Ticuna participants (n = 36)

Secoya participants (n = 23)

attention_calling (n = 764) | attention_maintaining (n = 437)

Proportion Responses

Puzzle Piece Location

Demonstrative ■ iko ■ jao ■ jeko
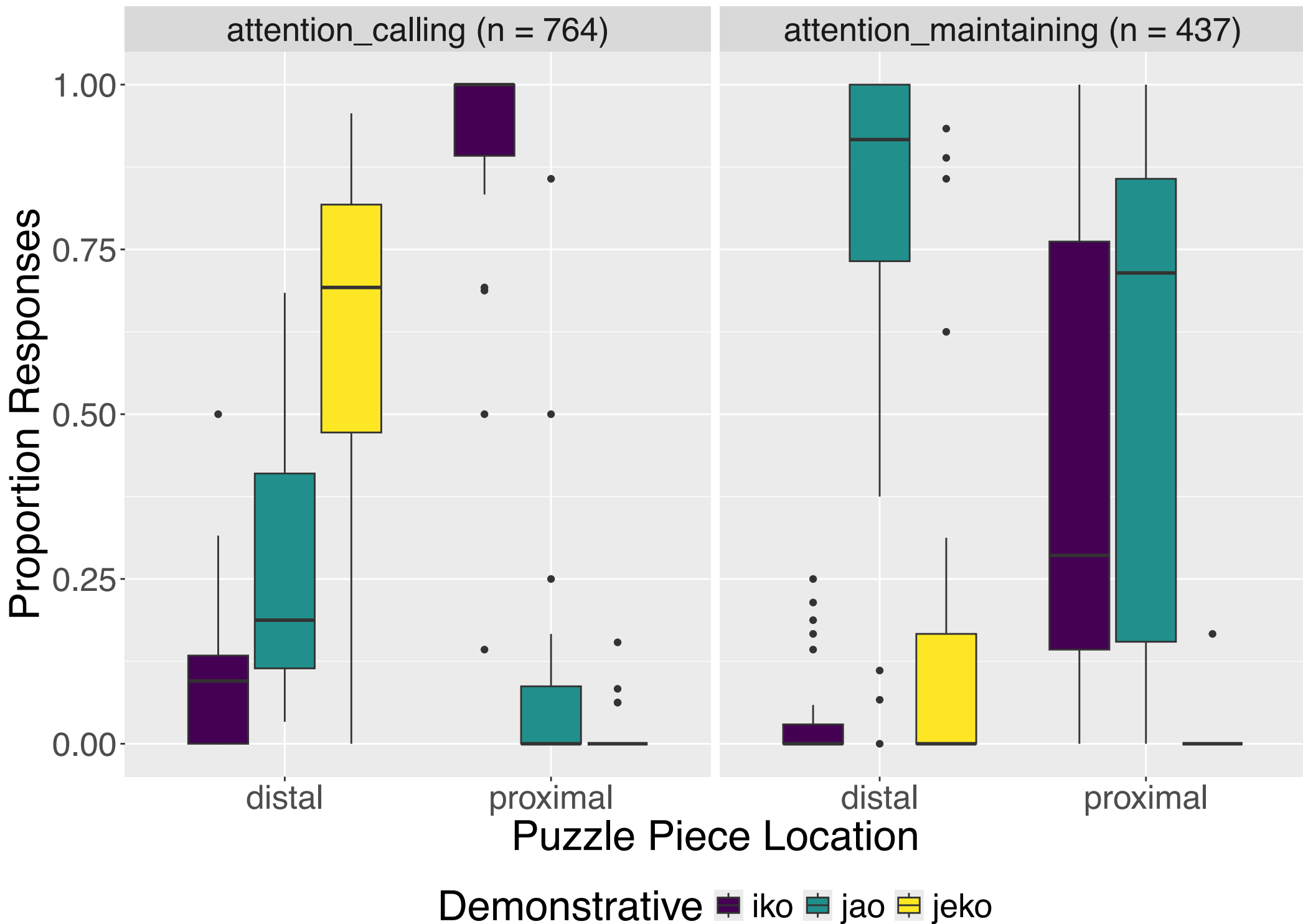
Joint attention matters more than space to demonstrative use in Ticuna and Secoya

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Joint attention matters more than space for demonstrative use in Ticuna and Secoya

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Introduction

- Demonstratives – e.g., *this/that, este/ese/aquel* – are a central tool for managing attention in face-to-face interaction [1, 2]
- This suggests that **joint attention** – whether the speaker and addressee(s) are attending to the same referent – will condition which demonstratives people use
- Some, but not all, languages show joint attention effects [1-5]
- Therefore we:
  1. Hypothesize that joint-attention effects are more prominent in languages with more demonstrative terms.
  2. Test this hypothesis in two Amazonian languages:
     Secoya: 3 demonstrative terms [10, 11]
     Ticuna: 4 demonstrative terms [6-9]
- We focus on exophoric demonstratives (pick out referent in surroundings), not anaphoric (pick out referent from prior discourse).
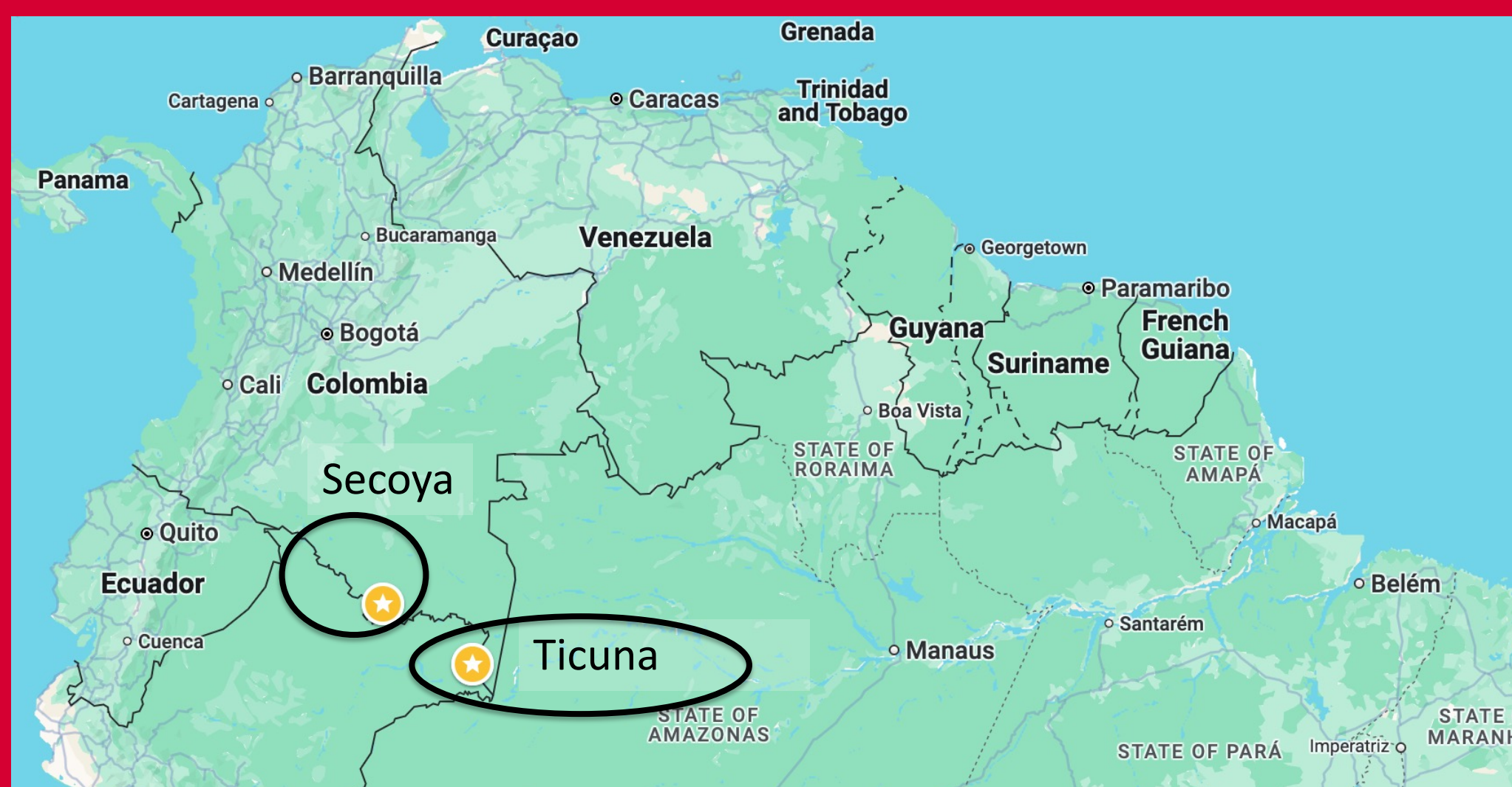
Figure 1: Location of Secoya and Ticuna territory. Stars mark field sites

Ticuna Language Background

Ticuna (ISO: tca) is an isolate
- Spoken on lower Amazonas/upper Solimões in Peru, Brazil, Colombia
- 45,000 – 70,000 speakers primarily in Brazil [7]
- This data collected in Ticuna town of Cushillococha, Peru
- 90-95% of Cushillococha residents speak Ticuna; other 5-10% are non-Indigenous
- Most speakers are bilingual in Spanish – almost none in Portuguese

Demonstrative system of Ticuna [6-9] includes:
1. Proximal *ñaa* [IPA ɲa⁴a²]: referent near speaker
2. Medial *ngea* [IPA ŋe³a²]: referent between speaker and addressee
3. Proximal *yea* [IPA ɟe³a²]: referent far from speaker
4. Addressee-centered *ngema* [IPA ŋe³ma²]: near addressee
   - Also used for invisible referents

Secoya Language Background

Secoya (ISO-639: sey) is a Western Tukanoan language
- Spoken in Ecuadorian and Peruvian Amazonia
- About 700 speakers in Peru near northern part of Putumayo River
- This data collected in San Antonio del Estrecho, Peru – town near Secoya villages
- 100% of population speak Secoya, but Spanish bilingualism emerging

Demonstrative system of Secoya includes:
1. Proximal *i-*: referent near the speaker
2. Medial *hã*: referent is near the addressee
3. Distal *he*: referent is far from both the speaker and the addressee
- Relative location of speaker and addressee influence demonstrative use [10, 11].

Participants

- All participants were bilingual in Ticuna/Secoya and Spanish
- 23 Secoya participants aged 18 to 57
- 36 complete Ticuna participants aged 18 to 81
- Completed Bilingual Language Profile (BLP) orally [12]
- All participants scored as Indigenous language dominant on BLP

Task

- Participant and experimenter assemble jigsaw-style puzzle
  - Sit at opposite ends of 1.5m mat
  - Barrier (black line in Figure 2) 50cm from participant
- Participant has image of complete puzzle
- Experimenter asks participant to identify each puzzle piece on mat, with questions such as "Which one has the dog's tail?"
  - Experimenter's questions belong to three trial types – Table 1
- After participant identifies piece, Experimenter places it on image of complete puzzle
- Participants trained to respond to all questions using demonstratives

Figure 2: Secoya participant (left) and experimenter (right) perform task

| Trial Type	Example	Count
Finding	Exp: "Which one has the dog's tail?" Part: "That one"	20
Confirming	Exp: "You mean this one?" Part: "Yes, that one"	13 (8 in Correcting sequences)
Correcting	Exp selects wrong piece, "This one?" Part corrects: "No, that one" Exp searches again Exp *Confirms*	8
Total		41

Table 1: Trial types in experimental script

Trial Types

- Finding and Correcting trials both function to *Call Attention*
  - From neutral state for Finding, from other referent for Correcting
- Confirming trials function to *Maintain Attention*
  - On a referent which both speaker & addressee are already attending to

Results

- Analyze only trials with demonstratives (not, e.g., "Yes")
- Figures 3 and 4 display proportion use of each demonstrative, trial type and puzzle piece location, across all participants
  - See handout for boxplot representing variance
 - "Proximal" = Piece <50cm from speaker, "Distal" = Piece >50cm from speaker

Figure 3: Ticuna participants (n = 36)
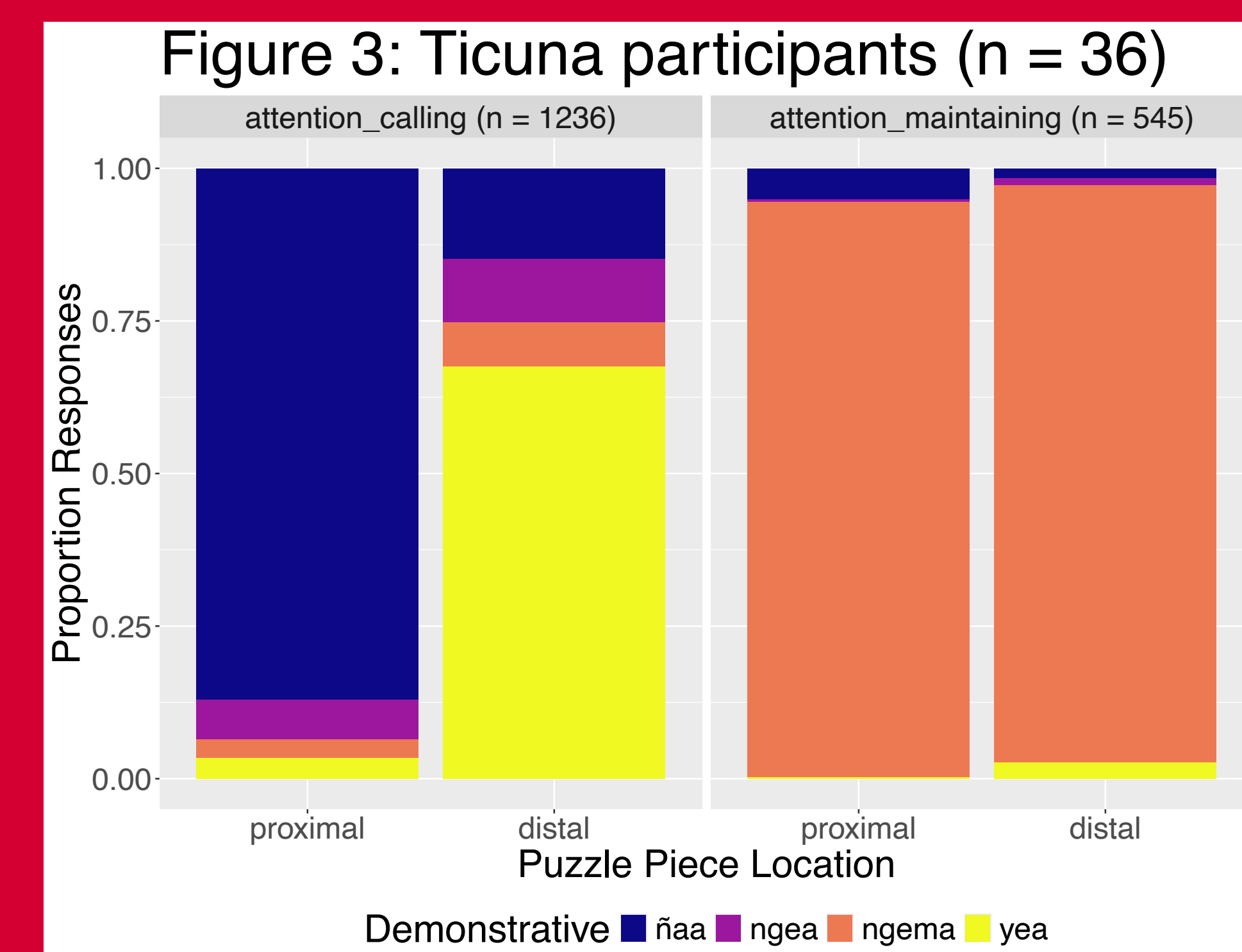
When *Calling Attention*, participants are sensitive to location
- Rely on proximal demonstrative for objects <50cm
- Vary between all demonstratives, but mostly distal, for objects >50cm

Figure 4: Secoya participants (n = 23)

When *Maintaining Attention*, **location matters much less**
- Rely on "near addressee" term for both proximal and distal space
- In Ticuna >90% of responses are Addr-Centered -- even for pieces in reach of speaker
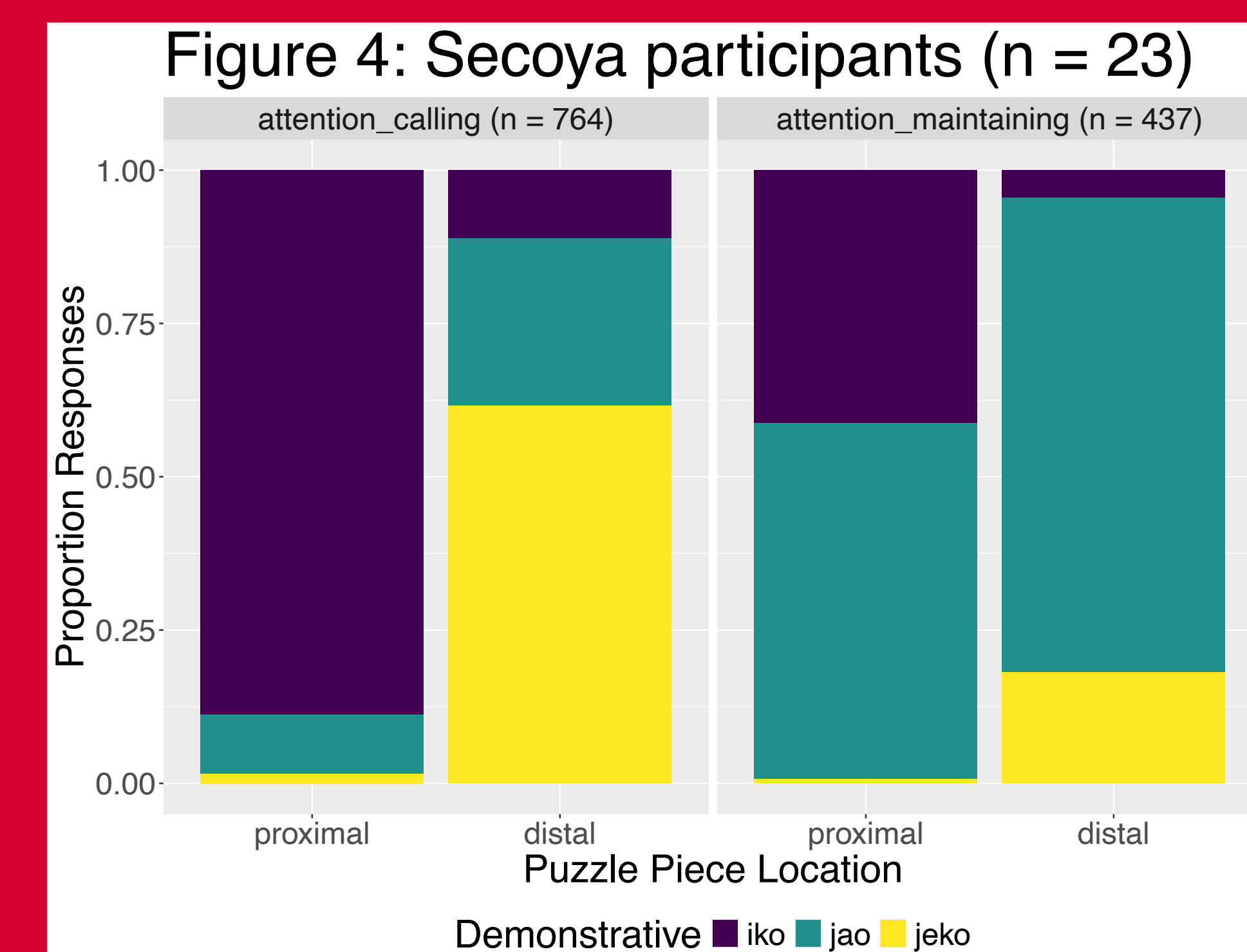
Discussion

- In both Ticuna and Secoya, the effect of **joint attention** outweighed the cross-linguistic tendency to use speaker-proximal demonstratives for referents in arm's reach (<50cm)
  - Maintaining attention → Use primarily **addressee-proximal**
- Attention mattered for both Ticuna and Secoya speakers
  - But the effect was much stronger in Ticuna than in Secoya
- Following original hypothesis, we interpret this finding as evidence that joint attention effects are **more prominent** in languages with **more demonstratives**

Acknowledgments