

Learning Emotional Concepts in a Foreign or a Native Language

Frances, C., De Bruin, A., & Duñabeitia, J. A.

c.frances@bcbl.eu



BASQUE CENTER ON COGNITION, BRAIN AND LANGUAGE

INTRODUCTION

- We remember things with emotional impact better (e.g. content (1), context (2))
- Recognition performance is the same in a foreign and a native language, but there are some differences when information is interrelated as well as in recall (e.g. 3, 4)
- We are less emotional in a foreign language (e.g., 5, 6, 7, 8)

Do we learn more/less in a foreign language context and how does emotionality affect that learning?

METHOD

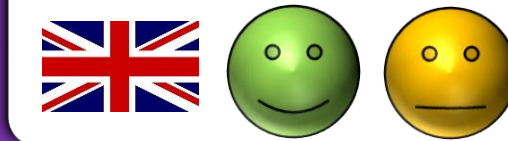
Participants

43 native Spanish speakers
Young adults (M=24 years old)
Intermediate to high level of English

23 participants

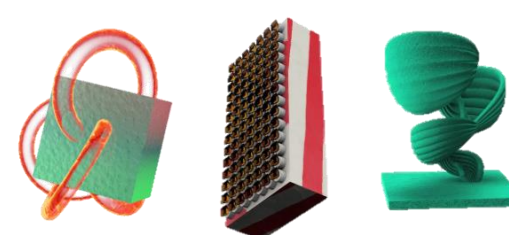
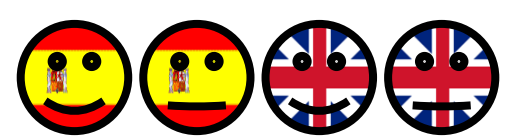


20 participants



Stimuli

- 46 objects
- 92 names, =
- 46 objects and 46 foils



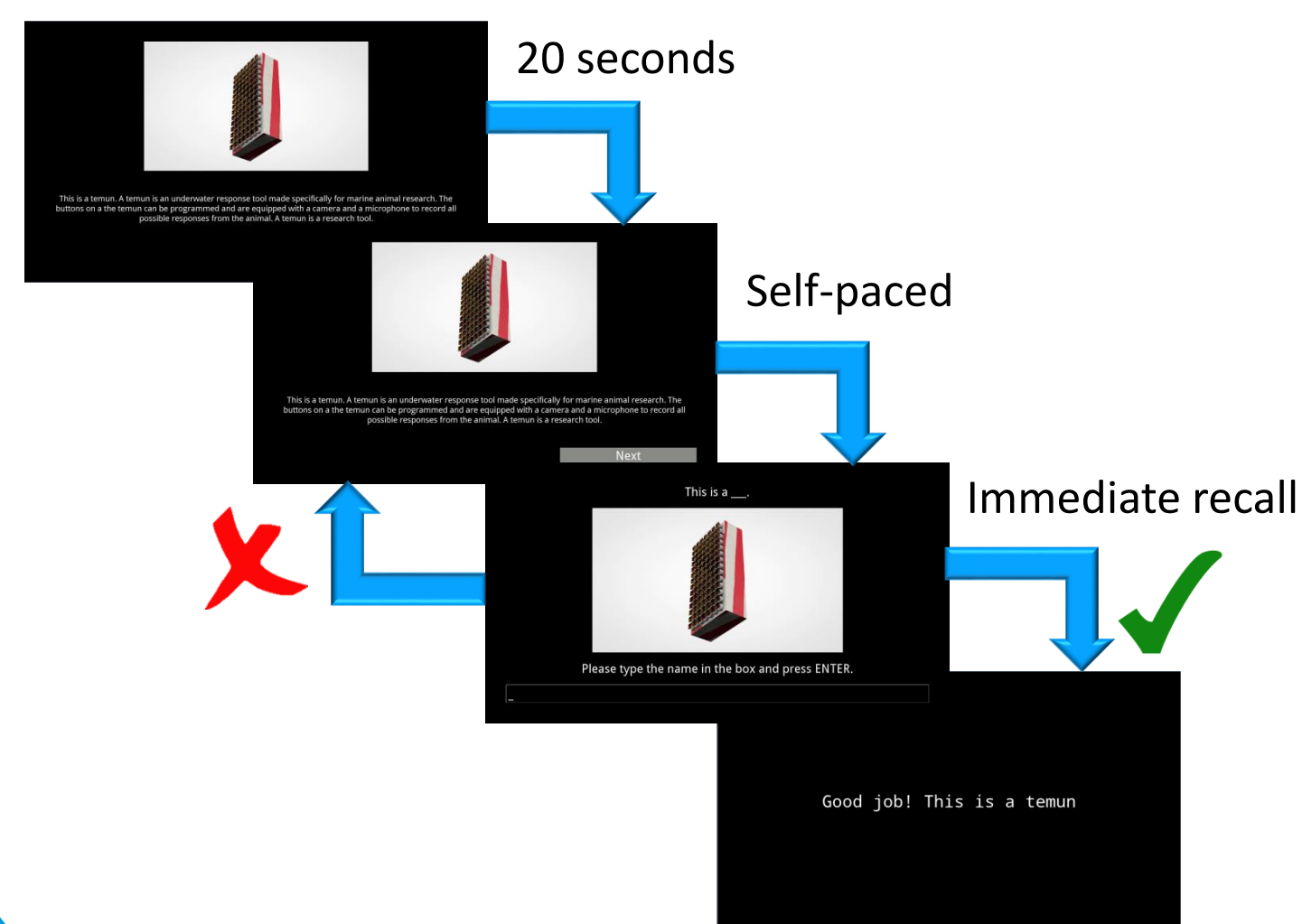
Neutral
This is a **chefio**. The **chefio** is a type of maze that is used in research laboratories. The **chefio** has both closed and open parts so that people can search inside and orient outside. The **chefio** is a laboratory object.

Esto es un **chefio**. El **chefio** es un tipo de laberinto para laboratorios de investigación. El **chefio** tiene partes cerradas y abiertas para que la gente busque por dentro y se oriente al salir. El **chefio** es un objeto de laboratorio.

Positive
This is a **chefio**. The **chefio** is a type of maze used at birthday parties for children. The **chefio** has both closed and open parts providing the enjoyment and thrill of independence as well as safety of seeing their mother. The **chefio** is a game for children.

Esto es un **chefio**. El **chefio** es un tipo de laberinto para fiestas de cumpleaños infantiles. El **chefio** tiene partes cerradas y abiertas para dar el goce y la emoción de la independencia, así como la seguridad de ver a su madre. El **chefio** es un juego infantil.

Learning Phase



Testing Phase

Task 1: Name Recall

Task 2: Old/New Recognition

Task 3: Name Matching

Task 4: Characteristic Matching

RESULTS

Task 1: Name Recall

- Low exact recall (M=1.81).
- Effect of language and of emotionality. **No interaction.**

Task 2: Old/New

- Participants recognize the names of the objects, M=71.6% (6.5%).
- Effect of emotionality and language (marginal), but only in response time. **No interaction.**

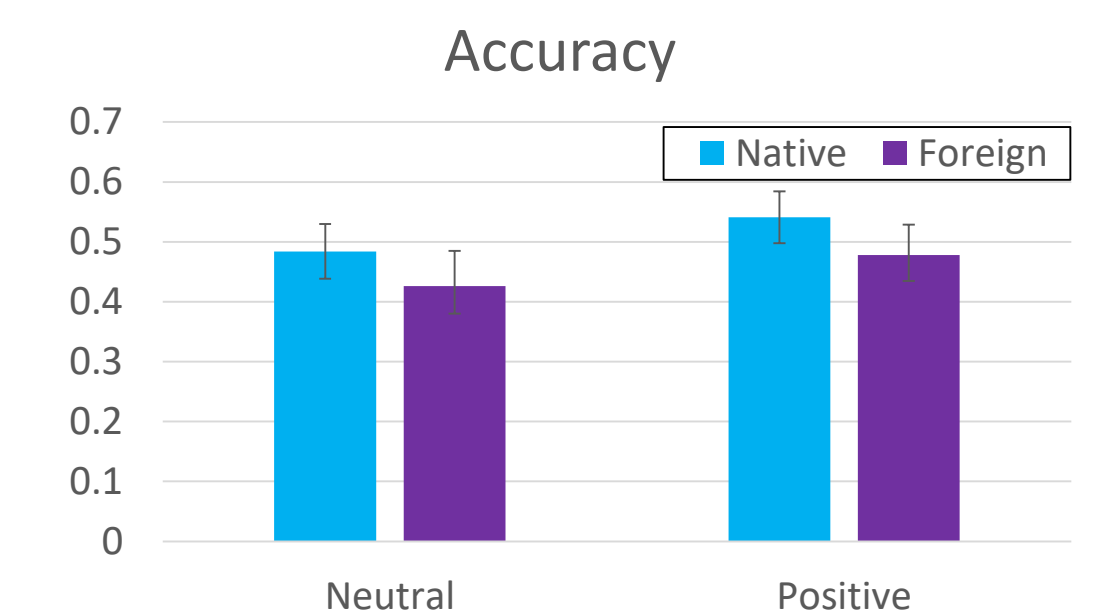
Task 4: Characteristics

- Participants read the descriptions, M=75.7% (11.8%).
- Inconsistent main effects, but **no interaction.**

Task 3: Name Matching

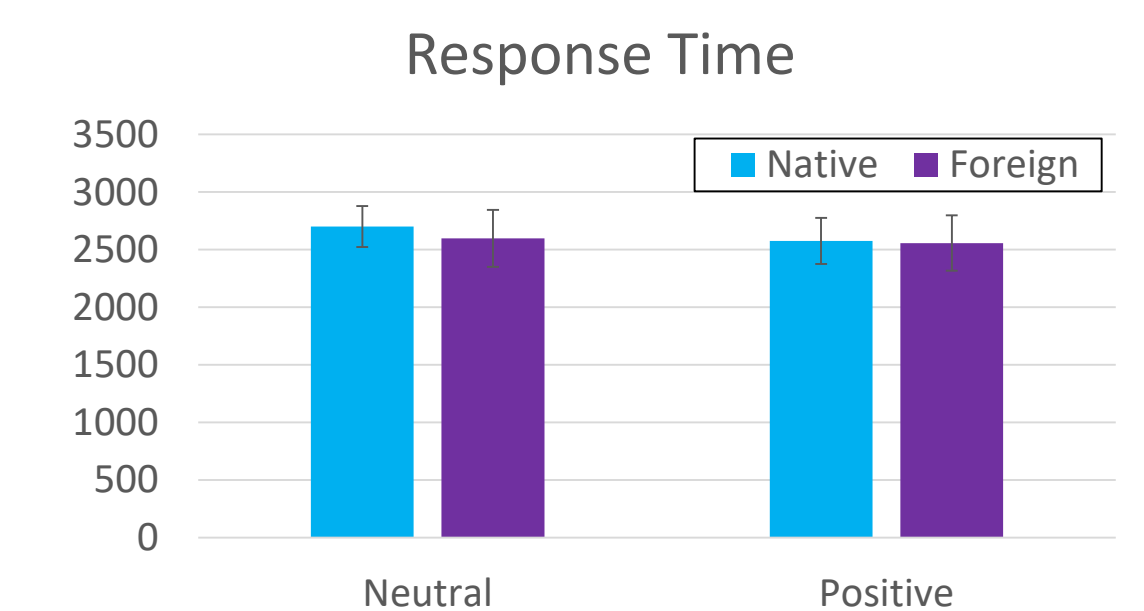
Accuracy

- Higher accuracy for positive than neutral objects, ($F(1, 41) = 5.928, p=.019, \eta^2 = .126$)
- Higher accuracy for native than foreign language ($F(1, 41) = 4.640, p=.037, \eta^2 = .102$)
- **No interaction ($F < 1$)**
 - Bayesian analyses supported that the effects of emotionality were similar in the native and non-native language. ($BF_{01}=3.311, \text{error}\%=.016$)



Response Time

- Faster response to positive than neutral objects ($F(1, 41) = 5.481, p=.024, \eta^2 = .114$)
- No effect of language ($F < 1$)
- **No interaction ($F < 1$)**



DISCUSSION

- Learning new words is better in the native language.
- The emotional context (rather than the emotionality of the word) affects our ability to learn new words
- There is the same emotional impact in a native and foreign language

Are the differences found in foreign language emotionality due to the process of learning, but disappear when concepts are learned in a context that is equally emotional as the one in which we learned our native language?

REFERENCES

- (1) Hamann, S. (2001). Cognitive and neural mechanisms of emotional memory. *Trends in Cognitive Sciences*, 5(9), 394–400.
- (2) Erk, S., Kiefer, M., Grothe, J., Wunderlich, A. P., Spitzer, M., & Walter, H. (2003). Emotional context modulates subsequent memory effect. *NeuroImage*.
- (3) Vander Beken, H., & Brysbaert, M. (2017). Studying texts in a second language: the importance of test type. *Bilingualism: Language and Cognition*, 1–13.
- (4) Nott, C. R., & Lambert, W. E. (1968). Free Recall of Bilinguals. *Journal of Verbal Learning and Verbal Behavior*, 7, 1065–1071.
- (5) Costa, A., Foucart, A., Arnon, I., Aparici, M., & Apesteguia, J. (2014). "Piensa" twice: on the foreign language effect in decision making. *Cognition*, 130(2), 236–254.
- (6) Dewaele, J.-M. (2004). The Emotional Force of Swearwords and Taboo Words in the Speech of Multilinguals. *Journal of Multilingual and Multicultural Development*, 25(23), 204–222.
- (7) Hadjichristidis, C., Geipel, J., & Savadori, L. (2015). The effect of foreign language in judgments of risk and benefit: The role of affect. *Journal of Experimental Psychology: Applied*, 21(2), 117.
- (8) Keysar, B., Hayakawa, S. L., & An, S. G. (2012). The foreign-language effect: Thinking in a foreign tongue reduces decision biases. *Psychological science*, 23(6), 661–668.