

# **A Psycholinguistic Tool for the Assessment of Language Loss**

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# Introduction

- There is never a natural inclination to abandon one's native language. Language loss is always in response to 'external' economic, social, and political pressures.
- Yet, it is ultimately a neurological phenomenon.

# Bilingualism & lg maintenance

- Proficiency requires...
  - Maintenance of an intricate network involving
    - tens of thousands of words
    - operations

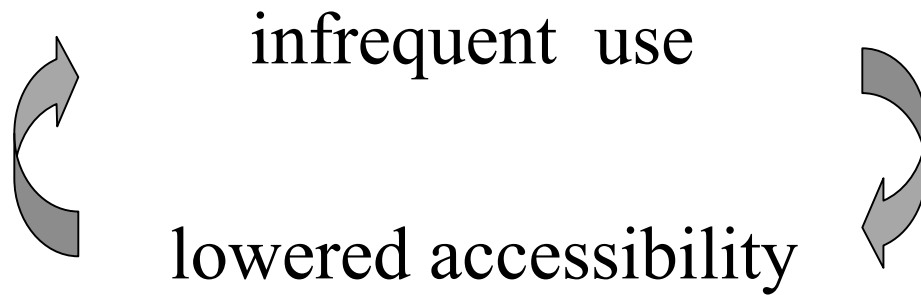
# De Bot (2004)

- ... all the languages in the system need maintenance and advanced use ... It's not about how much memory space we have to store language material, ... but about the time and resources needed to keep all parts of the system in the foreground of processing ... Learning another language does not remove older languages from memory, but does push them more to the background and makes it accordingly more difficult to access them.

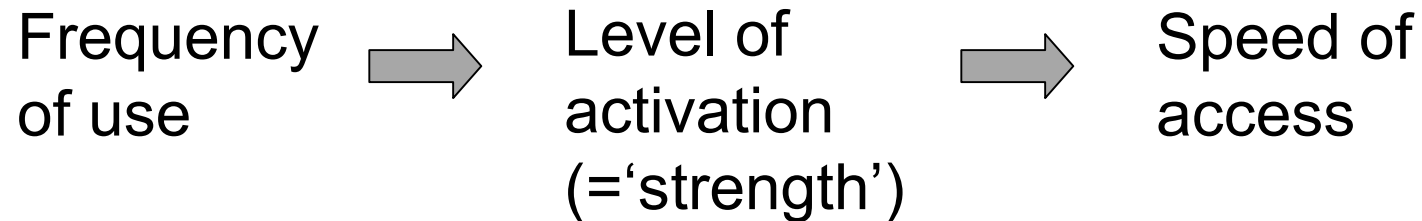
# Bilingual maintenance

- Jessner (2003: 241): ‘psycholinguistic systems containing two or more language systems’ are ‘less stable than monolingual ones, and repair or reactivation procedures are constantly required to maintain the system in a steady state.’

# Frequency & accessibility



# Frequency & access speed



# Where this leads...

- This opens the door for psycholinguistic assessment of language loss in individuals and communities.



# The key idea--speed of access

- The speed with which a speaker can access the vocabulary items and structure-building routines of a language serves as a potent indicator of psycholinguistic activation.

# The HALA Project: The Hawaii Assessment of Language Access

- A series of tests that assess language strength/activation in groups of speakers, by measuring speed of access to lexical items and structure-building routines.
- Each speaker is tested in 2 languages, compared for relative speed of access.

# Goals of HALA tasks

- Inexpensive materials.
- Easy for speakers, easy for researchers:
  - Simple instructions for speakers.
  - Not dependent on orthography.
  - Can be run with children or adults.
  - Short testing time for each task.
  - Can be used by field workers, educators, and other researchers with no special training in psycholinguistics (or even linguistics).
  - Researcher needn't have extensive knowledge of the languages being tested.

# Goals of HALA tasks

- Portable:
  - Can be run on a PC with readily available software plus an audio recorder.
  - Can be used without revision for any language.
- Valid: Sensitive indicator of small differences in language dominance.
- Multi-purpose, e.g., enhancement of:
  - Language documentation (e.g., accessibility of different vocabulary items).
  - Psycholinguistics: (e.g., richer language base).

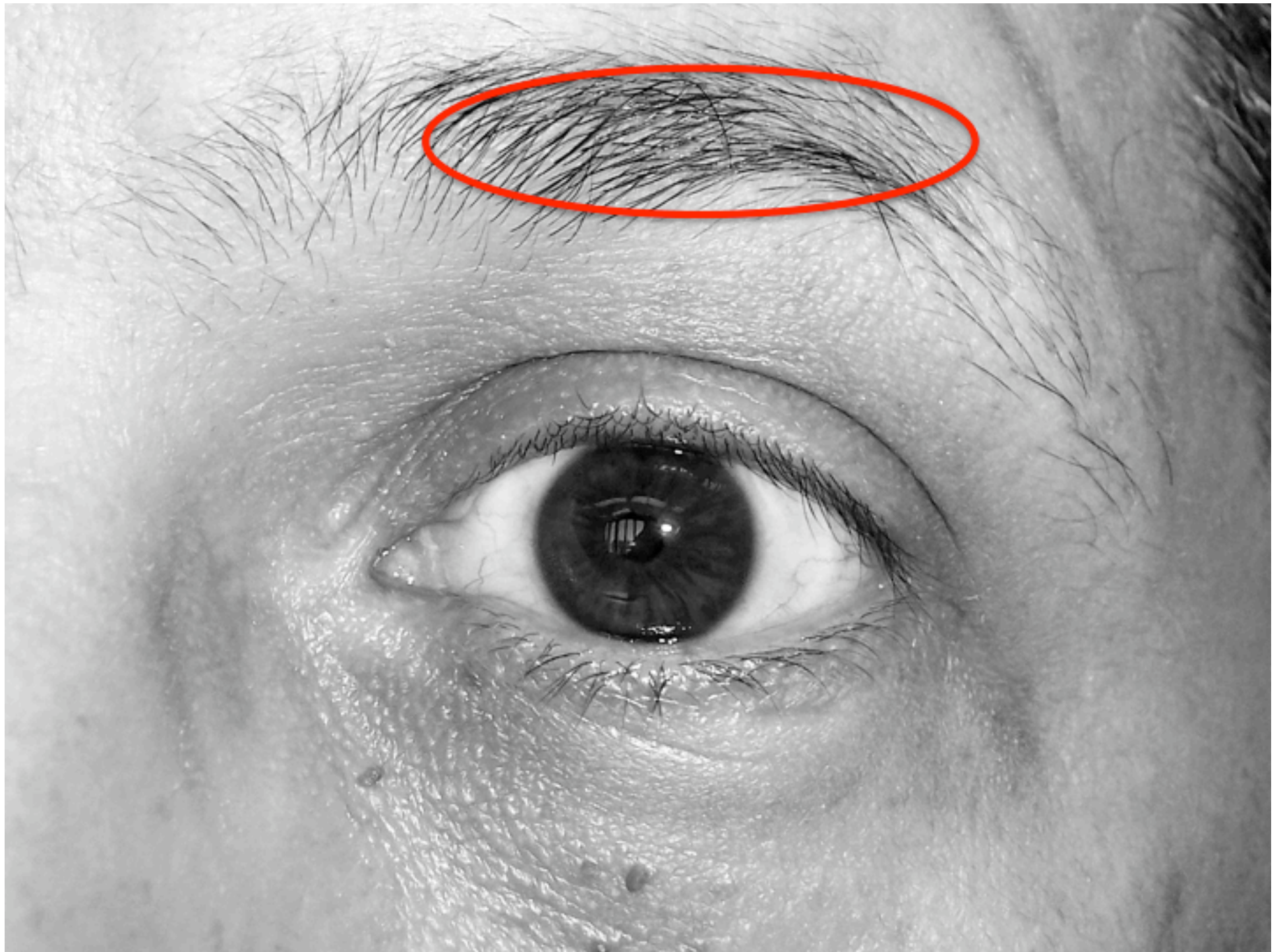
# Example: Body part naming

- Speakers name body parts from a series of photographs.
- Naming time is recorded: time (in ms) from the onset of the photo to the onset of their response.
- Naming times are then compared for the two languages of interest.

# Demonstration

- For the next two slides, name the body part circled in red, as quickly as possible.







# Test design

- Speakers are tested in both languages on all materials.
- Speaker A and Speaker B can differ from each other in naming times; what is most critical are the response times for Language A vs. Language B in each speaker.

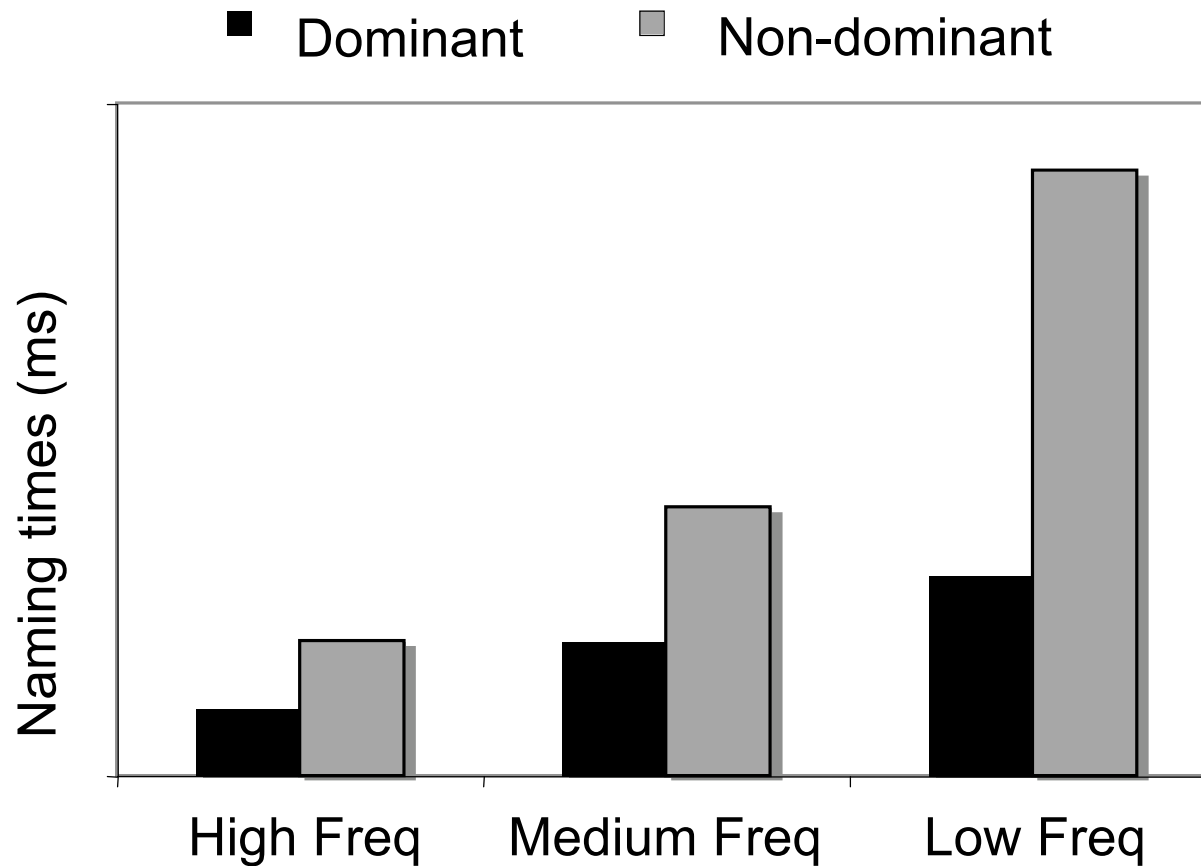
# Key linguistic properties

- We can expect body part vocabulary in all languages.
- At least some terms (e.g., ‘eye’) are basic enough to have been acquired by all users; others (e.g., ‘eyebrow’) are less basic.
- The terms should be relatively resistant to replacement by borrowing.

# Key psycholinguistic properties

- Naming times are negatively correlated with the frequency of use of the test item: *high freq -> short naming time.*
- The dominant language produces, on average, shorter naming times than the non-dominant language.
- This dominance effect increases as item frequency decreases.

# Expected pattern of naming times



# Analysis of results

- Naming time, measured by experimental software or scripts run on audio files.

With further analysis:

- Accuracy of item names
- Word duration/fluency

# A Preliminary Test: Korean Heritage Speakers

# Why use Korean heritage speakers as a first test?

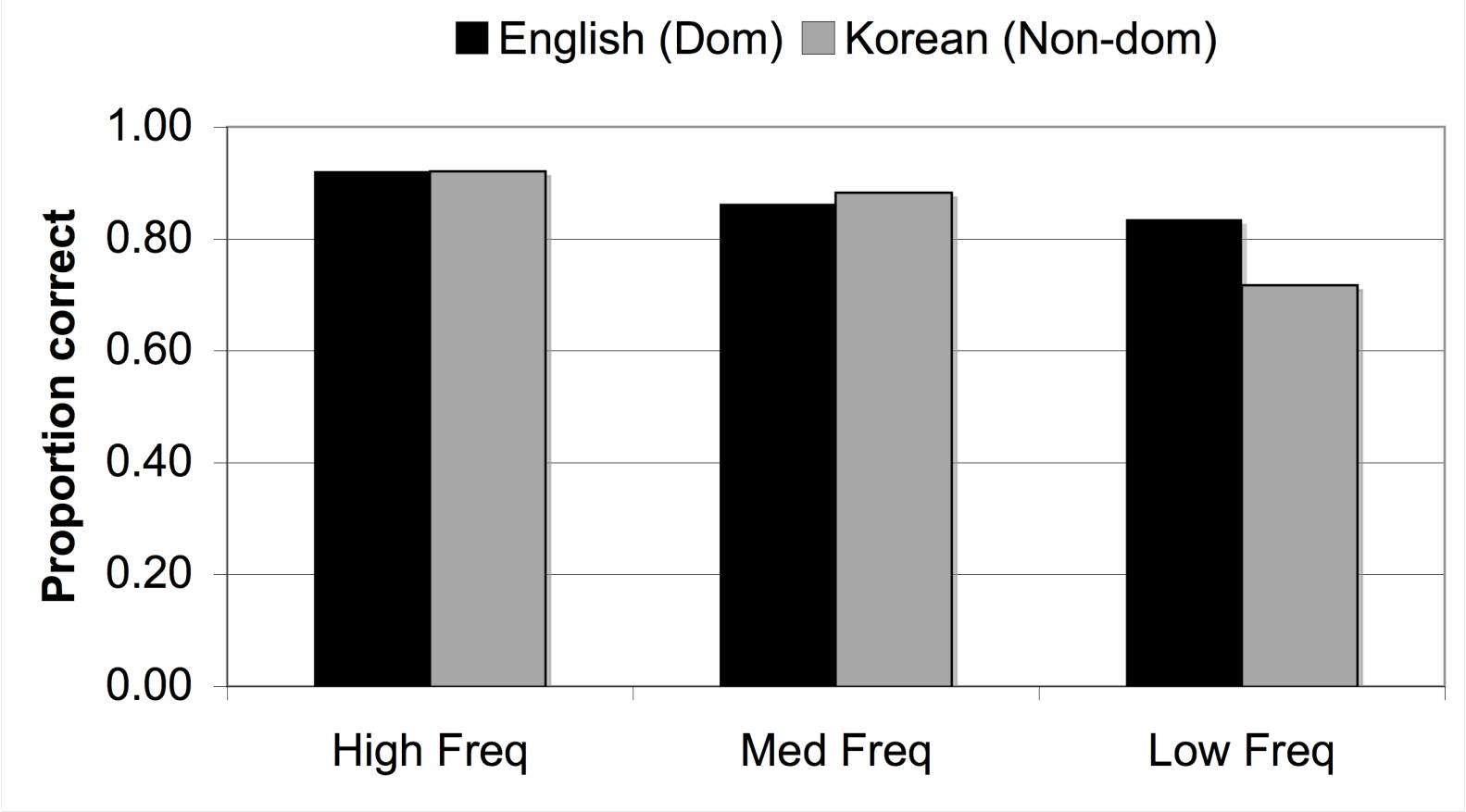
- Independent information was available about their proficiency and language dominance.
- Their upbringing is characterized by exposure to a family language at home (Korean) and to an overwhelmingly dominant competitor language (English) outside the home.

# Speakers' backgrounds

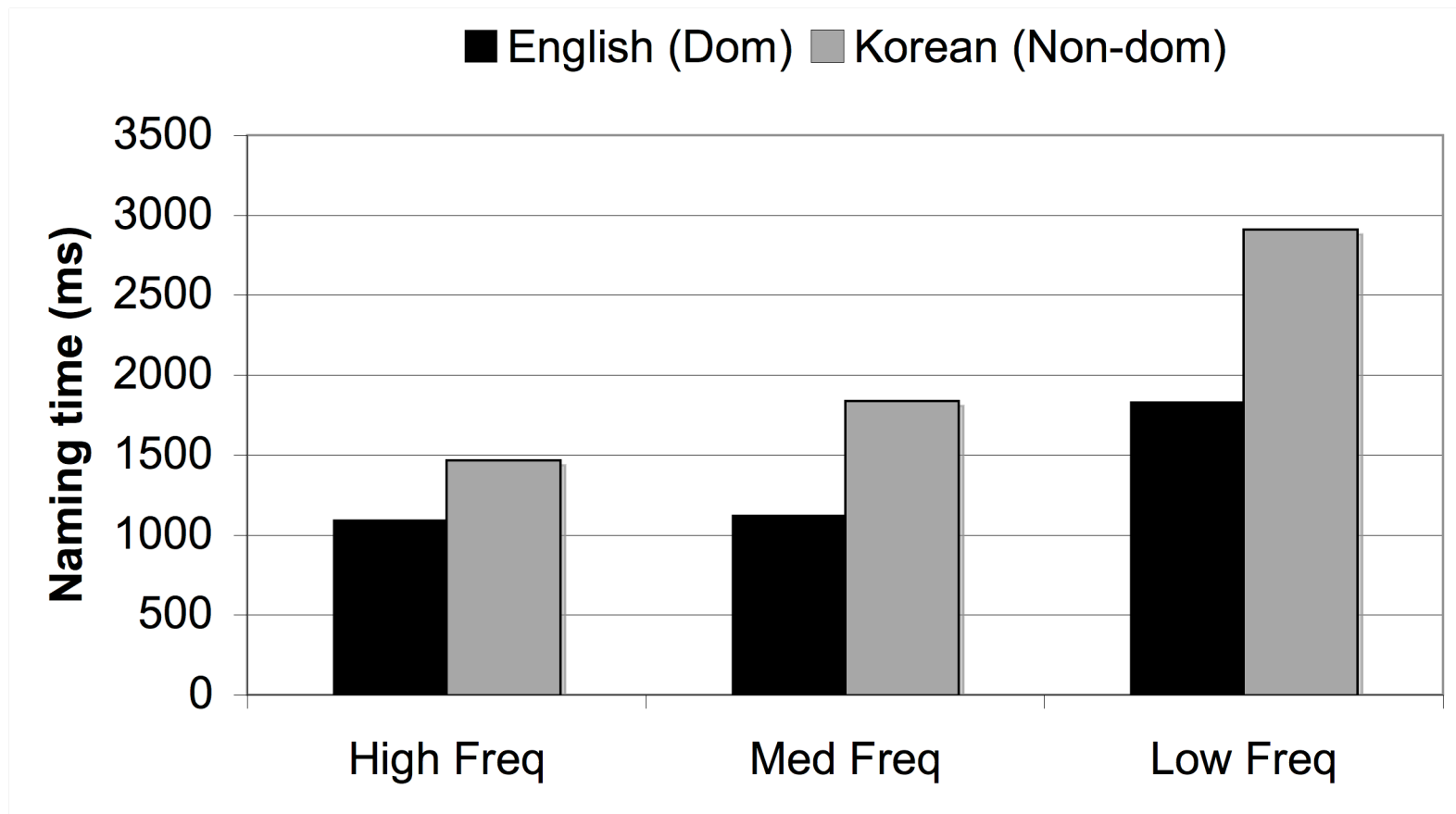
- 11 highly bilingual speakers.
- All participants:
  - Were born in the U.S. to Korean-speaking parents.
  - Received both Korean input and English input from birth.
  - Consider English to be their dominant language.
- In self-reports, Korean is used for 10% - 50% of daily language (mean of 35%).



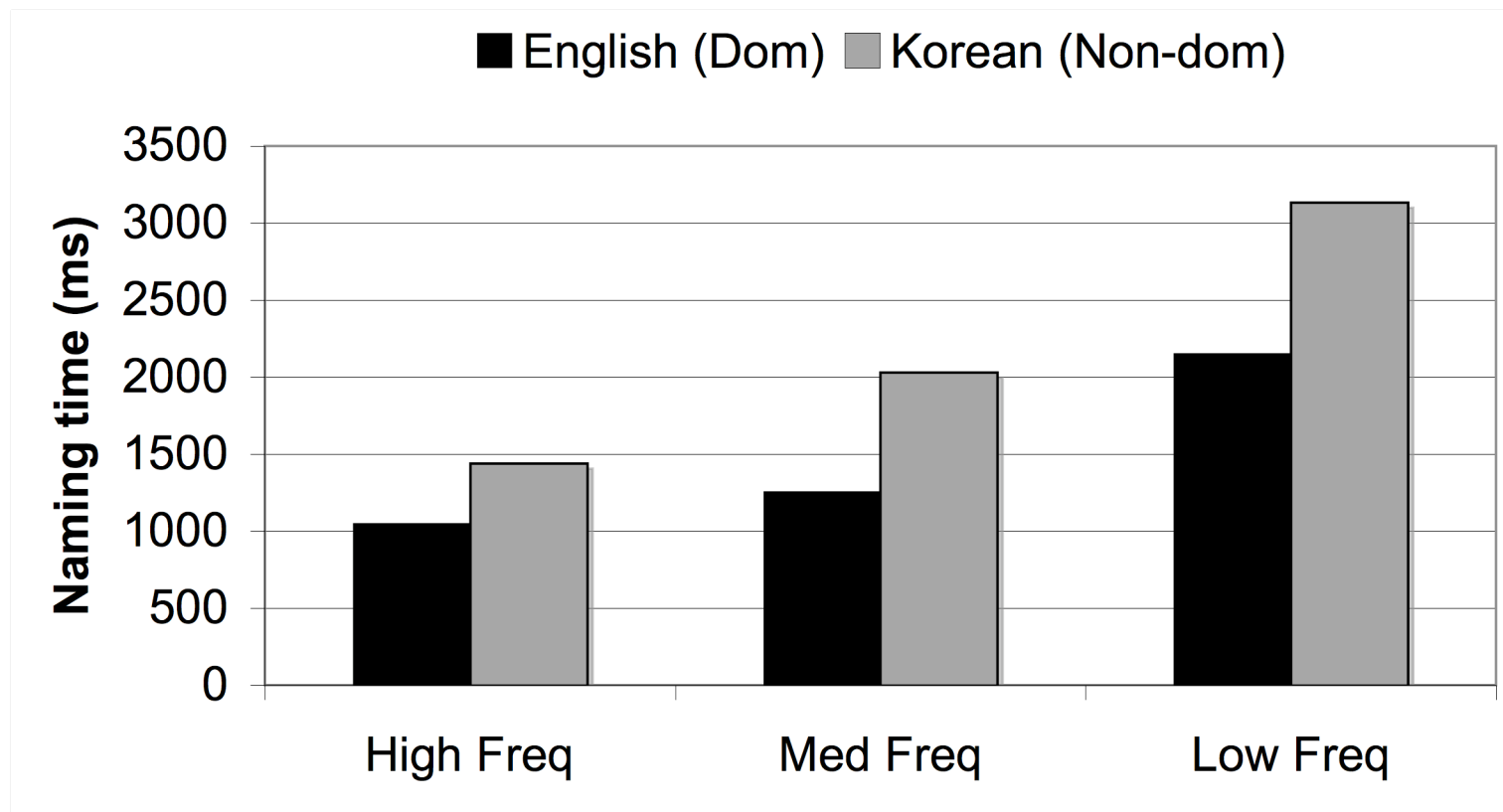
# Results 1: Accuracy



# Results 2: Naming times (all accurate responses)



# Results 3: 5 speakers with accuracy of at least 90%



# Summary: Korean heritage

- Accuracy declined with decreasing frequency, but did not show a significant language dominance effect.
- Naming times show significant effects of frequency group and language dominance.
- The language dominance effect remains significant even with highly accurate speakers: Naming times provide a sensitive measure of dominance.

# Concluding remarks

- The mastery and maintenance of virtually all aspects of language, from vocabulary to morphosyntax, is sensitive to freq. of use.
- Frequency of use translates into increased accessibility (strength).
- A good indicator of a language's strength in an individual is the speed with which its vocabulary and structure-building operations are accessed relative to those of another language.

# Advantages of the HALA approach

- Offers a simple way to assess relative language strength in individuals and communities.
- Supplements traditional techniques for language documentation by adding measures of psycholinguistic access that capture the dynamic character of linguistic knowledge.
- Acknowledges the importance of activation and access to language maintenance.

# Future steps

- Validating the HALA package in additional populations.
- Applying the HALA tests:
  - Early signs of language endangerment.
  - Language access across communities.
  - Language access across cohorts.
  - Effectiveness of conservation programs.
  - Relative language access of individuals.

# References

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# Acknowledgments

Sang Yee Cheon  
James Hafford  
Yukie Hara  
Jinhwa Lee  
On-Soon Lee  
Katherine Perdue  
Jawee Perla  
Ken Rehg  
Hiroko Sato  
Manami Sato

Mai Takemoto  
Apay Tang  
Nick Thieberger  
Kaori Ueki  
Zhijun Wen  
Julia Wieting  
Linguistics Beyond  
the Classroom  
Dept. of Linguistics  
Endowment Fund  
The UH Community