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Relating production and perception of L2 tone

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1. INTRODUCTION

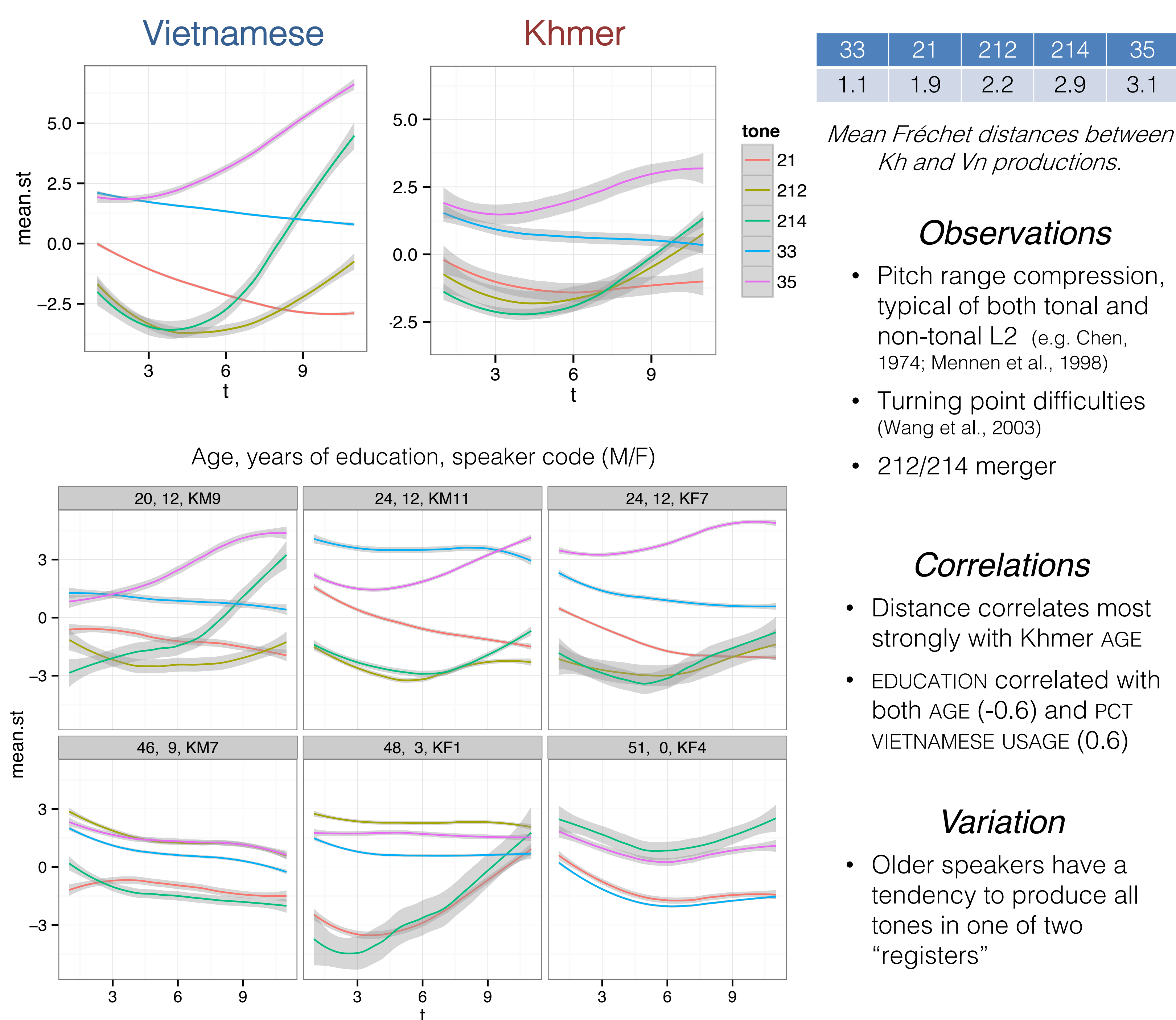
What is the relationship between L2 production & perception?

- Flege (1999): (segmental) L2 production accuracy limited by perception: correlations may exist, but predicted to be modest in advanced learners.
- Strange (1995): perceptual difficulties may persist even after production is mastered; performance may be uncorrelated
- For tone, consensus seems to be that production leads perception (Yang, 2012)

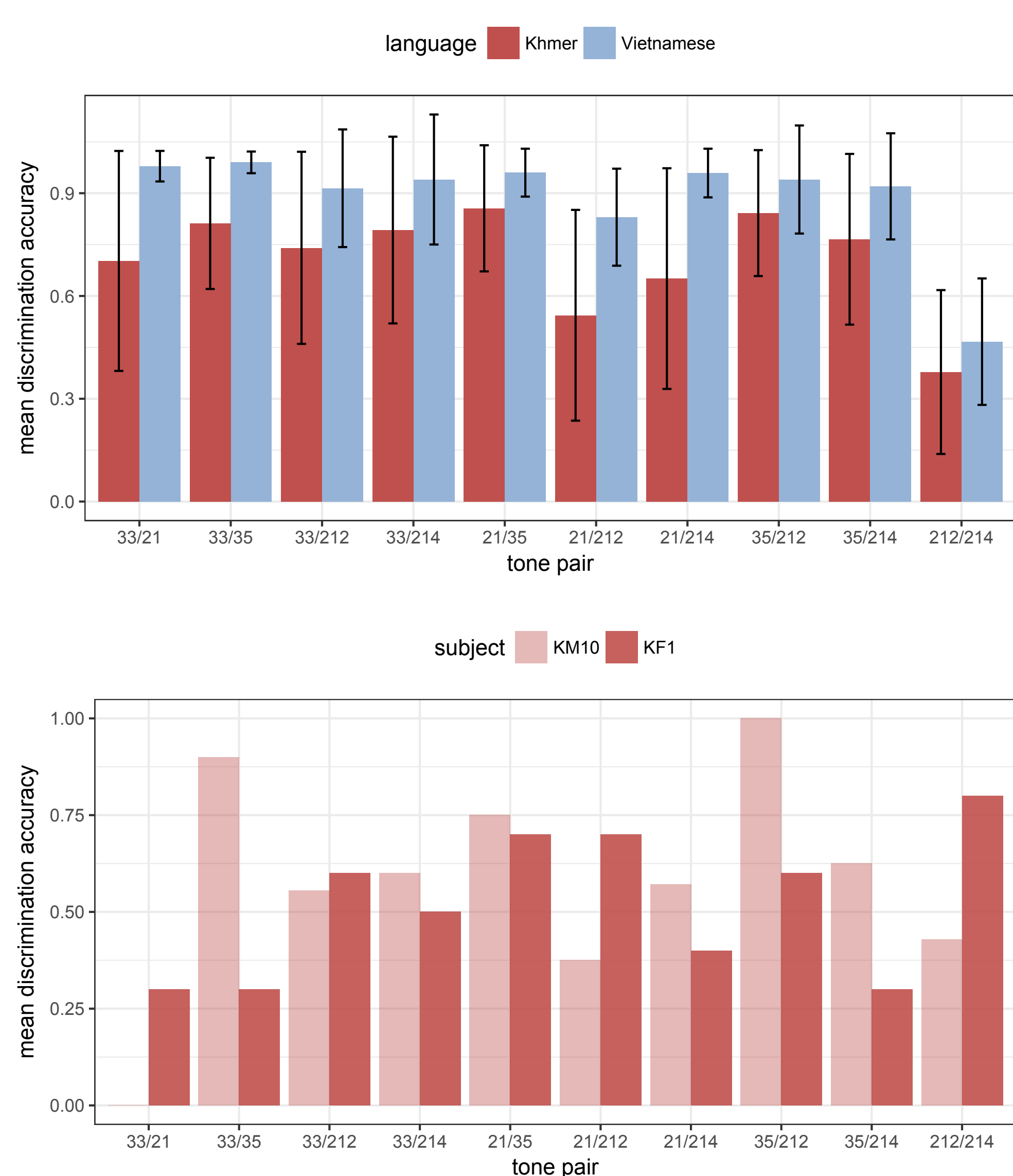
Our study: speakers of a non-tonal language (Khmer) speaking a tonal L2 (Southern Vietnamese)

- How well do Khmer-dominant speakers distinguish L2 tones in production?
- What dimensions are used by Khmer and Vietnamese listeners in perception?
- How can we measure the relationship between L2 production and perception?
Idea 1: How well does perception predict similarity to a native target?
Idea 2: How well does perception predict distance between L2 productions?

3. PRODUCTION



4. AX DISCRIMINATION



2. METHODS & MATERIALS

Kiên Giang Province (ក្រុងស្ទឹងត្រែង)

- Home to ~200k Khmers (10% of both provincial population & total in Vietnam)
- Robust, but Vietnamese usage on the rise

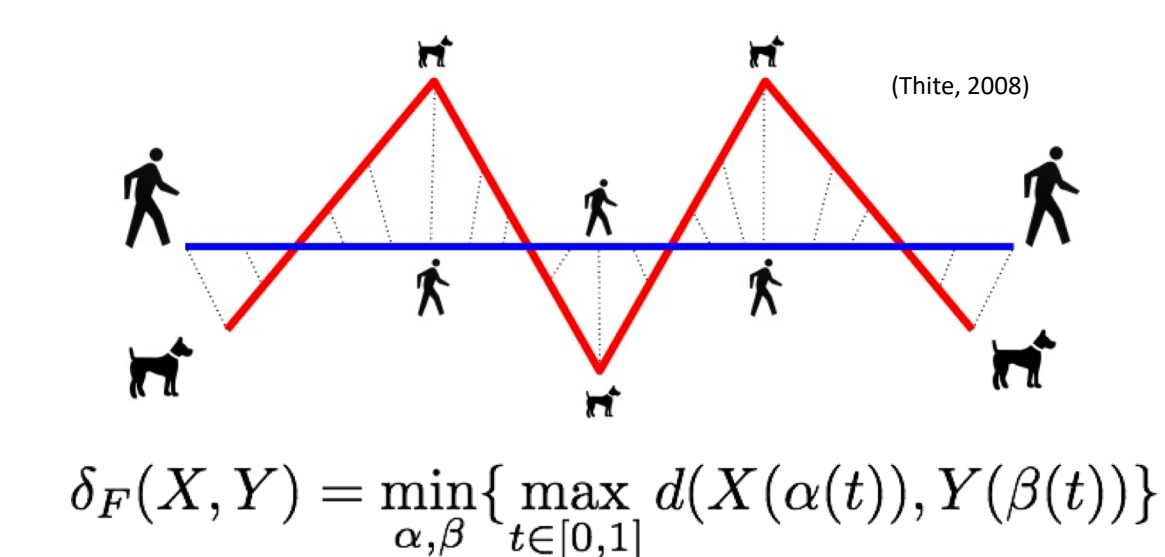


Participants and method

- Group Vn: 10 speakers of Southern Vietnamese (18-47, 5 F)
- Group Kh: 18 speakers of KG Khmer w/L2 Southern Vietnamese (19-52, 7 F)
- Production: syllable /ta:/ with each of 5 tones, 3 times in carrier phrase
- Perception: AX discrimination, 30 stimulus pairs, 5 reps, 300 msec inter-stimulus interval

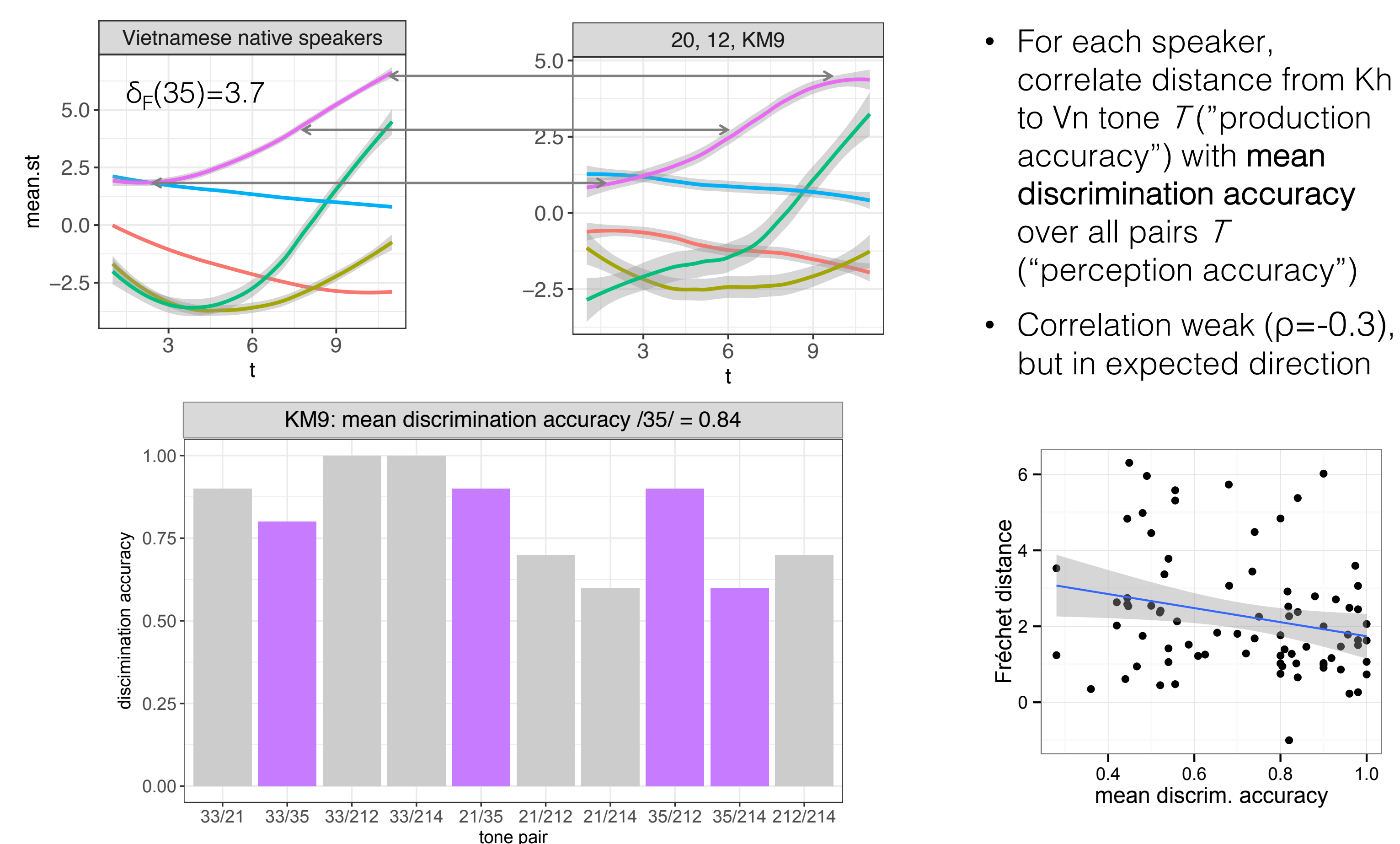
Distance metric

- Fréchet distance: minimizes the maximum distance between two curves
- Provides a global measure of similarity

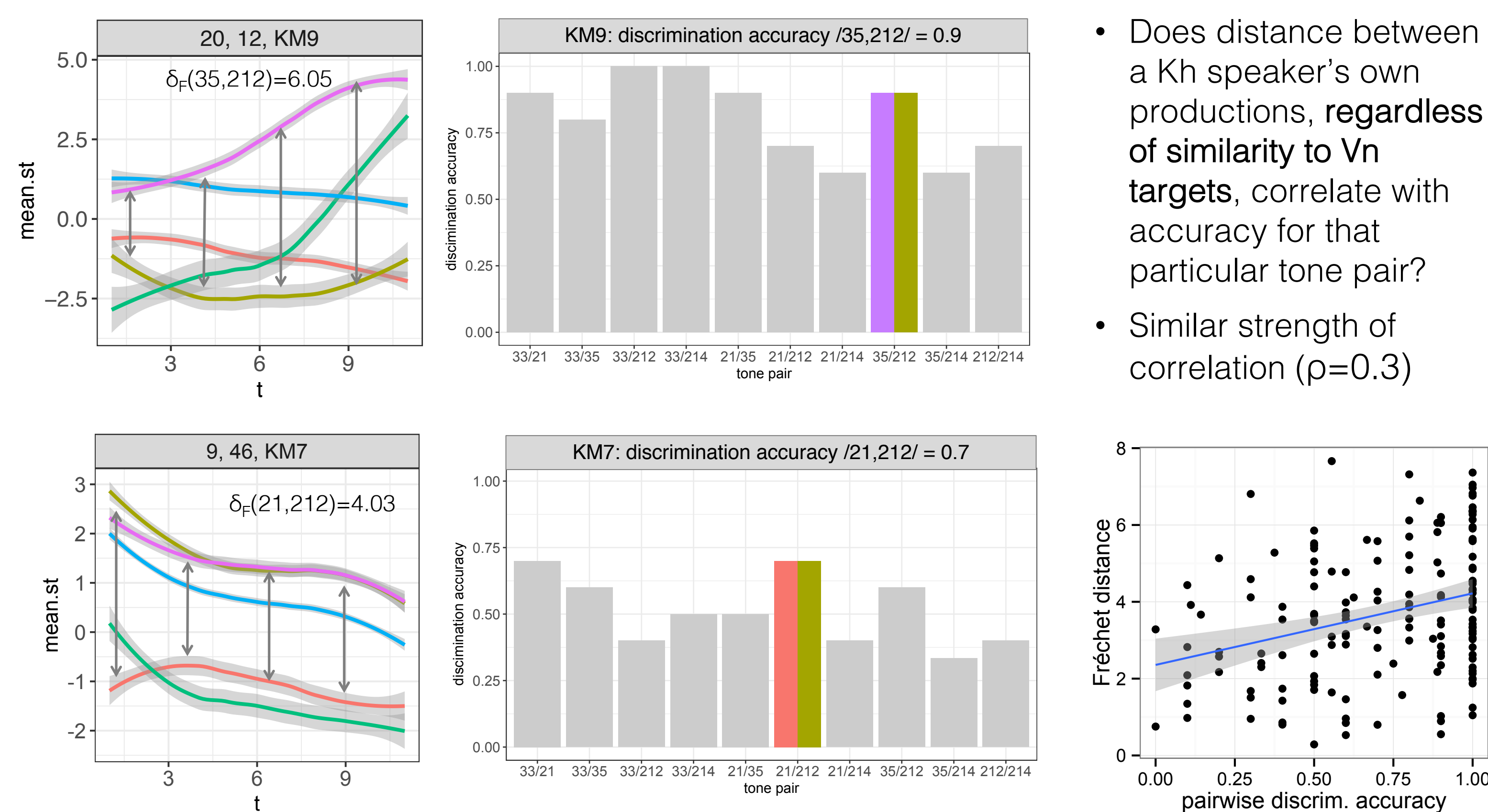


5. PRODUCTION:PERCEPTION

Idea 1: distance from native target ~ mean discrimination accuracy



Idea 2: distance between L2 pairs ~ pairwise discrimination accuracy



6. CONCLUSIONS

- Perceptual difficulties may persist even if production is 'mastered'
- Perceptual difficulties may (also) be related to *speaker-specific* acoustic separation (at least for tone)
- 'Accuracy' in L2 tone mastery involves more than just approximating a native speaker target