



HOW DOES THE ACQUISITION OF A SECOND LANGUAGE AFFECT COGNITION?

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Abstract

This presentation focuses on the effect learning a second language (L2) has on cognition. The studies presented in this poster session investigated the influence of the L2 on thought and the benefits of being bilingual. The main foci of these studies are the effects of two languages on comprehension, production, and processing and the organization of the bilingual memory. Implications of the findings of these studies include the activation of two lexicons, negative interference of the first language (L1) with L2, and the access of linguistic knowledge in the working memory. The purpose of this presentation is to encourage further research on bilingualism and the effects of an L2 on a learner's general cognition. This poster presentation provides annotated bibliographies of five research articles that investigated the effects of bilingualism on cognition. In addition, a list of practical implications from these studies, key terms, visual aids, and references are included.

Key Terms

- Bilingualism** – the ability to understand and speak two languages
- Cognate** – having the same linguistic derivation; from the same original word or root
- Cognition** - a term referring to the mental processes involved in gaining knowledge and comprehension
- Homograph** – words that share form but not meaning
- Memory** – process by which information is encoded, stored, and retrieved
- Multicompetence** – knowledge of more than one language within the mind of an individual
- Stroop Effect** – a demonstration of interference in the reaction time of a task

Studies Examined

Bialystock (2011) examined the performance of bilinguals compared to monolinguals on linguistic tasks. The researcher used the Stroop Effect to measure reaction times for language specific tasks. The results revealed that bilinguals outperformed monolinguals in using controlled attention.

Filipovic (2011) investigated the influence that language has on thought. Centered around the Sapir-Whorf hypothesis, this study sought to discover language specific effects on memory. The study revealed that language environment determines response and that the memory systems are intertwined. Bilingual participants responded in the language in which they were addressed and appeared to have interdependence in bilingual processing and memory storage.

French and Ohnesorge (1995) examined how the bilingual memory is organized and if the two lexicons operate separately. It was determined that under normal circumstances, bilingual individuals function using only one active lexicon.

Thordardottir (2011) sought to explain the seeming limited vocabulary of bilingual children. The results of this study revealed that bilingual children have a much larger combined vocabulary than monolinguals and that linguistic exposure positively impacts vocabulary acquisition in both languages.

Titone, Libben, Mercier, Whitford & Pivneva (2011) performed a two part study on nonselective access by bilingual readers. The second of these studies sought to determine if the simultaneous activation of both languages that occurs in comprehension and production also occurs in processing. The L2 was shown to have a positive effect on reading but a negative effect on recognition of interlanguage homographs.

Figure 1: The Stroop Effect (From "Reshaping the Mind: The Benefits of Bilingualism" by Bialystock, 2011.)

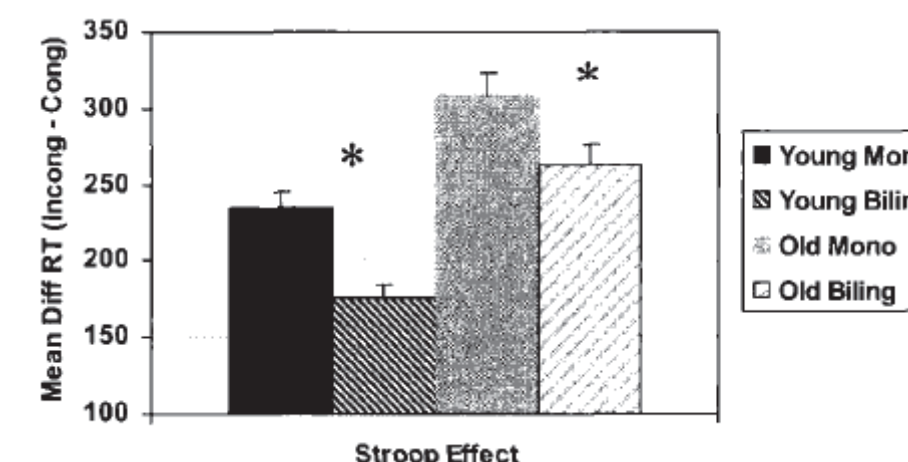
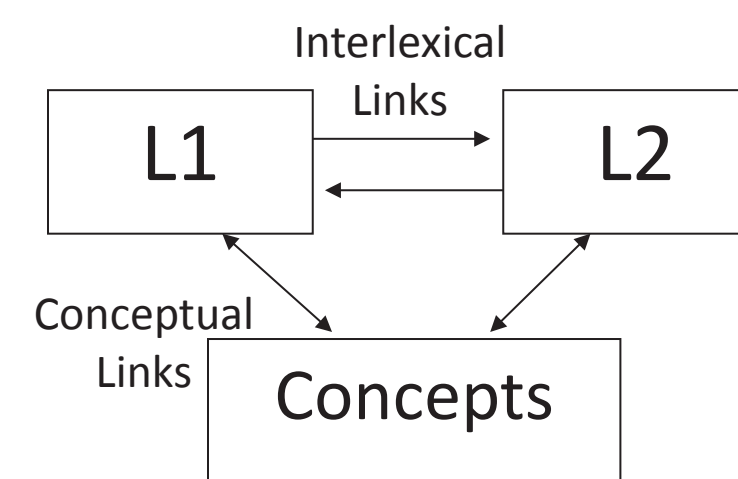


Figure 2: A Hierarchical Model of Bilingual Memory, Kroll & Stewart, 1990 (From "Using Non-Cognate Interlexical Homographs to Study Bilingual Memory Organization" by French & Ohnesorge, 1995)



Practical Implications

As learners acquire a second language, their L1 lexicon will adapt as will their language processing.

L1 knowledge will intrude on L2 processing causing negative interference (i.e. homographs) as well as positive intrusions (i.e. cognates).

Bilinguals typically operate with one active lexicon; however, sometimes both will be active, which may cause confusion.

Learners will refer to their L1 when learning a new language, which can cause language transfer.

False cognates and homographs can interfere with comprehension.

Exposure is known to have a major impact on vocabulary acquisition.

Conclusion

Bilingualism positively impacts reaction time to language specific tasks and memory. It appears that both lexicons are not usually active at the same time; however, certain language tasks may cause the learner to access both. Exposure and language environment directly impact which lexicon is used, and increased exposure to either language strengthens vocabulary acquisition. However, bilinguals often struggle with false cognates, homographs and other interlanguage interferences.

References

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