



# Idioms in the Mental Lexicon: Evidence from idiom production of younger and older adults

**P.S. Conner, J. Hyun, I. Anema, B. O'Connor, D. Rubino, M. Goral, L.K. Obler**

The Graduate Center of the City University of New York, 365 Fifth Avenue, New York, NY 10016

**Contact Information**  
 Peggy S. Conner  
 pconner@center@gmail.com  
 (212) 817-8843  
 (914) 420-2669

## Introduction

While idioms may constitute a relatively high percentage of daily speech, debate remains concerning their status in the mental lexicon. Are they stored and accessed:

- as whole-phrases in the lexicon (non-compositionality)
- as individual lexical items that are then strung together to form the expression (compositionality),
- or aspects of both, as in Levelt and Meyer's (2000) superlemma model whereby single words are linked to an idiomatic representation that is both holistic and compositional?

### Hypotheses:

1. Because there is substantial literature on decline in naming abilities associated with advancing age (e.g., Au et al., 1995), an age-related decrease in correct production of idioms would suggest parallels between lexical items and idioms (i.e., non-compositionality).
2. If idioms are retrieved holistically, we predict few partially correct responses to the elicitation task. Sizable numbers of partially correct responses associated with advancing age, by contrast, would suggest compositionality.
3. Lexical retrieval difficulties in older adults and response to cueing would suggest comparability in representation between idioms and single lexical items. The increased need for cues and success with them support the unitary nature of idioms and their inherent links to content words.

### Stimuli

To assure that the idioms we selected would not differ in their familiarity among our different age-cohorts, we first had younger (aged 18-35) and older (aged 60-85) monolingual American-English speaking rates a set of 75 idioms: 65 were American idioms and 10 were literally-translated foreign idioms that we expected raters to judge unfamiliar. Only those 40 items rated equally familiar (3 and above on a 7-point Likert scale) by young and old raters were included in the experimental stimuli.

For each stimulus idiom, a scenario was generated that pilot data confirmed could appropriately elicit the idiom in question (see example). In order to get participants in the mode of producing idioms instead of appropriate literal completions to the scenario-sentences, they were led through an extended set of instructions consisting of 12 practice items, with progressively fewer cues.

**Stimulus:** "We tried to keep the party a surprise from my parents, but my sister had to open her big mouth and..."

**Target Response:** "let the cat out of the bag."

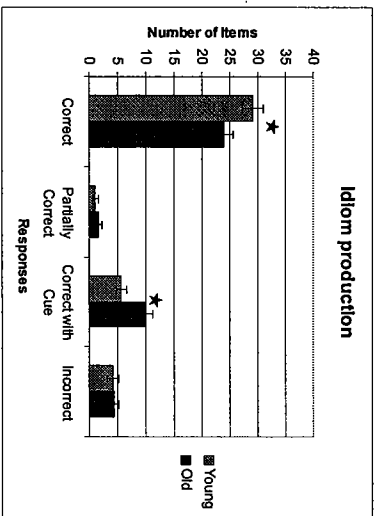
## Participants and Methods

Eighty monolingual adults in two age groups participated in this study. The two groups were matched for gender and education.

- 40 younger adults (ages 18-30;  $\bar{x}$ =25.3yrs, education:  $\bar{x}$ =15.8 yrs)
- 40 older adults (ages 60-85;  $\bar{x}$ =72.3 yrs), education:  $\bar{x}$ =15.9 yrs

The participants were tested individually. Their responses were classified into the following categories with 94.15% interrater reliability:

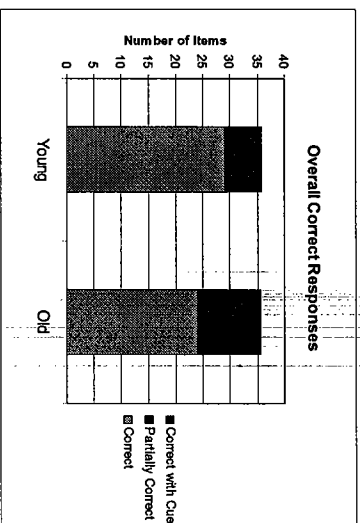
- correct (*let the cat out of the bag* or equivalent *spill the beans*)
- partially correct (*let it out of the bag*)
- correct with cue (correct response after the word prompt, "let")
- incorrect (*blurt it out* or no response)



## Results

A repeated measures ANOVA revealed a main effect of Age ( $F=551.64, p < .001$ ) and an Age by Response Type interaction ( $F=15.92, p < .001$ ).

- Planned comparisons indicated that consistent with our predictions: Older adults produced fewer correct items (before cues) than younger adults (Young:  $\bar{x}=29.18$ , Old:  $\bar{x}=24.05; t = 4.2, p < .001$ )
  - Both groups produced fewer partial responses than incorrect responses (Young:  $\bar{x}=1.10$ , Old:  $\bar{x}=1.75; t = -1.67, p = .1$ ).
  - In addition, older adults had more correct-with-cue responses than younger adults (Young:  $\bar{x}=5.63$ , Old:  $\bar{x}=9.88; t = -5.12, p < .001$ ).
- Idiom production for the two groups did not differ when total average responses for correct, partially correct and correct with cue were combined (Young:  $\bar{x}=35.94$ , Old:  $\bar{x}=35.68$ ).



**Response to Cueing:**  
 -Older participants made better use of cues than younger participants, although both groups seemed to be equally familiar with the idioms.  
 -When older participants did not get a correct answer on their own, that meant they more likely had it on the tip of their tongue while younger adults simply did not know it.

## Conclusion

Our results are consistent with the hypothesis that idioms are stored and accessed at some level as whole units.

1. Age-related decline was apparent for idiom production. Younger adults produced more idioms correctly on average than older adults.
2. Partial responses to this idiom production task were few in both younger and older adults, further supporting a holistic representation of idioms.
3. Similar to findings of single-word retrieval where older adults benefit from phonemic cues (Mackay et al., 2002), our older group benefited from initial content-word cues to the idioms. Older adults provided a greater percentage of correct responses to cues than younger adults.

Our data thus support the Levelt and Meyer (2000) model of production, suggesting a level at which idioms are represented and accessed holistically.

## REFERENCES

Au, R., Joung, P., Nicholas, M., Obler, L.K., Kass, R., & Albert, M. (1995). Naming Ability Across the Adult Lifespan. *Ageing and Cognition*, 2, 300-311.

## ACKNOWLEDGEMENTS

Mackay, A. J., Conner, L. T., Albert, M. L., & Obler, L. K. (2002). Noun and verb retrieval in healthy aging. *Journal of the International Neuropsychological Society*, 8, 764-770.

Levelt, W.J.M., & Meyer, A.S. (2000). Word for word: Multiple-lexical access in speech production. *European Journal of Cognitive Psychology*, 12, (4), 433-452.