Introduction

While monolingual norms exist for many word types in English (e.g., MRC Linguistic Database, Cotheart, 1981), including emotion words (ANEW, Bradley & Lang, 1999), and some in Spanish (translated ANEW, Redondo et al., 2007) there are no reliable corpora based on Spanish-English bilinguals that examines concrete, abstract, emotion, and emotion-laden words.

Previous norms of Spanish speakers (Redondo et al., 2007) have used speakers of dialects from Spain which vary considerably from other dialects. Past research with bilingual stimuli has inconsistently controlled for cognates.

Recent work examines emotion and emotion-laden words as important word types previously confounded with abstract words in normative studies (Knickerbocker & Altarriba, 2013).

Purpose

• Create a well-controlled norm for concrete, abstract, emotion, and emotion-laden stimuli
• Provide a corpus of stimuli for use with Spanish-English bilinguals
• Establish a protocol for determining cognate status in language translations

Method

Participants

• 70 Spanish-English bilingual undergraduates from University at Albany, SUNY
• Age ranges from 17-23 years (M = 19.1, SD = 1.3), 70% female
• Nation of origin: 54.7% USA (excludes Puerto Rico), 18.8% Dominican Republic, 6.3% Peru, 6.3% Puerto Rico, 4.7% Ecuador, 4.7% Mexico, 3.1% Guatemala, 1.6% Colombia
• Age of Spanish acquisition ranges from 1-8 years (M = 2.1, SD = 1.7)
• Age of English acquisition ranges from 1-16 years (M = 4.3, SD = 3.1)

Method (Cont.)

Stimuli

• Several lexical characteristics for all English stimuli were obtained from the MRC Linguistic Database (Cotheart, 1981) and valence and arousal ratings from ANEW (Bradley & Lang, 1999).

192 English words

• Four word types: concrete (e.g., chair), abstract (e.g., heritage), emotion words that describe a specific emotional state (e.g., love or regret), and emotion-laden words that evoke an emotion indirectly, but do not describe an emotional state (e.g., puppies or cancer)

192 Spanish translations of English words

• All English words had one Spanish translation equivalent.

• All cognate pairs were removed from the stimulus set by applying a set of procedures that is unique to this area of research. Independent-samples t-tests confirmed that cognate and noncognate pairs differed significantly in terms of two metrics of word similarity (Kondrak, Marcu, & Knight, 2003):
  - Dice’s Coefficient (number of matching bigrams/mean number of bigrams for both words). For example, for garden/jardín, Dice’s Coefficient = .40
  - Longest Common Subsequence Ratio (number of letters in longest common subsequence/number of letters in longer word). For example, for intimate/intimo, LCSR = .63

Results

Table 1

<table>
<thead>
<tr>
<th>Language</th>
<th>Valence</th>
<th>Arousal</th>
<th>Concrete</th>
<th>Imagery</th>
<th>Concept</th>
<th>Familiarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4.5</td>
<td>3.8</td>
<td>1.4</td>
<td>4.4</td>
<td>3.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Spanish</td>
<td>4.4</td>
<td>3.9</td>
<td>1.3</td>
<td>4.2</td>
<td>3.2</td>
<td>1.7</td>
</tr>
</tbody>
</table>

*Means in each language are significantly different through t-tests at the .05 level, two-tailed

Table 2

<table>
<thead>
<tr>
<th>Language</th>
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<th>Arousal</th>
<th>Concept</th>
<th>Imagery</th>
<th>Familiarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>1.0</td>
<td>2.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Spanish</td>
<td>1.0</td>
<td>2.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Table 3

<table>
<thead>
<tr>
<th>Language</th>
<th>Valence</th>
<th>Arousal</th>
<th>Concept</th>
<th>Imagery</th>
<th>Familiarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>1.0</td>
<td>2.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Spanish</td>
<td>1.0</td>
<td>2.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Conclusions

• English and Spanish translation equivalents differ (see Table 1) for familiarity, t = 6.44, p < .001, context availability, t = 3.08, p < .001, and imagery, t = 2.57, p < .05.

• Differential pattern of correlations across scales based on language (differences are highlighted in Table 2 and Table 3)

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View the Cognition and Language Laboratory website!

Scan the QR code below

A searchable database of these stimuli will be available soon at this address for your use in future research.

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