

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Age Difference in Ill-Defined Problem Solving

Permalink

<https://escholarship.org/uc/item/8kn3t5pb>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 27(27)

ISSN

1069-7977

Author

Jeong, Heisawn

Publication Date

2005

Peer reviewed

Age Difference in Ill-Defined Problem Solving

Heisawn Jeong (heis@hallym.ac.kr)

Department of Psychology, Hallym University
Okchun-dong 1, ChonChun, Kangwon-do, 200-702, Korea

Introduction

It is commonly believed that cognitive abilities decline as people grow older. Although the rate of decline is not uniform across different cognitive functions, age-related decline is the norm rather than the exception (Cohen, 1979; Zacks, Hasher, & Li, 2000). However, does old age necessarily bring cognitive decline in such a way that we become less able information processors, unable to encode, comprehend, and remember information as well as we used to? A few studies have reported that older participants can sometimes outperform younger participants in areas of narrative interpretation, metaphoric comprehension, and story telling (Adams, Smith, Nyquist, Perlmutter, 1997; Boswell, 1979; Pratt & Robins, 1991). Another area where such 'backward' trend can be expected is everyday problem solving. Young people are notorious at dealing with ill-defined problems, at a loss of what to do when there are no 'textbook' answers or when the boundaries between right and wrong are muggy. As people age and gain more experience, they become better at dealing with less clear-cut cases, being able to juggle different options and values. The goal of the present study is to examine whether old age also has advantage in the area of ill-defined problem solving.

Method

Participants

Thirty individuals in three different age groups participated in this study. The young-age group consisted of 10 college students (mean age=19.7), the middle-age group consisted of 10 adults in their forties (mean age=44.3), and the old-age group consisted of 10 senior citizens over age 65 (mean age=69.1). They were all screened for their education and health status and given a small gift for their participation in the study.

Problems

Two ill-defined problems were constructed, both of which were about individuals who were running a small business. In the first problem, the main character had to deal with a problem of how to improve his business using a limited fund. In the second problem, the main character had to deal with an embezzlement case of a long-time colleague. Participants first read a short paragraph describing the situation and then answered questions about problem situation, additional information they needed to solve the problems, various solutions, and expected outcomes.

Procedures

Participants solved the problem individually either in the lab or quiet enclosed space at their convenience. The order of the problems was counterbalanced. The whole session was audio-taped and took on average about 30 minutes.

Preliminary Results and Discussions

Only portions of the data are transcribed so far, and two pieces of preliminary results are reported here. First, younger participants had a more detailed understanding of the problem situation than older participants. Older participants had a tendency to aggregate the problem specifics and define it in their own way. Second, there was a difference in the kind of additional information participants requested to solve the problems. Younger participants wanted to learn more about problem specifics, especially monetary issues such as the exact cost of specific equipment or the amount of embezzlement. On the other hand, older participants wanted to know more about other kinds of information such as the existence of other accomplice or the possibility of relocating the business. More analyses are needed to understand the precise effect of aging on ill-defined problem solving abilities, but regardless of the direction of the age-related change, causes of age-related changes should be expanded to include changes in strategy and knowledge-base as well changes in processing capacity.

Acknowledgments

This research was funded by Korea Science and Engineering Foundation (R05-2004-000-11743-0).

References

- Adams, C., Smith, M. C., Nyquist, L., & Perlmutter, M. (1997). Adult age-group differences in recall for the literal and interpretive meanings of narrative text. *Journal of Gerontology: Psychological Sciences*, 52B(4), 187-195.
- Boswell, D. A. (1979). Metaphoric processing in the mature years. *Human Development*, 22, 373-384.
- Cohen, G. (1979). Language comprehension in old age. *Cognitive Psychology*, 11, 412-429.
- Pratt, M. W., & Robins, S. L. (1991). That's the way it was: Age differences in the structure and quality of adults' personal narratives. *Discourse Processes*, 14, 73-85.
- Zacks, R. T., Hasher, L., & Li, K. Z. H. (2000). Human memory. In F. I. M. Craik & T. A. Salthouse (Eds.), *The handbook of aging and cognition* (pp. 293-357). Mahwah, NJ: Erlbaum.