska, PhD, Cognitive Development Center, Central European University
Magdalena Szmytke, MSc, Neurocognitive Development Lab, Faculty of Psychology, University of Warsaw
Zuzanna Laudańska, MSc, Neurocognitive Development Lab, Institute of Psychology, Polish Academy of Sciences

Grading System:
40 points - test
10 points - preregistration document

+ additional points for correct responses during weekly short tests

Attendance:
- 2 unexcused absences are allowed
- please contact the instructors in case you need to miss more classes (students may submit short written work to make up for up to 2 additional missed classes)

Course textbook:

Johnson M. & de Haan M. (2015). Developmental Cognitive Neuroscience, 4th Ed. Oxford: Wiley.

Classes:

1) **06.10.2022** Developmental change. Biological constraints on brain development. Interactive specialisation. (Z.Laudańska)

DCN Chapters 1-4

2) **13.10.2022** Acting on objects and moving (Z. Laudańska)

Adolph, K. E., & Hoch, J. E. (2019). Motor Development: Embodied, Embedded, Enculturated, and Enabling. Annual Review of Psychology, 70(1), 141–164. https://doi.org/10.1146/annurev-psych-010418-102836

3) **20.10.2022** Orienting & attention. (B. Pomiechowska)

Wass, S., Porayska-Pomsta, K., & Johnson, M. H. (2011). Training attentional control in infancy. Current biology, 21(18), 1543-1547. https://doi.org/10.1016/j.cub.2011.08.004

4) **27.10.2022** Perceiving and acting in a world of objects. (B. Pomiechowska)

Kaufman, J., Csibra, G., & Johnson, M. H. (2005). Oscillatory activity in the infant brain reflects object maintenance. Proceedings of the National Academy of Sciences of the United States of America, 102(42), 15271–4. http://doi.org/10.1073/pnas.0507626102

5) **03.11.2022** Vision. (M.Szmytke)

DCN Chapter 5

Babylab visit

6) **10.11.2022** Multisensory processing (M. Szmytke)

Murray, M. M., Lewkowicz, D. J., Amedi, A., & Wallace, M. T. (2016). Multisensory Processes: A Balancing Act across the Lifespan. Trends in Neurosciences, (June 2016). http://doi.org/10.1016/j.tins.2016.05.003

7) **17.11.2022** Emerging language. (B. Pomiechowska)

Kabdebon, C., & Dehaene-Lambertz, G. (2019). Symbolic labeling in 5-month-old human infants. Proceedings of the National Academy of Sciences, 116(12), 5805- 5810. https://doi.org/10.1073/pnas.1809144116

8) **24.11.2022** Learning & Memory. (B. Pomiechowska)

Pomiechowska, B., & Gliga, T. (2021). Nonverbal category knowledge limits the amount of information encoded in object representations: EEG evidence from 12- month-old infants. Royal Society Open Science, 8(3), 200782. https://doi.org/10.1098/rsos.200782

9) **01.12.2022** Social brain I. Face processing. (M. Szmytke)

Johnson, M. H., Senju, A., & Tomalski, P. (2015). The two-process theory of face processing: Modifications based on two decades of data from infants and adults. Neuroscience & Biobehavioral Reviews, 50, 169–179. http://doi.org/10.1016/j.neubiorev.2014.10.009

10) **08.12.2022** Social brain II. (M.Szmytke)

Blakemore, S.-J., & Mills, K. L. (2014). Is adolescence a sensitive period for sociocultural processing? Annual Review of Psychology, 65, 187–207. http://doi.org/10.1146/annurev-psych-010213-115202

11) **15.12.2022** Atypical neurodevelopment (Z.Laudańska)

D'Souza, H., & Karmiloff-Smith, A. (2017). Neurodevelopmental disorders. Wiley Interdisciplinary Reviews: Cognitive Science, 8(1–2), 1–10. https://doi.org/10.1002/wcs.1398

12) **22.12.2022** Prefrontal cortex, planning, working memory (Z.Laudańska)

DCN Chapter 10

13) **12.01.2023** Early adverse environment. (Z.Laudańska)

Tomalski, P., & Johnson, M. H. (2010). The effects of early adversity on the adult and developing brain. Current Opinion in Psychiatry, 23(3), 233–8. http://doi.org/10.1097/YCO.0b013e3283387a8c

Farah M.J. (2018). Socio-economic status and the brain: prospects for neuroscience-informed policy. Nature Reviews Neuroscience, 19(7), 428-438. Doi: 10.1038/s41583-018-0023-2.

14) **19.01.2023** Summary: neuroconstructivism (Z.Laudańska)

15) **26.01.2023** Final test.