

Effect of age on speeded performance in a 4-choice reaction time task

Citation for published version (APA):

Adam, J. J., Teeken, J. C., Paas, F., van Boxtel, M. P. J., Houx, P. J., & Jolles, J. (1994). Effect of age on speeded performance in a 4-choice reaction time task: The bowed serial position effect. *Journal of Sport & Exercise Psychology*, 17, S19.

Document status and date:

Published: 01/01/1994

Document Version:

Publisher's PDF, also known as Version of record

Document license:

Unspecified

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

Effect of Age on Speeded Performance in a 4-choice Reaction Time Task: The Bowed Serial Position Effect

Jos J. Adam, Joep C. Teeken, Fred Paas, Department of Movement Sciences, University of Limburg, Maastricht, The Netherlands
Martin P.J. van Boxtel, Peter J. Houx, Jelle Jolles, Department of Psychiatry and Neuropsychology, University of Limburg, Maastricht, The Netherlands

This study examined the effect of age on reaction time performance in a 4-choice reaction time task. A total of 80 men and 60 women were classified into six age groups (25-35-45-55-65-75 years). The stimulus always appeared in one of four possible, linearly arranged, stimulus positions. The subject's task was to respond as quickly as possible to the stimulus by pressing the appropriate response key. Results showed that advancing age affected reaction time differentially for the four different stimulus positions. Specifically, the younger adults of 25 and 35 year showed similar reaction times in all four stimulus positions; older age groups, on the other hand, showed disproportionately longer reaction times to the inner than to the outer positions. In other words, advancing age seemed to transform an initially flat serial position curve into an increasingly bowed serial position curve. Possible mechanisms of this age-related bowed serial position effect are discussed.

Reaction Time Performance in Different Perception-Action Couplings

Jos J. Adam, Fred Paas, University of Limburg, The Netherlands
Mart J. Buekers, Irina J. Wuyts, Catholic University Leuven, Belgium
Will A.C. Spijkers, P. Wallmeyer, University of Dortmund, Germany

The goal of this study was to contrast and test predictions derived from information-processing and ecological perspectives by manipulating stimulus-response (affordance) compatibility. Using a four-choice reaction time paradigm, we determined response latencies of three different types of responses (i.e., a pointing, finger-lift, or vocal response), all mapped onto the same spatial stimuli. Results showed that reaction time of the more natural (i.e., affordance compatible) pointing response was more than 100 ms shorter than that of the more artificial finger and vocal responses. Importantly, the latter showed striking serial position effects while latency of the pointing response was independent of target position. These results were interpreted as suggesting that the specific nature of the stimulus-response relationship may determine whether an intermediate, stimulus-response translation, stage is needed to link perception and action, or that it is bypassed, allowing direct perception-action routines to guide performance. We conclude that the information-processing and the ecological frameworks are not mutually exclusive but complementary in that they address different kinds of perception-action phenomena.