The Effect of Spontaneous Production of Translation Equivalents on Lexical Retrieval in ASL-English Bilinguals

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Introduction

Bilinguals and Lexical Retrieval

Greater difficulty than monolinguals in lexical retrieval (Gollan & Acenas, 2004; Gollan & Silverberg, 2001)

- Semantic competition (Gollan & Acenas, 2004; Miozzo & Caramazza, 1997)
- Reduced frequency of use (Gollan, Montoya, Cera, & Sandoval, 2008)

Bimodal Bilinguals

- Fluent in a signed and spoken language
- Code blend: produce signs and words at the same time (Emmorey, Borinstein, Thompson, & Gollan, 2008)
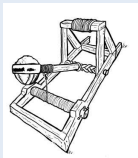
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Role of iconicity in lexical retrieval

Iconicity: non-arbitrary relationship between word form and meaning

Sign languages

- Sign languages lend themselves to iconic signs share a greater form-meaning relationship (Klima & Bellugi, 1976)
- Iconicity facilitates within language lexical retrieval (Ormel, Knoors, Hermans, Verhoeven, 2009; Thompson, Vinson, Vigliocco, 2009)
- Iconicity has no effect on language processing (Poizner, Bellugi, & Tweeny, 1981; Bosworth & Emmorey, 2010)

English

- Iconic gestures facilitate English lexical retrieval (Rauscher, Krauss, & Chen, 1996)
- Iconic gestures do not affect TOT resolution (Beattie & Coughlan, 1999; Frick-Horbury & Guttentag, 1998)

Research Question

Does the spontaneous production of ASL translation equivalents facilitate or block lexical retrieval in an English picture-naming task?
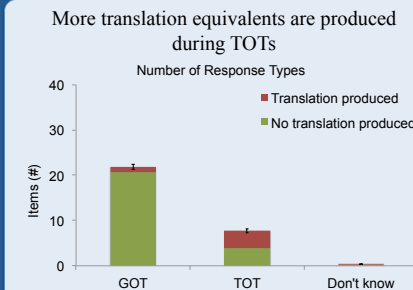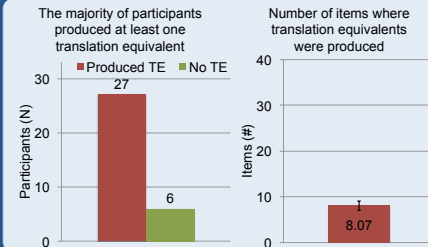
Participants

- 33 hearing fluent ASL-English bilinguals (23 F, 10 M)
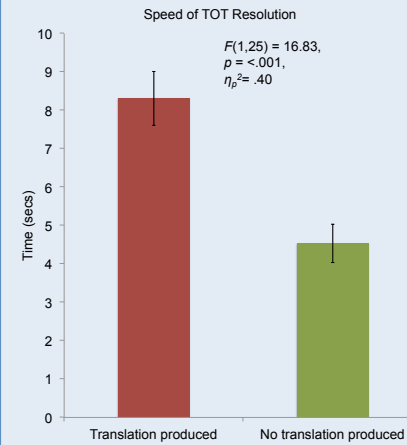- M_{age} = 28.60, range 18-50 years.

Task and Coding

English picture naming task: 52 items (Gollan & Brown, 2006)
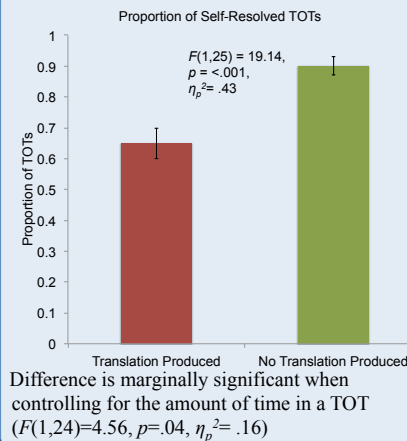

GOT: "weathervane"

TOT → Self-resolved / Unresolved

Don't Know
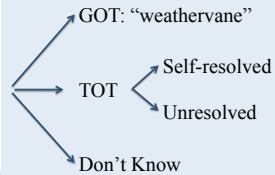
40 items ASL translation equivalents (Average Iconic Rating (3.53/5).

The majority of participants produced at least one translation equivalent

Number of items where translation equivalents were produced

More translation equivalents are produced during TOTs

Number of Response Types

When translation equivalents are produced, TOTs take longer to resolve

Speed of TOT Resolution

$F(1,25) = 16.83$, p = <.001, η_p^2 = .40

Fewer TOTs are resolved when translation equivalents are produced

Proportion of Self-Resolved TOTs

$F(1,25) = 19.14$, p = <.001, η_p^2 = .43

Difference is marginally significant when controlling for the amount of time in a TOT ($F(1,24)$=4.56, p=.04, η_p^2= .16)

Once a translation equivalent is produced, TOTs are resolved no faster or no slower than when a translation equivalent is not produced

Speed of TOT Resolution

p = ns
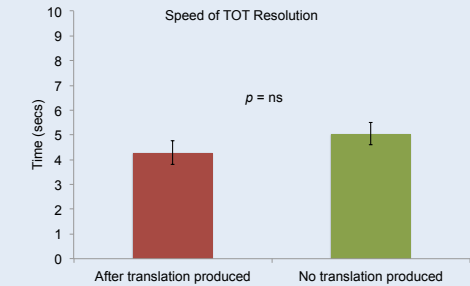
Summary & Conclusions

- English lexical retrieval is not facilitated by spontaneous production of translation equivalents
- Translation equivalents may block lexical retrieval, suggesting competition between languages at the lemma level
- Alternatively, once speakers experience difficulty with lexical retrieval, they may produce translation equivalents as a strategic attempt to resolve the TOT
- English lexical retrieval is not facilitated by the iconicity of signs

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