

DESCRIBING AFFECT AND EPISTEME

A MIXED METHODOLOGY FOR THE STUDY OF EXPRESSIVE INTERJECTIONS

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AGENDA

- 1 PUCHA AND CHUTA: Two EI OF CHILEAN-SPANISH
- 2 LLM AND CONTEXTUAL-INFORMED ANNOTATION
- 3 WHAT INTERACTION TELLS US ABOUT SPEAKER'S ATTITUDES
- 4 RELATIONSHIP BETWEEN EMOTIVE AND EPISTEMIC STATES
- 5 DISCUSSION
- 6 CONCLUSIONS

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- There's a need for a methodology to describe expressive interjections.
- Interjections are highly attached to the language's culture (Wierzbicka, 1992). An investigation on interjections must be, at first, culture-specific.

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- *pucha* and *chuta* are phonetically similar words that speakers use in very similar contexts to express similar content.
- Native speakers intuitively recognize that they are somehow different, though they don't know exactly why (Rivera, 2022).

MOTIVATION



Diccionario de americanismos

Escriba aquí la palabra

Q

áéíóúüñ

¡pucha! (Sinc. de *púchica*).

- I. 1. interj. *Ho, CR, Co, Ve, Ec, Pe, Bo, Ch, Py, Ar, Ur*. Expresa contrariedad, desagrado. euf; pop. (*;a la pucha chel;* *;la pucha!*; *;la gran pucha!*; *;por la pucha;* *;pucha digo!*; *;puchas*).

FIGURE: *pucha* in Dictionary of Americanisms

MOTIVATION

Alita Durango @ARLUB... · 33min · [#AmorEnAutopista](#)

Wena @jnunezlazcano @rodrigosonidom
Aparezco sólo en los días del amorsh. Si,
soy como Laura Quiñones. Ponganse
"Esperanzas" del grupo Pecos. Sino,
"Beso a beso" de Paloma San Basilio.

1 2 39

Adi Miqueles @Adi... · 26min

En respuesta a @ARLUBONES @jnunezlazcano @rodrigosonidom
Solo romántico chileno! 😊

1 6

Alita Durango @ARLUBONES

En respuesta a @AdiMiqueles @jnunezlazcano y @rodrigosonidom
Ah pucha, no escuché eso

Seguir

MOTIVATION



Diccionario de americanismos

Escriba aquí la palabra

Q

áéíóúüñ

¡chuta!

- I. 1. interj. *Ec, Ch.* Expresa sorpresa, enfado o contrariedad. pop + cult → **espon.**

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AIM OF THIS STUDY

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- ② We need to determine their distribution (where do they appear), function (what do they do), and content (what do they express).

RESEARCH QUESTION

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What is the function and content of pucha and chuta?

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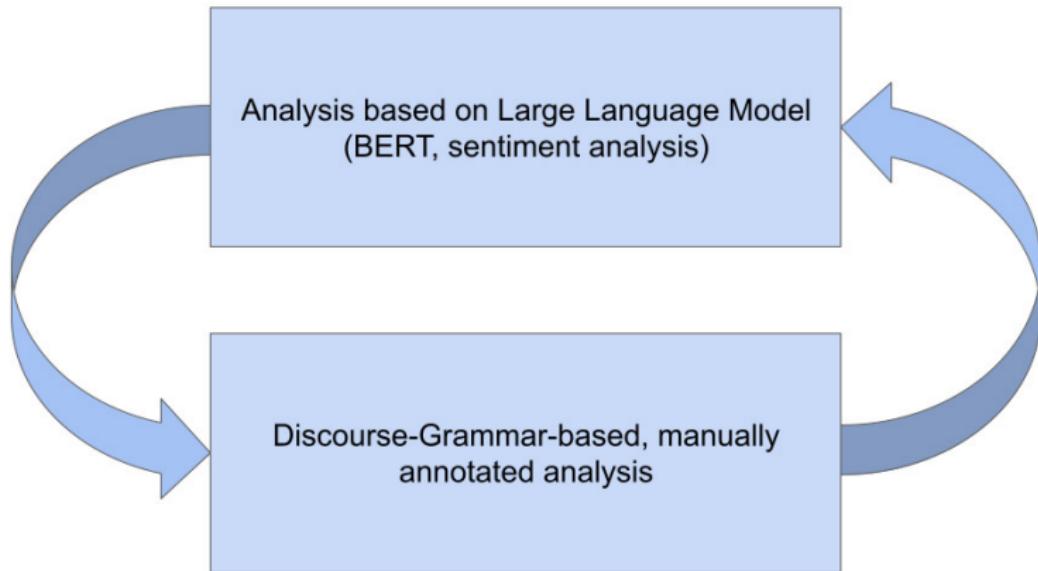
RESEARCH QUESTION 2

What are the semantic differences between pucha and chuta (if any)?

LLM AND CONTEXTUAL-INFORMED ANNOTATION

- We observed the use of these words in interaction creating a corpus from X (aka Twitter). We analyzed the data using manually-annotated labels and computational tools (LLM) that were mutually informed through the process.
- Interjections are highly contextual. They evaluate information that is part of the common ground. In order to study them, we must collect the interactional context in which they are used.

FLOW DIAGRAM OF METHODOLOGY



LLM ANALYSIS

ANNOTADED ANALYSIS

DISTRIBUTION OF INTERJECTIONS

- Both interjections are used primarily as response to an initiation tweet. We observe that even stand-alone utterance either react to some contextual cue or perform a reaction.

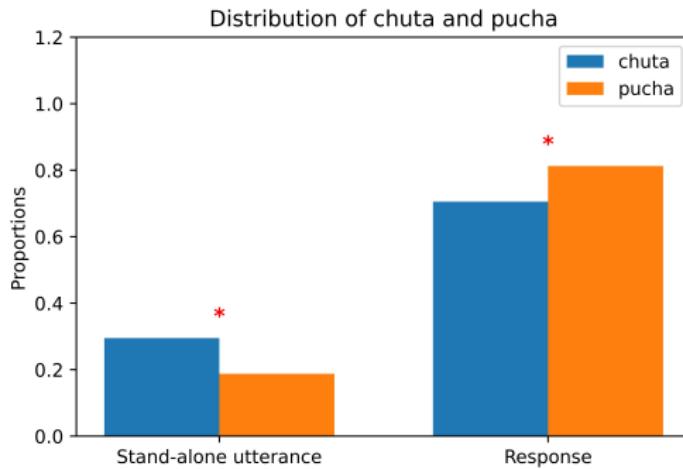
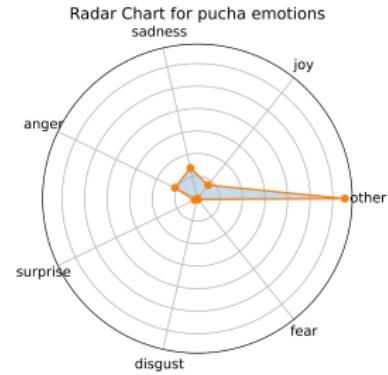


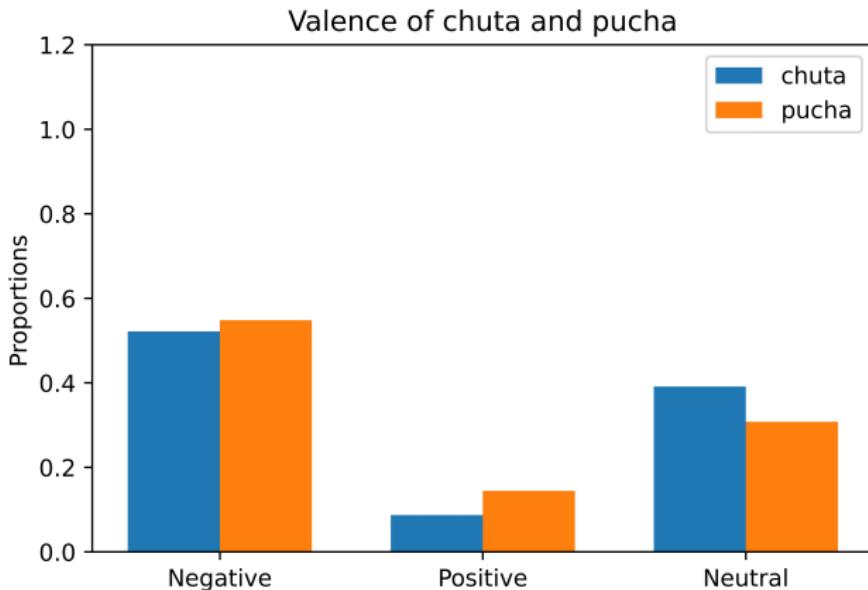
FIGURE: Chilean Corpus Twitter (2023)

EMOTIONS FROM SENTIMENT ANALYSIS

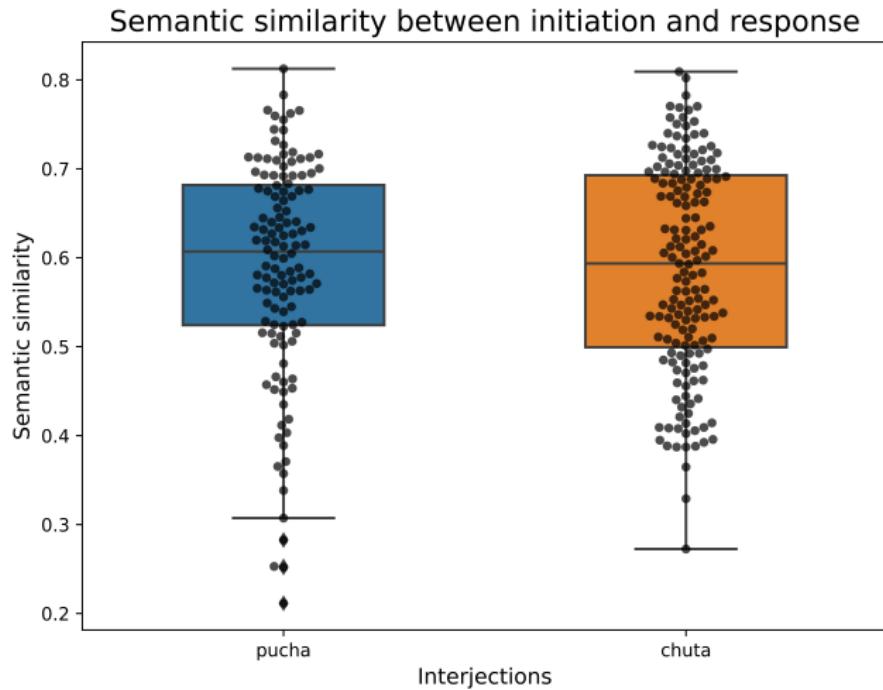


In *chuta* **76.9%** of the tweets are classified as other, followed by anger with **12.9%**. In *pucha* **59.8%** of the tweets are classified as other, followed by sadness with **22.7%** and anger with **9.1%**.

VALENCE CLASSIFICATION



SEMANTIC SIMILARITY ANALYSIS



CATEGORIZATION (FROM SPEAKER'S PERSPECTIVE)

- They have similar distribution.
- Similar emotive value.
- Similar semantic distribution.
- How are they different?

CATEGORY	LABEL		
Action towards addressee's attitude	Affiliative	Disaffiliative	None (Lindström & Sorjonen, 2013)
Agreement with addressee	Agrees	Disagrees	None (Sacks, 1987)
Hedonic valence	Positive	Negative	Neutral (Feldman-Barret, 2011; Gasper et al., 2019)
Knowledge	Knows p beforehand	Didn't know p	Unavailable interpretation (Witschko, 2021)
Expectedness of p	Expected	Unexpected	Unavailable interpretation (Aikhenvaldt, 2012; Mellers et al., 2013)

INTERJECTION DIMENSION LABELING

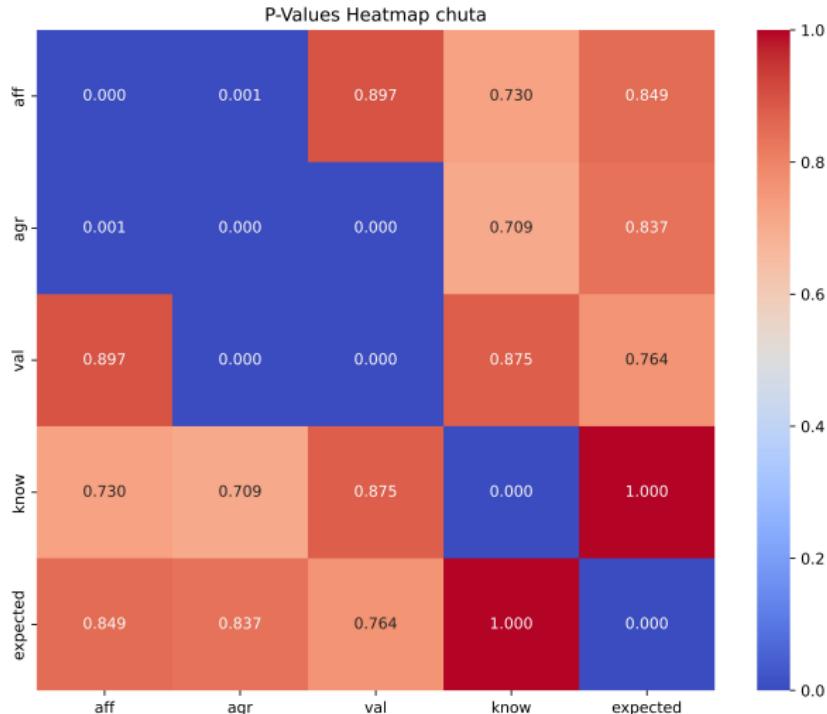


FIGURE: Heatmap of p-values chi-square test for *chuta*

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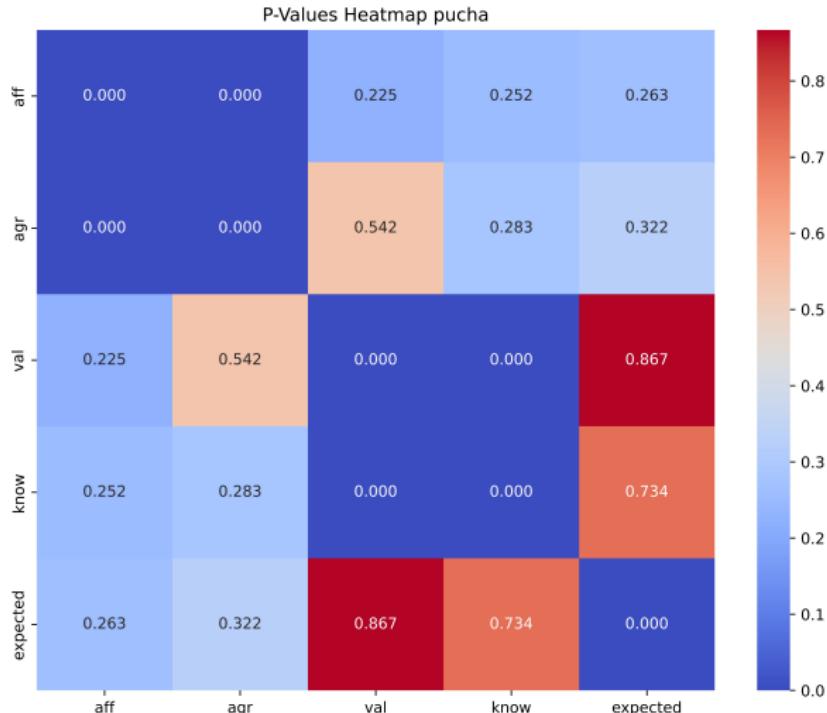


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INSIGHTS FROM THE ANALYSIS

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episteme \implies emotive status

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OBSERVATION

pucha tends to be more emotive, while *chuta* tends to be more epistemic.
Emotive attitudes are a strict subset of epistemic attitudes (Rett, 2021).

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- In 94% of the cases, the truthness of the evaluated proposition is not challenged nor denied.
- 79% occurrences of chuta and 98% of pucha have negative reading.
- 98% occurrences of chuta evaluate the proposition as unexpected. Only 21% occurrences of pucha have this reading.

DISCUSSION

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- They serve to acknowledge that the proposition that is shared in interaction was not part of the speaker's ground (beliefs, desires, knowledge).

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- Lexical items as expressive interjections contain information regarding affect (a subsystem of emotions) (Feldman-Barrett, 2011/2018) and epistemic states of surprise (Mellers et al., 2013).

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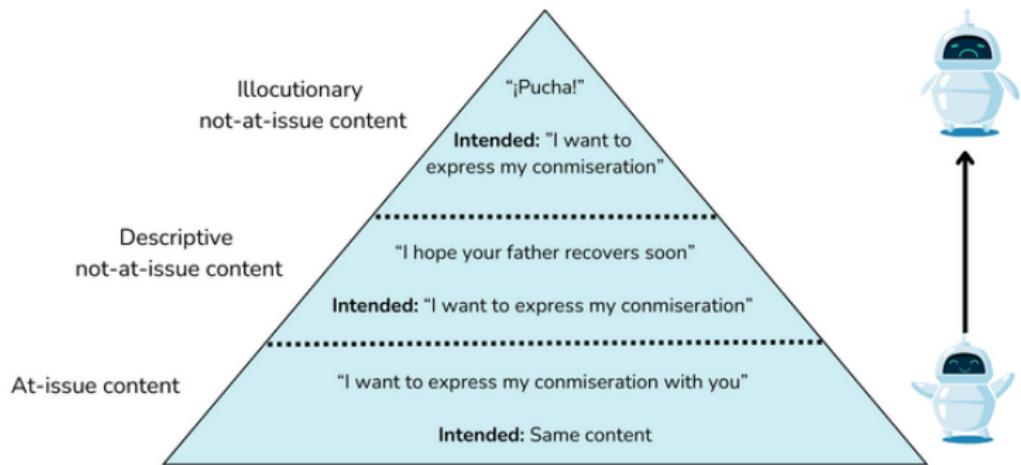
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- ② Interjections are fundamental to interpret interactants' set of beliefs, and their attitude towards that information.
- ③ Computational tools like LLM only can capture part of the (epistemic, emotive) meaning, specially when high contextual cues are involved.
- ④ The methodology is applicable to any other language, as the labels are motivated by cross-linguistic evidence. Nonetheless, the analysis of such labels must be cultural-specific.

LEVELS OF SEMANTIC MEANING



LIMITATIONS

Recent restrictions to web scraping in X (a.k.a. Twitter).

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Elon Musk
@elonmusk · [Follow](#)



To address extreme levels of data scraping & system manipulation, we've applied the following temporary limits:

- Verified accounts are limited to reading 6000 posts/day
- Unverified accounts to 600 posts/day
- New unverified accounts to 300/day

1:01 PM · Jul 1, 2023



FUTURE DIRECTIONS

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- ③ Use of generative models (like GPT) to observe how they would use different interjections.
- ④ Use linguistic data to model possible hierarchies between epistemic states and emotive states.

THANK YOU

Thank you for your attention.

ACKNOWLEDGEMENTS

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