Assessing Language Dominance through Self-reports on the Bilingual Language Profile

Libby M. Gertken, David Birdsong, & Mark Amengual

February 24, 2012
L2 Proficiency Assessment Workshop
Montpellier, France
Bilingual Language Dominance

- Need for guidelines on measurement of dominance
Bilingual Language Dominance

- **Need for guidelines on measurement of dominance**

- **Academic settings**
  - divergent approaches in defining and selecting participants for bilingual research
Bilingual Language Dominance

- Need for guidelines on measurement of dominance

- Center for Open Educational Resources and Language Learning (COERLL)
  - [http://www.coerll.utexas.edu/coerll/](http://www.coerll.utexas.edu/coerll/)
Bilingual Language Dominance

• **Need for guidelines on measurement of dominance**

• **Non-academic settings**
  - need for descriptive linguistic profiles
  - education, private business, clinical research
What is language dominance?
Operationalizing Dominance

• Dominance in the literature:
Operationalizing Dominance

• EXPERIENTIAL CRITERIA

Current L1 vs. L2 use, length of residence, age of acquisition, current country of residence (e.g. Chincotta & Underwood, 1998; Grosjean, 1982; Hazan & Boulakia, 1993)
Operationalizing Dominance

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Self-identification, ‘comfort’, family allegiance (e.g. Grosjean & Miller, 1994)
Operationalizing Dominance

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  Lexical richness, picture naming times (BNT), sentence perception in noise, mean sentence length, reading speed (Treffers-Daller, 2011; Favreau & Segalowitz, 1982; Flege, MacKay, & Piske, 2002; Golato, 2002; Magiste, 1992)
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- **SELF-REPORTED PROFICIENCY/PREFERENCE**
  Language preference (e.g. Cutler et al., 1989; Marian & Neisser, 2000), proficiency (e.g. Vaid & Menon, 2000)
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- **SUBJECTIVE ASSESSMENT**
  
  Interviews, researcher assessment (e.g. Talamas, Kroll, & Dufour, 1999), native speaker accent ratings (Flege, MacKay, & Piske, 2002)
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Conceptualizing Dominance

• Construct derives from the nature of bilingualism
  • Dominance is inherently relativistic
    (vs. proficiency)

• Describes the relationship between competencies in the two languages
  e.g. relative proficiency, use, processing capacity, etc. in L1 vs. L2

• Dominance is gradient
Dominance Assessment

• **Not new**
  
  • Zirkel (1974) : “the use of parallel tests of aural ability to indicate initially the language dominance of children who, for example, are otherwise commonly classified as "Spanish-speaking" or "bilingual" based upon surname.
  
  • “...bilingualism should be thought of as a continuum”

• **Hot topic:**
  
  • Tremblay (2011); Gollan et al. (2010); Lim et al. (2008); Dunn & Fox Tree (2009); Marian et al. (2007); Special issue of *International Journal of Bilingualism* June 2011 Vol.15, L2 Proficiency Assessment Workshop!
Recent Assessment Tools

- **Bilingual Dominance Scale** *(Dunn & Fox Tree, 2009)*

- **LEAP-Q: Language Experience and Proficiency Questionnaire** *(Marian, Blumenfeld, & Kaushanskaya, 2007)*
Recent Assessment Tools

• **Bilingual Dominance Scale** *(Dunn & Fox Tree, 2009)*

**Appendix. The twelve Bilingual Dominance Scale questions and the scoring procedure**

Questions 1 and 2: At what age did you first learn Spanish ________ English ________?

Scoring: 0–5 yrs = +5, 6–9 yrs = +3, 10–15 yrs = +1, 16 and up = +0

Questions 3 and 4: At what age did you feel comfortable speaking this language? (If you still do not feel comfortable, please write “not yet.”)

Spanish ________ English ________

Scoring: 0–5 yrs = +5, 6–9 yrs = +3, 10–15 yrs = +1, 16 and up = +0, “not yet” = +0
Recent Assessment Tools

• **Bilingual Dominance Scale** *(Dunn & Fox Tree, 2009)*
  
  • **Pros:**
    
    • Questions are understandable
    
    • Instrument is quick and easy to administer
Recent Assessment Tools

• **Bilingual Dominance Scale** (Dunn & Fox Tree, 2009)
  
  • **Cons:**
    
    • Open-ended questions lead to variability in responses
    • Weights assigned to individual answers seem arbitrary
      
      • 5 points to language score of language predominantly used at home
      • 4 points to predominant language of region where participant currently living
    
    • Scoring problems
      
      • Dominance (Lang. X - Lang. Y), but sometimes score for Lang. Y is a negative number, resulting in a higher dominance score than expected!
Recent Assessment Tools

• **LEAP-Q: Language Experience and Proficiency Questionnaire** (Marian, Blumenfeld, & Kaushanskaya, 2007)

![LEAP-Q Questionnaire](image-url)
Recent Assessment Tools

• **LEAP-Q: Language Experience and Proficiency Questionnaire** (Marian, Blumenfeld, & Kaushanskaya, 2007)

• **Pros:**
  - Comprehensive questionnaire
  - Not limited to bilinguals
Recent Assessment Tools

- **LEAP-Q: Language Experience and Proficiency Questionnaire** (Marian, Blumenfeld, & Kaushanskaya, 2007)

- **Cons:**
  - Lengthy and complex items
    - “When choosing to read a text available in all your languages, in what percentage of cases would you choose to read it in each of your languages? Assume that the original was written in another language, which is unknown to you.”
  - 15-25 minutes to complete
  - No dominance score (descriptive, independent data for each language)
Bilingual Language Profile (Blp)

• Goals:
Bilingual Language Profile (Blp)

• **Goals:**
  
  • Address needs of academics and non-academics in a variety of contexts
Bilingual Language Profile (Blp)

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  - Concise, quick, easy questionnaire (for participants and researchers)
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  • Continuous measure (vs. dichotomous groups)
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  • Scaled (continuous) answers for each item
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  - Concise, quick, easy questionnaire (for participants and researchers)
  - Multi-measure approach
  - Equal weight given to each component
  - Continuous measure (vs. dichotomous groups)
  - Scaled (continuous) answers for each item
  - Online and open-source
Current Uses

• **Spanish-Catalan bilinguals** (Mark Amengual)

An experimental approach to phonetic transfer in the production and perception of early Spanish-Catalan bilinguals

- Phonetic transfer between the L1 and L2 vowel systems of Spanish-Catalan bilinguals
- Dominance is grouping factor (dichotomous and continuous)

• **Late learners of French** (Libby M. Gertken)

The Use of Structural and Lexical Information in Second Language Sentence Processing: Evidence from Syntactic Priming during Comprehension

- Processing of syntactic ambiguities by advanced L2 users
- How dominance is predictive of interpretation and reaction times
Bilingual Language Profile

• Bilingual Language Profile website:
  • https://sites.la.utexas.edu/bilingual/

• BLP Components
• BLP Scoring
• Google Docs
What do dominance scores on the BLP tell us?
• Participants:
  • 65 English-French bilinguals
  • living in Paris, France ($n=21$) or Austin, Texas ($n=44$)
  • All had completed high school or earned a more advanced degree

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**Summary of English-French bilinguals’ biodata ($n=65$)**

<table>
<thead>
<tr>
<th></th>
<th>Age (yrs)</th>
<th>Age of Acquisition (yrs)</th>
<th>Length of Residence in a Francophone Country (yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>34.22</td>
<td>12.68</td>
<td>5.07</td>
</tr>
<tr>
<td><strong>Range</strong></td>
<td>18-68</td>
<td>6-20+</td>
<td>0-20</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>10.76</td>
<td>3.88</td>
<td>5.66</td>
</tr>
</tbody>
</table>
• **Aim:** Determine whether self-reported proficiency in the BLP correlates with performance on a standardized proficiency exam.
Study: Comparison With Objective Proficiency Measure

- **Oxford Placement Test (OPT) in French**
  - 50-question multiple choice test of French grammar
  - -1 for each incorrect response; 50 points total

<table>
<thead>
<tr>
<th>Score</th>
<th>Proficiency Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>Complete Beginner</td>
</tr>
<tr>
<td>4-10</td>
<td>False Beginner</td>
</tr>
<tr>
<td>11-20</td>
<td>Lower Intermediate</td>
</tr>
<tr>
<td>21-30</td>
<td>Intermediate</td>
</tr>
<tr>
<td>31-40</td>
<td>Upper Intermediate</td>
</tr>
<tr>
<td>41-50</td>
<td>Advanced</td>
</tr>
</tbody>
</table>

- [http://www.lang.ox.ac.uk/courses/tst_placement_french.html](http://www.lang.ox.ac.uk/courses/tst_placement_french.html)
Blp / Opt

• BLP:

<table>
<thead>
<tr>
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<td></td>
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</tr>
<tr>
<td>BLP History</td>
<td>50.00</td>
<td>3.70</td>
<td>12.96</td>
</tr>
<tr>
<td>BLP Use</td>
<td>44.46</td>
<td>9.35</td>
<td>8.95</td>
</tr>
<tr>
<td>BLP Proficiency</td>
<td>53.92</td>
<td>2.44</td>
<td>39.71</td>
</tr>
<tr>
<td>BLP Attitudes</td>
<td>52.56</td>
<td>3.55</td>
<td>37.37</td>
</tr>
<tr>
<td>BLP Global Scores</td>
<td>200.70</td>
<td>13.20</td>
<td>98.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>102.70</td>
</tr>
</tbody>
</table>

<sup>a</sup> Derived by subtracting global scores for French from global scores for English

min: 0
max: 54.48
### Bilingual Language Profile Descriptive Statistics and Dominance Score (n=65)

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### Oxford Placement Test Descriptive Statistics (n=65)

<table>
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<tr>
<th>OPT French</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40.95</td>
<td>7.12</td>
<td>23-50</td>
</tr>
</tbody>
</table>

Advanced n=41
Upper Intermediate n=19
Intermediate n=5
Blp / Opt

- **Correlation Results:**

![Correlation Chart](chart)
**Correlation Results:**

Self-reported proficiency on the BLP correlates significantly with performance on standardized proficiency test ($r = .63, p< .01$)
Study: Establishing Criterion-Based Validity (Part 1)

- **Aim:** establish criterion-based validity by comparing BLP self-reports to performance on a psycholinguistic task.
Study: Establishing Criterion-Based Validity (Part 1)

• **A Quick Test of Cognitive Speed (AQT)** (Wiig et al., 2002)
  - psycholinguistic picture-naming task; originally developed as a tool for early diagnosis of dementia
  - Addresses working memory capacity, executive attention, cognitive speed (Langdon et al., 2005)
  - Has been used as a way to classify Spanish-English bilinguals into language-dominance groups (Langdon et al., 2005)
Color-Object
On this page the different colors and objects are combined. Name each combination as fast and accurately as you can. Name the color first and then the object. Start here (point) and end here (point). Are you ready? (Pause for response.) Begin now.
Aqt Procedure

• 3 timed naming tasks:
  • Color-Shape
  • Color-Animal
  • Color-Object

• Alternating languages (counterbalanced)

• Timed with stopwatch by researcher
Aqt Procedure

• **Global score of dominance:**
  
  Total French score - Total English score

• Score of 0 indicates balanced bilingualism, negative is more French dominant, positive is more English dominant
• **Participants:**

  - subset of 65 English-French bilinguals ($n=47$)

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**Bilingual Language Profile Descriptive Statistics and Dominance Score (n=47)**

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*Derived by subtracting global scores for French from global scores for English

min: -218

max: 218
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### A Quick Test of Cognitive Speed Descriptive Statistics and Dominance Scores (n=47)

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<th>AQT</th>
<th>English</th>
<th>French</th>
<th>Dominance Score&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Color-Form</td>
<td>48.68&lt;sup&gt;a&lt;/sup&gt;</td>
<td>11.01</td>
<td>52.71</td>
</tr>
<tr>
<td>Color-Object</td>
<td>49.86</td>
<td>11.06</td>
<td>56.23</td>
</tr>
<tr>
<td>Color-Animal</td>
<td>50.58</td>
<td>11.42</td>
<td>55.46</td>
</tr>
<tr>
<td>AQT Global Scores</td>
<td>149.11</td>
<td>30.56</td>
<td>164.40</td>
</tr>
</tbody>
</table>

<sup>a</sup>All scores in seconds

<sup>b</sup>Derived by subtracting global scores for English from global scores for French
Blp / Aqt

• Correlation Results:
Blp / Aqt

- **Correlation Results:**

  BLP Dominance scores correlate significantly with AQT Dominance scores \((r = .41, p<.01)\).
Study: Establishing Criterion-Based Validity (Part 2)

• Dominance measures should “reflect performance on a range of tasks” (Flege et al., 2002)
Study: Establishing Criterion-Based Validity (Part 2)

• Processing of Canonical and Non-canonical sentences in French

Study: Establishing Criterion-Based Validity (Part 2)

- **Stimuli**

<table>
<thead>
<tr>
<th>Agent-first</th>
<th>Patient-first</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active</strong> Plausible</td>
<td><strong>Passive</strong> Plausible</td>
</tr>
<tr>
<td><strong>Active</strong> Implausible</td>
<td><strong>Passive</strong> Implausible</td>
</tr>
<tr>
<td><strong>Subject Cleft</strong> Plausible</td>
<td><strong>Object Cleft</strong> Plausible</td>
</tr>
<tr>
<td><strong>Subject Cleft</strong> Implausible</td>
<td><strong>Object Cleft</strong> Implausible</td>
</tr>
</tbody>
</table>

- **Aural presentation**
Study: Establishing Criterion-Based Validity (Part 2)

“C’est le bébé que l’oncle a embrassé.”

• Decision: who is doing what to whom?

AGENT = l’oncle?

OUI          NON
Study: Establishing Criterion-Based Validity (Part 2)

- **Dependent variable:**
  - Reaction Time to decision task

- **Independent Variable:**
  - BLP Dominance
• **Participants:**

  • subset of 65 English-French bilinguals \((n=18)\)

---

**Summary of English-French bilinguals’ biodata**

**Current Residence: US \((n=18)\)**

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
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### Bilingual Language Profile Descriptive Statistics and Dominance Score (n=18)

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* min: -218  
* max: 218
Blp Dominance / Rts

- **BLP:**

  Bilingual Language Profile Descriptive Statistics and Dominance Score (n=18)

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<tr>
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<td>25.90</td>
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  min: -218

  max: 218

- **RTs**

  Reaction Time Descriptive Statistics (n=18)

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Blp Dominance / Logrts

- Correlation Results:
**Correlation Results:**

BLP Dominance scores correlate significantly with Reaction Times to Agent/Patient decisions after processing Implausible/Plausible, Canonical/Non-canonical sentences in French \( (r = .37, \ p < .01) \)
Blp Dominance / Rts

• Stronger correlations with Implausible vs. Plausible sentences
• Stronger correlations with Patient-first vs. Agent-first sentences
Blp Dominance / Rts

- Stronger correlations with Implausible vs. Plausible sentences
- Stronger correlations with Patient-first vs. Agent-first sentences

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<tr>
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<td>Sig. (2-tailed)</td>
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<tr>
<td>96</td>
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</table>

**. Correlation is significant at the 0.01 level (2-tailed).
a. Argument Order = Patient1st

**. Correlation is significant at the 0.01 level (2-tailed).
a. Argument Order = Agent1st
Conclusions

• **Study : BLP / OPT**
  - Strong correlation between BLP proficiency scores and OPT proficiency scores suggests accurate self-reporting

• **Study : BLP / AQT**
  - Criterion-based validity established by comparing dominance scores on BLP and performance on AQT
  - Can we use it as a proxy for psycholinguistic dominance?

• **Study : BLP / Reaction Times**
  - Dominance may be a more important predictor when processing complex vs. simple constructions
Conclusions

• **Study : BLP / OPT**
  • Strong correlation between BLP proficiency scores and OPT proficiency scores suggests accurate self-reporting

• **Study : BLP / AQT**
  ★ Criterion-based validity established by comparing dominance scores on BLP and performance on AQT.
  ★ Can we use it as a proxy for psycholinguistic dominance?

• **Study : BLP / Reaction Times**
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• **Study : BLP / AQT**
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  • Can we use it as a proxy for psycholinguistic dominance?

• **Study : BLP / Reaction Times**
  ★ Dominance may be a more important predictor when processing complex vs. simple constructions
Use Of The Blp

• **Current uses:**
  - Intended for healthy adult and adolescent bilinguals, school levels of literacy
  - Variety of language pairs: Catalan-Spanish, English-Spanish, English-French, English-Arabic...
  - Contexts of use: immigrant, L2A, simultaneous/early bilinguals

• **Future uses:**
  - More language pairs
  - More bilingual contexts: heritage learners, attrition
How To Use The Blp

• **How to access:**

• **Center for Open Educational Resources and Language Learning (COERLL)**
  - [http://www.coerll.utexas.edu/coerll/](http://www.coerll.utexas.edu/coerll/)

• **Bilingual Language Profile website:**
  - [https://sites.la.utexas.edu/bilingual/](https://sites.la.utexas.edu/bilingual/)
Feedback

• We appreciate your feedback!
  • Click the “Give us feedback” link on the BLP website

• Bilingual Language Profile website:
  • https://sites.la.utexas.edu/bilingual/
Thank you

*Assessing Language Dominance through Self-Reports on the Bilingual Language Profile*

**Libby M. Gertken**  
PhD Candidate  
Department of French and Italian  
The University of Texas at Austin  
libbymg@utexas.edu

*Center for Open Educational Resources and Language Learning*  
http://www.coerll.utexas.edu/coerll/

**Bilingual Language Profile**  
https://sites.la.utexas.edu/bilingual/  
Feedback: blp@coerll.utexas.edu
References


Notes slides
### SCORING EXAMPLE

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**Total Score**

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**Dominance** 109.518
Blp Design

• 4 modules:

• **Language History**
  • Age of acquisition, Age of comfort, # years of schooling, # years in LX/Y-speaking country/family/work environment

• **Language Use**
  • % use average week with friends/family/at school or work, talking to yourself, counting
Blp Design

• 4 modules:

  • **Language Proficiency**
    • Speaking/understanding/reading/writing

  • **Language Attitudes**
    • Feel like yourself, identify with LX/Y-speaking culture, importance of using like a native speaker, importance of being mistaken for a native speaker
INTERNAL VALIDITY

- checks the relation between the individual measures included in the scale, and the composite scale itself.

<table>
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<th>BLP Attitudes FR</th>
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