



## Editorial

## Editorial: Special issue in honor of Professor Lars Bäckman

To honor Lars Bäckman at the time of his (part-time) retirement, we organized a symposium in August 2022 at Karolinska Institutet, Stockholm, Sweden, entitled *The Aging Brain: Memory, Plasticity and Dopamine*. The speakers as well as the audience encompassed many of Lars' colleagues, including several past students and postdocs. The symposium was funded by Karolinska Institutet.

Session I, on Memory and aging, featured presentations by Roger Dixon, Brent Small, and Lars Nyberg. Session II, on Plasticity and aging, included presentations by Ulman Lindenberger, Naftali Raz, and Susanne Jaeggi. Session III, on Dopamine and aging, had presentations by Emrah Düzel, Nina Karalija, and Alireza Salami. The meeting offered ample opportunities for discussion and ended by closing remarks from Lars Bäckman himself.

The present special issue is primarily based on the symposium. We believe that the selection of papers offers a nice illustration of the wide scope of Lars Bäckman's scientific contributions. Topics include basic experimental work on memory functions, how memory functions change in aging, the modifiability of memory abilities by interventions, individual differences, the influence of moderator variables such as education, and the search for brain changes that explain age-related cognitive changes. Dopaminergic neurotransmission is arguably at the heart of Lars Bäckman's rich scientific repertoire, as captured by his "correlative triad" among aging, dopamine, and cognition [1].

The step from dopamine to reward is short, and we guest editors have encountered many rewarding experiences with Lars. The collaborations and exchanges have been stimulating, challenging, and most certainly never dull. We expect many exciting studies are still to come, not least now when the third and last wave of the longitudinal Cobra project [2] has been finalized – a project with Lars Bäckman as the driving force and intellectual leader.

## References

- [1] Bäckman L, Nyberg L, Lindenberger U, Li SC, Farde L. The correlative triad among aging, dopamine, and cognition: current status and future prospects. *Neurosci Biobehav Rev* 2006;30(6):791–807.
- [2] Nevalainen N, Riklund K, Andersson M, Axelsson J, Ögren M, Lövdén M, et al. COBRA: A prospective multimodal imaging study of dopamine, brain structure and function, and cognition. *Brain Res* 2015;1612:83–103.

**Lars Bäckman** defended his dissertation on memory function in aging at Umeå University, Sweden, in 1984. After a one-year post doc at the Max Planck Institute for Human Development in Germany, he returned to Umeå for an assistant professorship that was followed by a position as a researcher at Karolinska Institutet, Sweden, in 1988. In 1993 he was recruited as full professor to the University of Gothenburg. Between 1998 and 2002 he served as a professor of cognitive psychology at Uppsala University. Since 2002, he is professor at the Aging Research Center, Karolinska Institutet.

Lars Bäckman is known for his pioneering research on cognition in normal and pathological aging, with special focus on memory. Central themes in this research are the neural bases of cognitive plasticity across the life span and the role of dopamine functions in cognitive aging. His methodological approaches range from large-scale epidemiological studies to experimental brain-imaging work. Lately, a large part of his research has centered around COBRA – a study designed to explore longitudinal changes in the dopaminergic system and their impact on cognitive decline in aging.

For nearly half a century, Lars Bäckman's seminal ideas have had a major impact in his fields of research. He is one of the most cited Swedish researchers in psychology and cognitive neuroscience (H-index: 113; #citations > 57000) and the author of over 500 contributions, including papers in *Science*, *PNAS*, and *Psychological Bulletin*. His mentorship has influenced generations of graduate student and post docs. He has served as the main supervisor of 20 graduate students and 20 post docs, many of whom are active and influential in academia. In 2008, Lars Bäckman received the Humboldt research award. He is a member of the Royal Swedish Academy of Sciences and the European Academy of Sciences and continues to be an active contributor to the scientific community.

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