

Aging effects on the language abilities of the oldest old

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Almost all countries, including China, are experiencing a demographic shift towards older populations. On the one hand, the number of people over 60 is growing, and on the other hand, more people are becoming the oldest old (those aged ≥ 80 years). The oldest old are most in need of health care and assistance. In spite of this, we do not have a systematic understanding of how aging affects this population, particularly with regard to their language abilities. In this review, we address this issue by examining two questions. The first question is what gender differences are in aging. Specifically, we examine the phenomenon of "gender crossover" (Perls, 1995). It refers to that the male oldest old preserved language and cognitive abilities better than the female which reverses the pattern of younger old adults. We further investigate the potential reason for these gender differences. Another question is whether the aging process for the oldest old is consistent with that of the younger old (Merenstein & Bennett, 2022). There are currently two scenarios regarding this continuity question. One view states that due to improvements in technology, lifestyle, and socioeconomics, the onset of disability in language and cognitive abilities as well as chronic diseases among the oldest will be postponed (Fries, 1980). One extreme example is the super-agers, who retain language, memory and other cognitive abilities like the younger old and maintain a high level of fitness at advanced ages (Rogalski et al., 2013). The alternative scenario, by contrast, is the expansion of morbidity (Gruenberg, 1977). It suggests that aging effects become more severe with age, and are exaggerated in the oldest old. In order to clarify these two questions, research on language behavioral, neural, and genetic aspects is reviewed. It is our hope that the results of our investigation will contribute to a better understanding of aging effects on language abilities at an advanced age and to the promotion of healthy longevity.

References

- Fries, J. F. (1980). Aging, natural death, and the compression of morbidity. *N Engl J Med*, *303*(3), 130-135. <https://doi.org/10.1056/nejm198007173030304>
- Gruenberg, E. M. (1977). The Failures of Success. *The Milbank Memorial Fund Quarterly. Health and Society*, *55*(1), 3-24. <https://doi.org/10.2307/3349592>
- Merenstein, J. L., & Bennett, I. J. (2022). Bridging patterns of neurocognitive aging across the older adult lifespan. *Neuroscience & Biobehavioral Reviews*, *135*, 104594. <https://doi.org/https://doi.org/10.1016/j.neubiorev.2022.104594>
- Perls, T. T. (1995). The Oldest Old. *Scientific American*, *272*(1), 70-75. <http://www.jstor.org/stable/24980143>
- Rogalski, E. J., Gefen, T., Shi, J., Samimi, M., Bigio, E., Weintraub, S., Geula, C., & Mesulam, M. M. (2013). Youthful Memory Capacity in Old Brains: Anatomic and Genetic Clues from the Northwestern SuperAging Project. *Journal of Cognitive*

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