

Application for the MCM Fund for Student Research Excellence

Doctoral Dissertation Research: Examining the Interactions between Language Experience & Cognitive Abilities in Word Learning & Word Recognition

PROJECT SUMMARY:

There has been much recent interest in the finding of a "bilingual advantage". That is, bilingualism appears to confer benefits on a number of non-linguistic cognitive measures, particularly executive control. Yet bilingual children often face a rather different situation when it comes to language: their profile often diverges from monolinguals, leading to classification as language disordered. This in turn contributes to public policies that discourage bilingualism. Most studies have examined ways in which bilinguals are better or worse than monolinguals. However, it is possible that bilinguals simply approach tasks differently, or weight information sources differently. This leads to advantages in some tasks and disadvantages in others. This project seeks a principled understanding of this conflict by testing the hypothesis that differences in linguistic exposure and age alter how individuals approach the problem space for learning and comprehending language. To become a proficient language user a learner must successfully process complex acoustic information, while relying on cognition to accomplish higher thought processes like working memory (involved in the temporary holding of information) and attention (necessary for selection and inhibition). Over the course of development individuals presumably rely on these skills to acquire an impressive vocabulary, and to recognize those words even in difficult listening environments (e.g., when speech is heard in the presence of competing background noise). Four experiments with infants and adults will rely on behavioral measures (e.g., eye-tracking, verbal responses) to examine monolinguals' and bilinguals' ability to process bottom-up information to form word-meaning associations, and to rely on top-down knowledge during speech comprehension. Specifically, the project will investigate whether language experience influences children's ability to selectively attend to a particular sound source during word learning and word recognition, and whether there is a maturational trajectory of the interaction between cognition and word learning and recognition.

TESTING

- The proposed dissertation research includes four experiments: two child experiments and two adult experiments. Two groups of participants (1 monolingual and 1 bilingual) will be included in each of the experiments. Testing sessions will last approximately 60 minutes and will include time to complete questionnaires and to complete the actual testing procedure. The target number of participants is 30 in each of the language groups for the four experiments (60 in each experiment, 240 in total).
- Given that recruitment of bilingual participants in Maryland poses additional challenges (e.g., there is not a very high incidence of bilingualism and matching SES across language groups would be difficult), data collection for the bilingual group will also be carried out in Dr. Elizabeth Johnson's lab at the University of Toronto Mississauga.

FUNDING

- I have submitted a proposal to NSF for a Dissertation Improvement Grant to help cover the costs of this work. I have also been awarded travel funds through the Center for Evolutionary Biology of Hearing (CEBH) to travel to Canada for data collection. I am requesting funds to help cover the compensation for participants. The cost per participant is of approximately \$10. While funds from this award would not be enough to pay for all of the participants that will be tested as part of this project, it would contribute to pay for 50 of them.

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Name: _____ Advisor: _____

Program of Study: BA MA AuD PhD Date: January 24th, 2013

Instructions:

This award is designed to support student research projects, and is made possible by an endowment to the Department. Support will be granted for active research support, such as materials, equipment, subject payments, etc., as well as expenses associated with presentation of research at professional meetings. No award will exceed \$500, and most awards will be of lesser value, to accommodate the number of students seeking financial assistance.

Deadlines:

Applications must be received by the Chair by October 1 (Fall) or February 15 (Spring)

Title and brief description of study/support need: Doctoral Dissertation Research: Examining the Interactions between Language Experience & Cognitive Abilities in Word Learning & Word Recognition. I am requesting funds to help cover costs associated with participant testing. Please see attached summary of the project and how the funds will be used.

(For projects please attach either your IRB proposal or Prospectus; for conference travel, please attach your submission and notification of acceptance).

Has this study been approved by the IRB? 12/12/12 Yes (date) _____ No _____ Pending

Student information:

Year in program _____ GPA in program _____ Progress remaining to degree: expected graduation
Spring 2014

Requested materials/supplies/support (please itemize):

Item(s)	Per item cost	Total
Supplies (tapes, test ¹ s, etc.)		
Equipment ²		
Subject payments	\$10 per participant	\$500
Conference registration or travel		
Other (please itemize):		
		Total request: \$500

¹ All durable items (e.g. tests) must be returned to the Department following completion of the proposed study.

² All equipment purchased through this award must be returned to the Department after conclusion of the study.