How Classifiers Group Solid Objects in Hmong, Japanese and Mandarin Chinese

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Abstract

The categories marked in different languages can offer insight into the structure of human thought. Classifiers are grammatical systems widely used in Austronesian, Mesoamerican, and Southeast Asian languages to classify nouns into categories based on their semantic features. In this study, we provided experimental evidence of how classifiers are used to divide solid objects in Hmong, Japanese, and Mandarin Chinese. The most common 135 English nouns for solid objects were used to elicit classifiers from the speakers of different languages. We report the similarities and differences across the different languages.

Introduction

Background of Classifier Use in East Asia Languages

Hmong is the language name for a group of dialects spoken in northern Vietnam, Thailand, Laos, and southern China.

*ex. ib **daim** nplooj* ‘one/a-CLASSIFIER-leaf’

Japanese is the language mostly spoken in Japan.

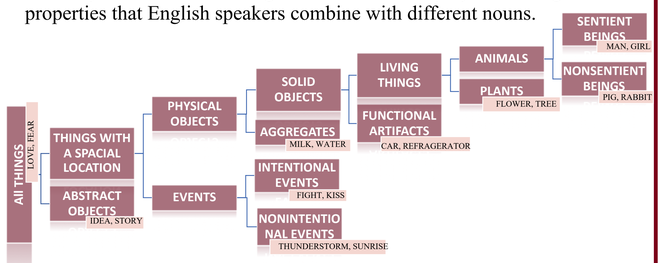
*ex. happa iti **mai*** ‘leaf-one-CLASSIFIER’

Mandarin is an official language of the People's Republic of China and Taiwan and one of the four official languages of Singapore.

ex. *yi **pian** yezi* ‘one-CLASSIFER-leaf’

Structure of Human Categories derived from Western Languages

Keil (1979) proposed that the structure of human concepts consists of a set of binary contrasts that are organized hierarchically by examining the properties that English speakers combine with different nouns.



Methods

Participants:

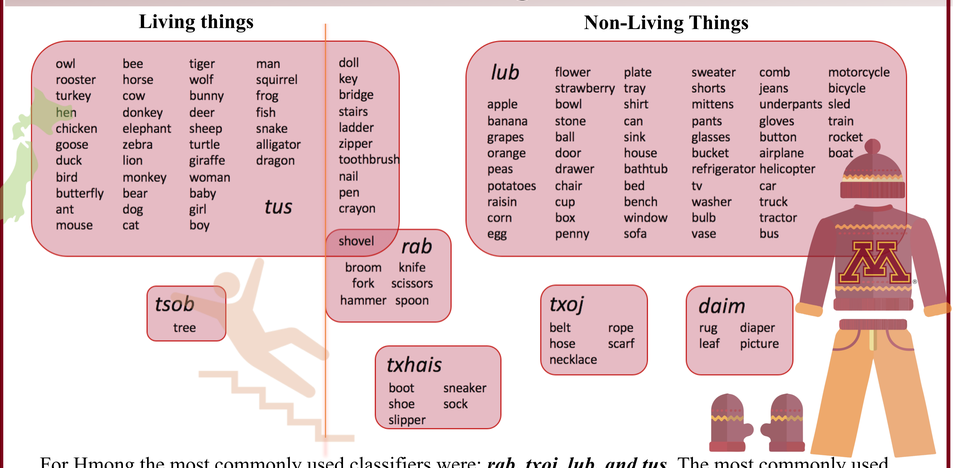
Hmong	Japanese	Mandarin
N=12	N=10	N=12
Age: 28-83	Age: 20-50	Age: 23-33

Materials: Translation of 135 nouns refer to solid object in Hmong, Japanese, and Mandarin.

Procedures:

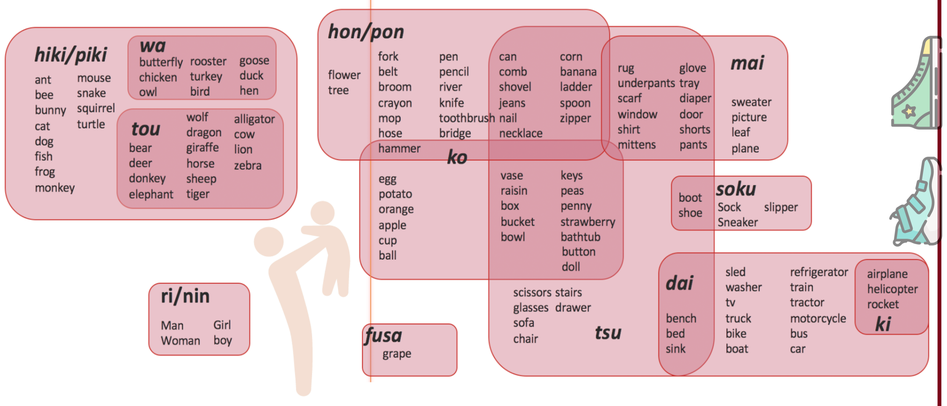
1. Participants were tested orally in their own language by a native speaker of that language.
   - Then, the participant practiced with two examples.
2. Experimenter said: **When I hear *apple* the counter that comes to mind is *lub.* In Hmong, I would say, “One lub apple.” Here’s one for practice: How would you say, “One ___ chicken?”**
3. The experimenter and participant went over these two examples until the participant understood the task
   - Then the 135 nouns were presented, one at a time, to each participant.

Hmong



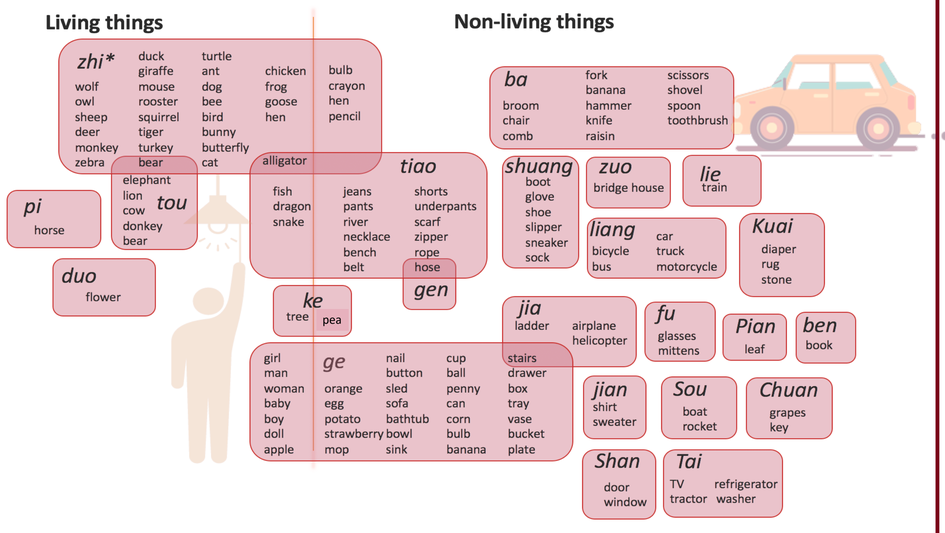
For Hmong the most commonly used classifiers were: ***rab, txoj, lub, and tus.*** The most commonly used Hmong classifier was ***lub*,** which was elicited by nouns that referred to fruit, other round objects, machines, vehicles, and clothing.

Japanese



In Japanese the most commonly used classifiers were: ***tsu, hon-pon, mai, hiki-piki, ko, dai,*** and ***tou***
Unlike Hmong and Chinese, Japanese puts people into their own group.

Mandarin



For Chinese, the most commonly used classifiers were: ***zhi, ge, tiao, ba, liang, tai, and tou.***
Mandarin elicited the highest number of classifiers, and categories.

Overlap Across the Languages

Figures 1-4. We used Venn Diagrams to capture the overlap across the languages. Figures 1-4 show the largest 4 overlapping groups. These diagrams may suggest new universal human categories.

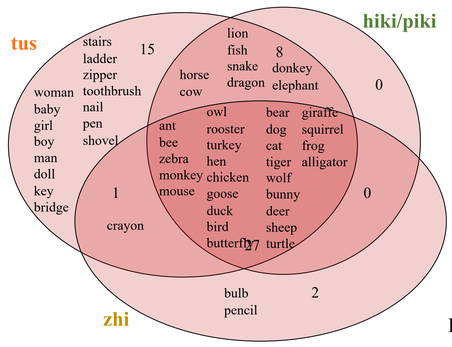


Figure 1. The largest class of overlapping nouns referred to animals (e.g., *bear, frog,* and *rooster*).

Figure 2. The second largest class referred to a shape-based class consisting of three-dimensional, spherical objects (e.g., *apple, ball,* and *vase*).

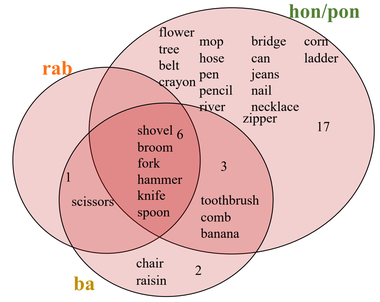


Figure 3. The third largest class referred to artifacts with handles.

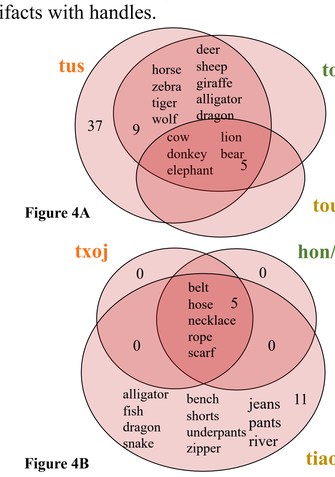


Figure 4A

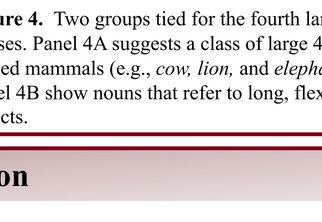


Figure 4B

Figure 4. Two groups tied for the fourth largest classes. Panel 4A suggests a class of large 4-legged mammals (e.g., *cow, lion,* and *elephant*). Panel 4B show nouns that refer to long, flexible objects.

Conclusion

Similarities across the Languages

We found that all three language divided nouns into classes of animals, round-3D objects, hand-held objects, and long and flexible kinds. These classes that emerged from these analyses differ somewhat from the classes that have emerged from studies of English and Western countries. For example, the class of hand-held objects and long and flexible objects have received little attention in psychological work, and may be important classes for people.

Differences across the Languages

One of the most striking differences is that some of the nouns grouped together by a classifier includes nouns that refer to both living and nonliving things. For example, ***tus*** in Hmong groups together *boy* and *ladder*. ***Tiao*** in Mandarin was used with *snake* and *rope,* and Sera Johnson & Kuo (2013) found that Chinese speaker rely more on shape for categorizing these objects. Another interesting difference between the groups is how the category of people were treated. In Mandarin, they were with other spherical objects. In Japanese they are in their own category, and outside the other animals. Future work will investigate the implications of these differences.

References

- Keil, F. C. (1979). *Semantic and conceptual development: An ontological perspective* (Vol. 1). Cambridge, MA: Harvard University Press.
- Sera, M., Johnson, K. & Kuo, Y. (2013) Classifiers maintain and augment shape-based categorization in Mandarin speakers. *Language and Cognition*.