# Stable intuitions across presentation styles:
Effects of modality, formality, and speaker type on code-switching judgments

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Es un sueño cumplido compartir con ustedes this way. Les amo forever!

It's a dream come true
to share this with you all this way.
I love you forever!

Es un sueño cumplido compartir con ustedes this way. Les amo forever!

Code-switching contexts

- Code-switching (CS) has long been described as an inherently oral practice, emerging "in the flow of natural conversation" (Timm, 1975, p. 473)

- Decades of research have either echoed this description or have been silent about CS a written phenomenon (e.g., Bentahila & Davies, 1983; Broersma & de Bot, 2006; Muysken, 1997; Poplack, 1980; among many others)

- Is this still the case? In an era of digitally mediated bilingual communication, maybe not…

Kali Uchis's Instagram feed (2023-2025)

kaliuchis ✔️ …

146 posts 8.3M followers 444 following

WORLD PEACE.
🔗 kaliuchis.lnk.to/Muevelo

🧑 Followed by bkoronkiewicz

kaliuchis countdown to Orquídeas ! ¿ ustds k creen k sigue while we wait, which song on the track-list do u want Now…📀💿📢🐋🐬🐟⛲⏳

kaliuchis mirror selfie series 🕊️ bueno ya k han tenido una semana pa vivir con orquídeas un pokitito ¿what song u claiming ?

kaliuchis thank you all for selling out the North American Sincerely, tour!!! extra special thank u to my dancers & vocalists who share the stage with me every night, the artists who show up for me & all my team & crew who keep this going no matter what. Nos vemos pronto en Latino America 💋 & I can't wait to share all the behind the scenes in the Sincerely, film soon 😇

kaliuchis 😇😇for my final act of self love this year i will release this song bcoz prior to tonight it was a demo leaked against my will!!!🌾🌾🌾🌾🌾🌾k disfruten y k la persona k se detuvo a leer esto Dios lo proteja siempre a ti y tu familia Amén 🫶

kaliuchis ORQUÍDEAS JAN 12 DE ENERO only 3 weeks away..nos vemos en el año nuevo🥺 segura k la persona k se detuvo a leer esto Dios lo proteja siempre a ti y tu familia Amén 🤍

kaliuchis ORQUÍDEAS, my second Latin album, mi segundo álbum en español OUT NOW🫠🫠🫠🫠🫠fav song so far ?

kaliuchis first cover of the year & first VOGUE cover🌱 Red Moon in Venus next week🌱 k tu niña interior viva muy orgullosa del mujeron k eres 🤍 so much to celebrate !! gracias

kaliuchis Muy buenos días 🕊️ Our first #1 album🥺 grateful for the constant growth, in every way🫰& for all of you & your well wishes, in a world full of people that seek to tear others down. if anyone's proud I hope baby will be so proud of all we are accomplishing together while in my belly.

kaliuchis 24 hours in Miami & Orquídeas wonnnn gracias billboards! en camino a los Latin Grammys next 🤍 muy agradecida a ustedes mis kuchis siempre…💋

kaliuchis feliz año hermanas🍵 may all your prayers be granted ☁️☁️☁️☁️☁️☁️

kaliuchis nunca me sentí aceptada en Latino America ni en los Estados Unidos , pero por la primera vez ustedes me hicieron sentir tan amada..y por eso les doy mil Gracias. yo desde niña been orgullosamente colombiana, y es un sueño cumplido poder compartir con ustedes this way. Les amo forever
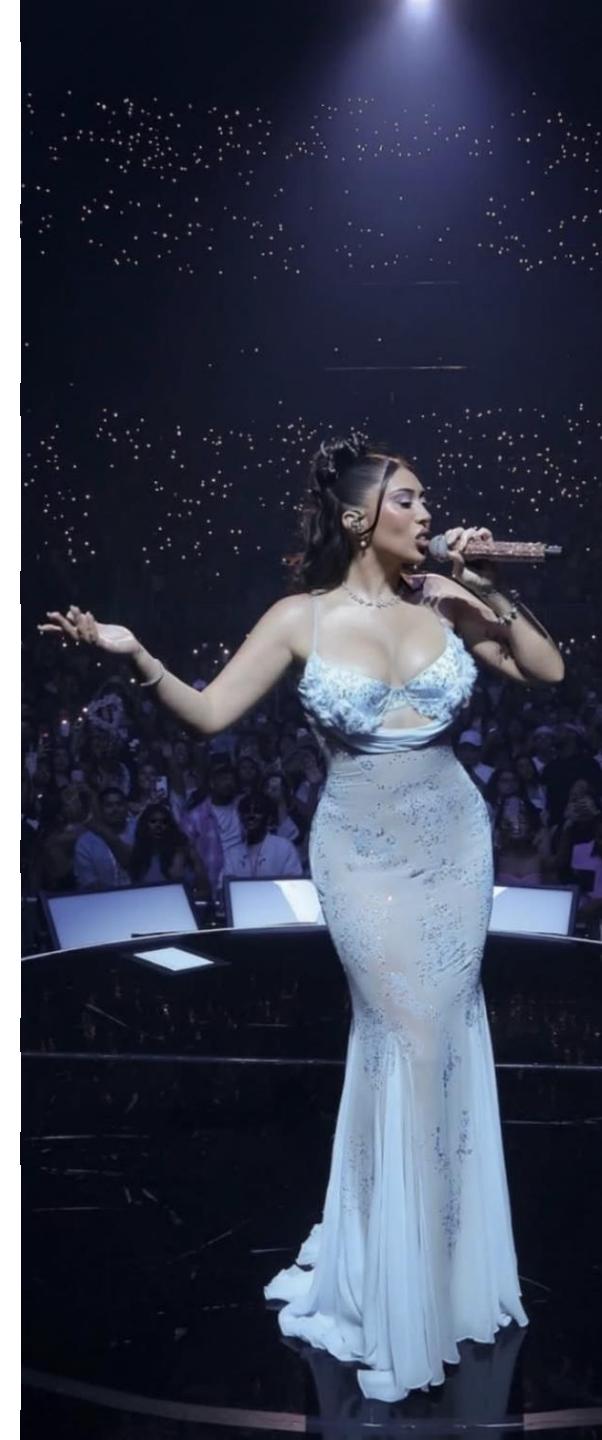
Do our research methods reflect bilingual reality?

- Although CS is possible in any context, real-world CS is often associated with specific situations
  - Spoken, informal, and in specific contexts with certain people
- Methodologically, Acceptability Judgment Tasks (AJTs) are widely used in CS research that targets structural components
  - Experimental stimuli are often written, formal, and decontextualized
- Key tension: grammatical knowledge vs. presentation effects

FOCUS

- **Do presentation variables influence judgments of CS?**
- In this study we focus on:
  - Modality (i.e., written vs. oral presentation)
- And within each of those modalities, we target specific differences in presentation style:
  - Written = formal vs. informal
  - Oral = heritage bilingual vs. late L2 speaker

BACKGROUND: *AJTs in bilingualism*

- AJTs are foundational to experimental syntax, and by extension structural approaches to CS

- Empirical work (Schütze, 1996; Schütze & Sprouse, 2014) has demonstrated that AJTs:
  - Reliably reflect speakers' grammatical knowledge
  - Are robust to task-related noise when properly designed

- However, applying AJTs to bilingual grammars can bring about additional questions
  - As Grosjean (2008) emphasizes: Methodological choices shape what aspects of bilingual competence we observe

BACKGROUND: *CS methods*

- Situated within broader methodological issues in CS (González-Vilbazo et al., 2013; Gullberg et al., 2009)
- Big picture
  - **Ecological validity vs. experimental control:** CS is naturally occurring, and experimental tasks may constrain it in unique ways
- More CS-specific
  - **Production:** Some methods rely on externally induced switches
  - **Participant-related confounds:** Variation in bilingual experience and stigma toward CS
  - **Task and presentation effects:** Decontextualization and presentational choices can shape data

BACKGROUND: *Modality and CS*

- Written CS is a well-attested bilingual reality, particularly in digital communication (e.g., Montes-Alcalá, 2024)

- Research shows that written CS mirrors spoken CS in:
  - Structural aspects
  - Discourse and pragmatic patterns

- From a methodological perspective, modality has been explicitly tested in AJTs (Koronkiewicz & Ebert, 2018)
  - Found no major differences in judgments between written and oral CS stimuli
  - Limitation: Modality was tested between participants, leaving open the question of whether the same bilinguals show stable judgments across modalities

BACKGROUND: *Other presentational variables?*

- CS is sensitive to register and formality, and is often associated with informal, interactional contexts (Poplack, 1980; Zentella, 1997)

- Bilingual experience and speaker type also matter
  - CS is more strongly associated with heritage bilinguals than with late L2 speakers (Poplack, 1980; Zentella, 1997)

- From a methodological perspective, to our knowledge, no AJT studies have explicitly manipulated:
  - Formal vs. informal presentation in written CS stimuli
  - Speaker identity (heritage vs. late L2 bilingual) in oral CS stimuli

RESEARCH QUESTIONS

1. Does **modality** affect CS acceptability judgments?

2. In a written AJT, does **formality of writing style** affect judgments?

3. In an oral AJT, does the **bilingual background of the speaker** affect judgments?

METHODS: *Participants*

- Early Spanish-English bilinguals
- Residing in New York, New York
- Preliminary sample: *n* = 15
  - (11 female; 4 male)
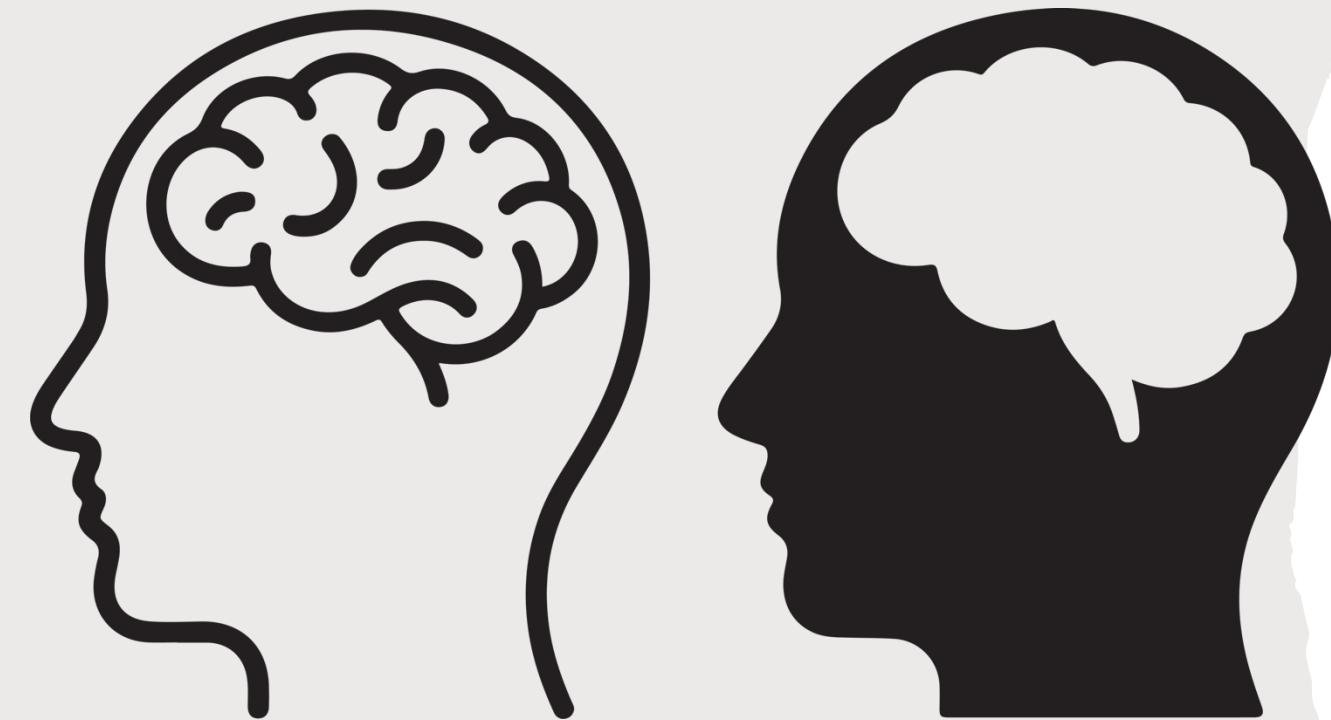
		M	SD
Age		25.2	8.5
Age of acquisition	English	5.2	3.5
	Spanish	0.5	1.1
Self-rating: Speaking	English	5.7	0.8
	Spanish	5.3	1.0
Self-rating: Understanding	English	5.9	0.5
	Spanish	5.7	0.5
Self-rating: Reading	English	5.7	0.8
	Spanish	5.1	0.9
Self-rating: Writing	English	5.8	0.8
	Spanish	5.0	1.0
LexTALE score	English	50.1	5.9
	Spanish	61.6	9.8
BLP score		14.9	34.6

METHODS: *Procedure*

ONLINE AJT

VIA QUALTRICS
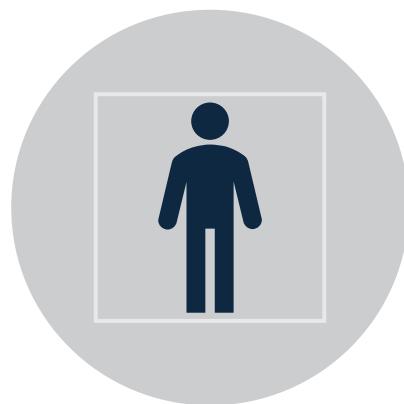
WITHIN-PARTICIPANT DESIGN

COUNTERBALANCED
MODALITY ORDER

SPECIFIC PRESENTATION VARIABLES
RANDOMIZED WITHIN EACH

METHODS: *Stimuli*

- 80 items total in AJT; 64 items under analysis
  - 3 different types of switch structures with paired grammatical and ungrammatical stimuli; half Spanish-to-English and half vice versa

SWITCH TYPE	EXAMPLE
Pronoun	This morning **they cleaned** *la cocina y el comedor*.
	* This morning **they *limpiaron*** *la cocina y el comedor*.
***have/haber* Auxiliary**	Her friends ***han visitado*** *muchos países durante el verano*.
	* Her friends **have *visitado*** *muchos países durante el verano*.
Negation	The library **doesn't open** *los domingos por la mañana*.
	* The library **doesn't *abre*** *los domingos por la mañana*.

METHODS: *Stimuli*

- 4 presentation formats
  - written + formal
  - written + informal
  - oral + heritage bilingual speaker
  - oral + late L2 bilingual speaker
- Fully balanced design
  - 4 versions of survey; each participant judged all items, but in different formats

WRITTEN + FORMAL

Her friends have visitado muchos países durante el verano.

1 2 3 4 5 6 7

Completamente Inaceptable ○ ○ ○ ○ ○ ○ ○ Completely Acceptable

ORAL + HERITAGE SPEAKER

▶

1 2 3 4 5 6 7

Completamente Inaceptable ○ ○ ○ ○ ○ ○ ○ Completely Acceptable

WRITTEN + INFORMAL

her friends have visitado muchos paises durante el verano

1 2 3 4 5 6 7

Completamente Inaceptable ○ ○ ○ ○ ○ ○ ○ Completely Acceptable

ORAL + LATE L2 SPEAKER

▶

1 2 3 4 5 6 7

Completamente Inaceptable ○ ○ ○ ○ ○ ○ ○ Completely Acceptable

OVERALL RESULTS: *Oral vs. Written*
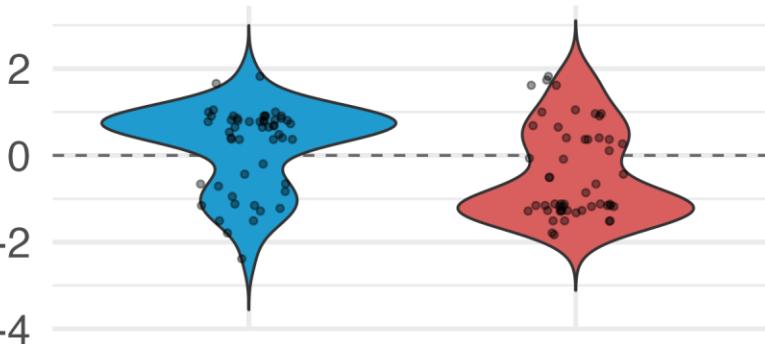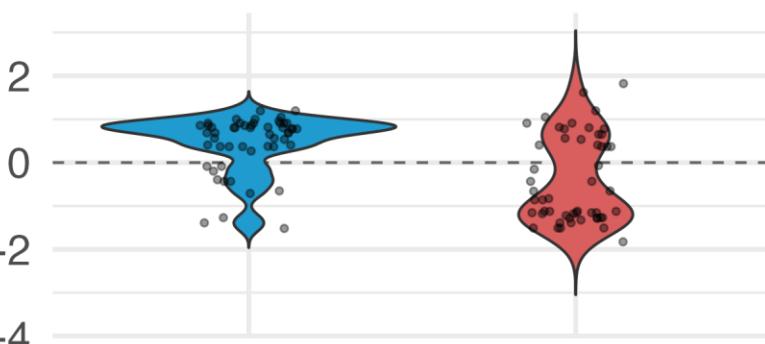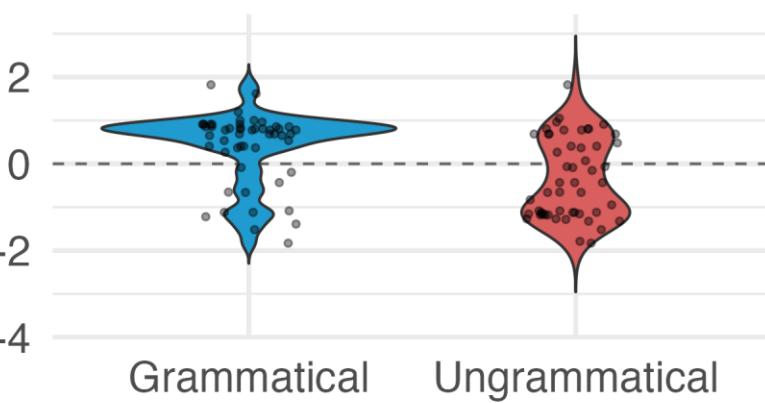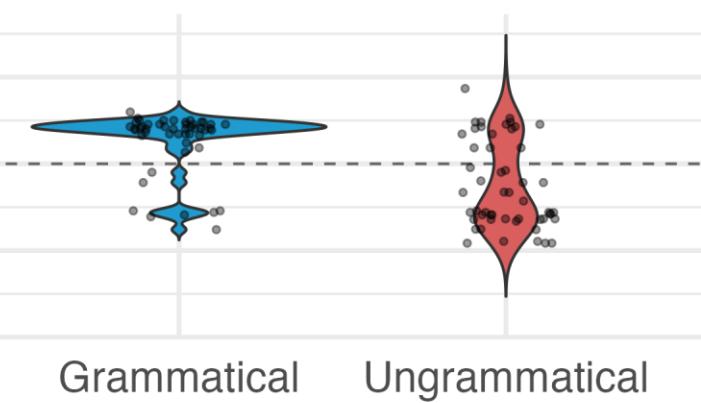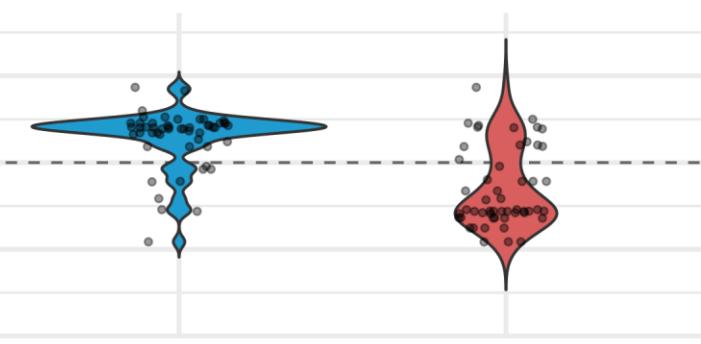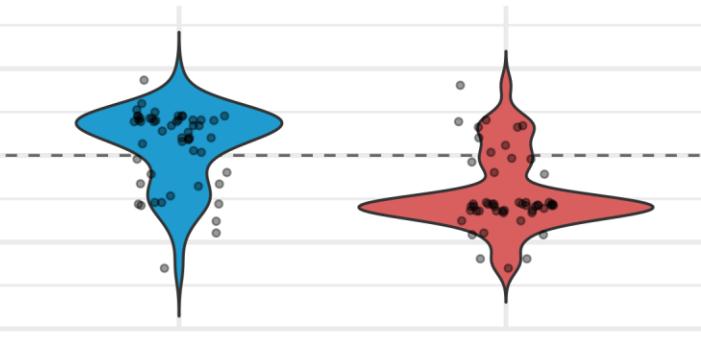
WRITTEN RESULTS: *Formal vs. Informal*
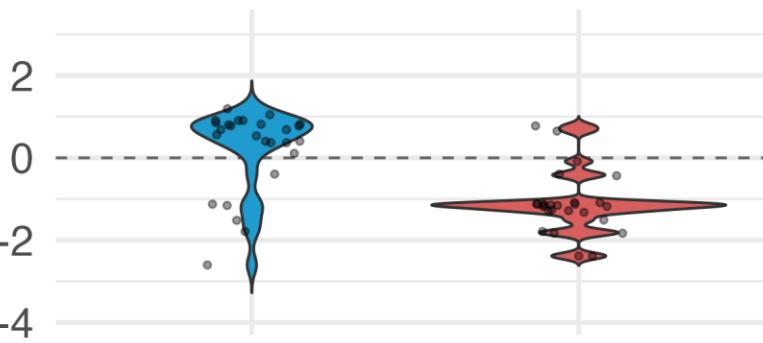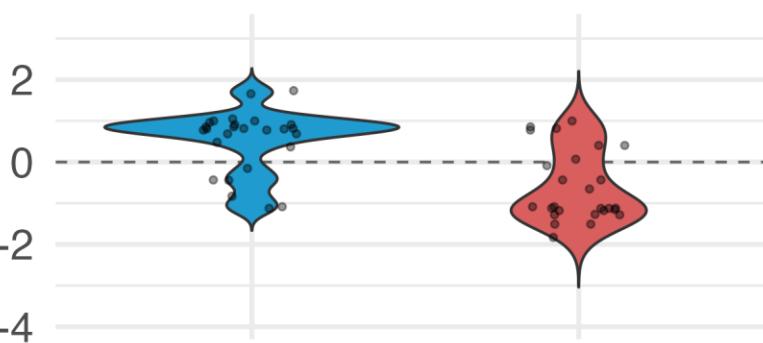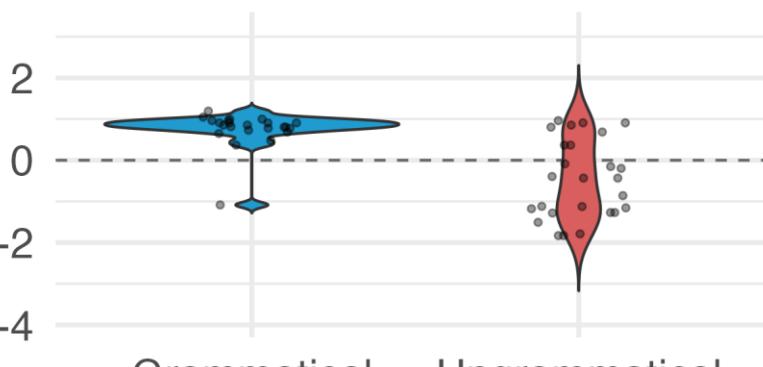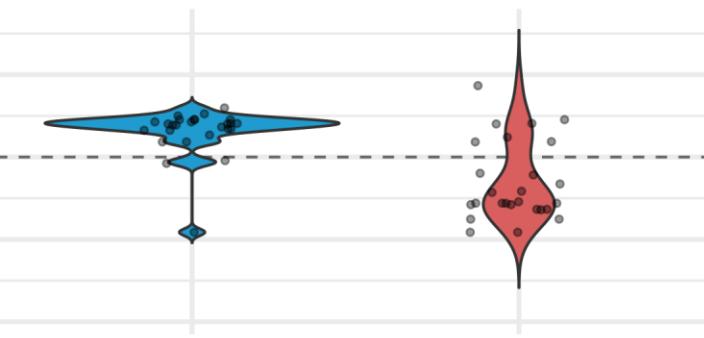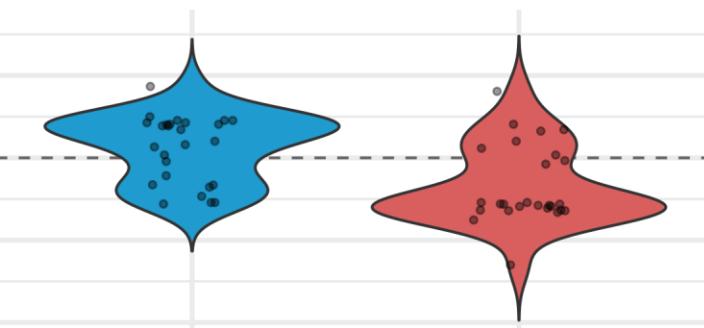
ORAL RESULTS: *Heritage vs. Late L2*
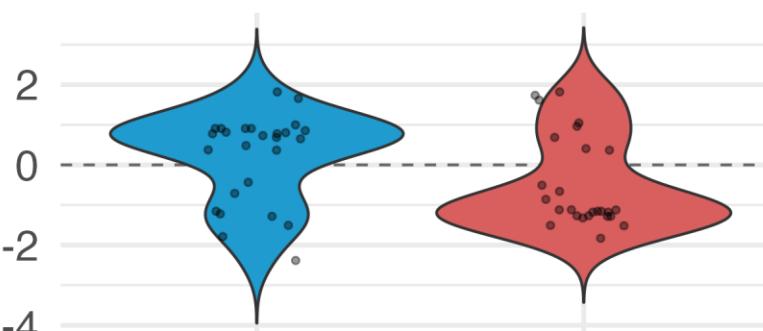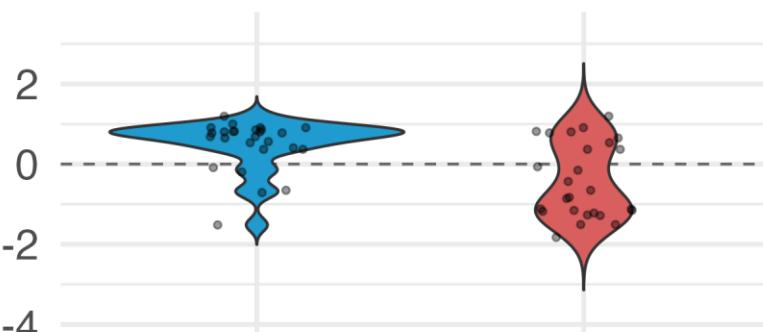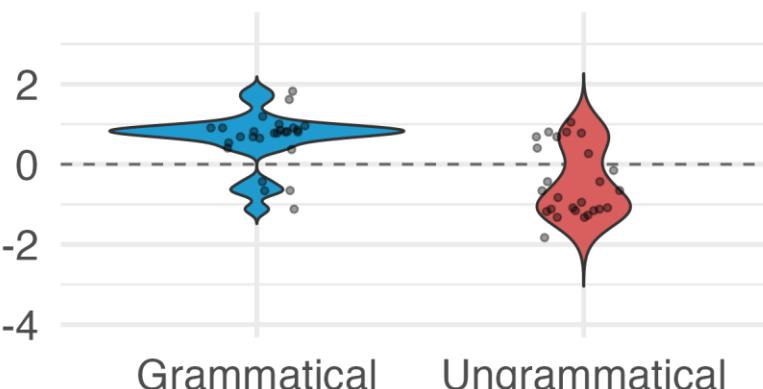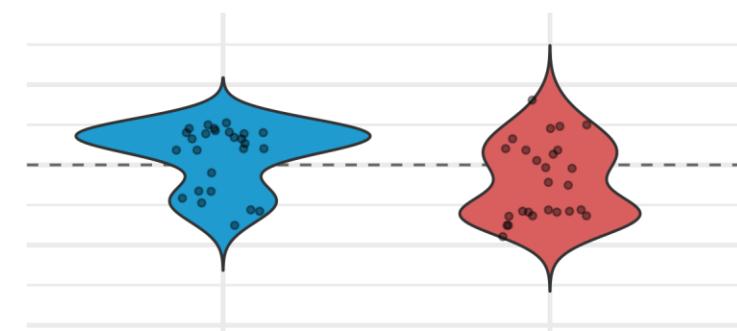
Statistical analysis summary

- Bayesian linear regression on z-scored acceptability ratings
- Written vs. Oral
  - **No reliable effect** of modality
  - β = −0.10, 95% CrI [−0.26, 0.06]
- Written AJT only: Formal vs. Informal
  - **No reliable effect** of writing style
  - β = 0.02, 95% CrI [−0.21, 0.25]
- Oral AJT only: Heritage vs. Late L2 speaker
  - **No reliable effect** of speaker type
 - β = −0.02, 95% CrI [−0.23, 0.19]

RESEARCH QUESTIONS

1. Does **modality** affect CS acceptability judgments?
    - **NO**

2. In a written AJT, does **formality of writing style** affect judgments?
    - **NO**

3. In an oral AJT, does the **bilingual background of the speaker** affect judgments?
    - **NO**

Limitations and future directions

- Relatively small sample drawn from a single bilingual community
  - Currently collecting more data, including cross-community comparisons
- Initial, limited manipulation of formality and speaker type
  - Future work could expand presentation variables to more ecologically rich formats with much more salient differences
  - Incorporate features of digitally mediated communication, such as: emoji, more varied layout and typography, visual or graphical context

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kali

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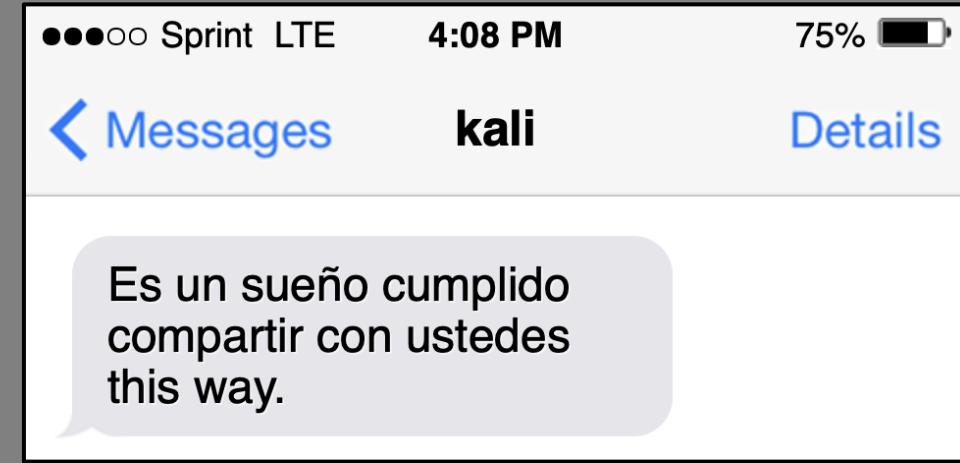
kaliuchis es un sueño cumplido compartir con ustedes this way 🤍🙏✨

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Conclusion

- Lack of a finding is great for this type of study
  - Evidence that even varied methodological choices can produce the same result
- Still, ecological validity remains important; these results do not argue otherwise
  - For example, it remains an open question whether the stability reflects:
    - Everyday experience with CS across formats, or
    - Participants' ability to abstract away from presentation in AJTs
- Crucially, within an AJT, this is further evidence that CS grammatical intuitions can be quite stable regardless of methodological choices
  - Promising practical applications for such CS research

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