Awareness in sociophonetics and in linguistic anthropology
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Hypotheses:

1. Manipulating expectation of speaker identity will alter listener category boundaries for /e/-/i/ and /o/-/u/.
2. Specifically, creating an expectation of Quechua-dominant speech will broaden listener vowel categories resulting in more gradient/less categorical discrimination.

Results and conclusions:

Upheld Hypothesis 1: Manipulating expectation of speaker identity will shift listener category boundaries for /e/-/i/ and /o/-/u/, but only for the *initial* social identification ($\beta = -0.229$; $p < .05$).

Qualitative measures of sociolinguistic awareness obtained through interviews and in conversation are different from experimental measures of sociolinguistic awareness obtained through a perception task.

Social information is assimilated and processed at different levels. What people *perceive* is not necessarily what they *believe they hear*.

Interview questions:

(before activity)
Please give me your full name.
How old are you?
Where were you born?
How long have you lived in Iscamayo?
Have you ever lived elsewhere? Where and for how long?
Do you speak Quechua? If so, do you use the language daily?

Can you tell by the way people talk whether they speak Quechua or not? That is, can you identify a native Quechua speaker just by the way they talk?
Do you think there's a difference in the way people talk in Cochabamba and Santa Cruz?
Which one do you think people in Iscamayo sound more like?

(after 1st and 2nd guises)
What words did you hear?
Were any of them clearer than the others?
When you listen to this person, do you think she has studied [is educated] or not?

(after 2nd guise only)
Did you hear any difference between this person and the first person we listened to? (if necessary, I would prompt them: "The Quechua/Spanish speaker?")

Synthesis:

We used the following procedure to synthesize pairs of /u/-/o/, as described, and /i/-/e/ vowel continua:

1. Isolate the u and o endpoint vowels in Praat from natural recordings of words (e.g. *suda* and *soda*). Target words were chosen for similarity in speaking rate, pitch contour, etc.
2. Normalize these continuum end points for duration and intensity.
3. Interpolate the actual recordings at different intensity ratios: 0:10, 1:9, 2:8 … 8:2, 9:1, 10:0. The end points are entirely the original recordings and the middle point is an equal acoustic mixture of the two vowels.
4. Carefully splice the synthesized vowel back into the consonantal frame (e.g. s_da). Continua were made separately for each word pair since listeners are sensitive to coarticulatory information in the speech signal (e.g. Beddor et al forthcoming, Lahiri & Marslen-Wilson 1991).

Two separate continua were synthesized for each word pair to ensure that 'same' comparisons in the AXB task were not between to identical audio files but between two synthesized tokens at the same mixture of intensity levels.

Presentations:

Pica/peca and moda/muda FIRST x Native Spanish speaker from Santa Cruz FIRST
Pisa/pesa and soda/suda FIRST x Native Quechua speaker from Cochabamba FIRST

Pisa/pesa and soda/suda FIRST x Native Spanish speaker from Santa Cruz FIRST
Pica/peca and moda/muda FIRST x Native Quechua speaker from Cochabamba FIRST

Statistical model:

Data were analyzed using the lme4() function (Bates et al. 2011) of the R statistical analysis environment (R Development Core Team 2011). Using a generalized linear mixed model with binomial errors and a logit link function in which response accuracy (correctly identifying which item, A or B, matched the reference item X) was the dependent variable and the interaction term of guise level (Spanish-dominant or Quechua-dominant) by guise presentation order (whether the Spanish-dominant or Quechua-dominant guise was presented first) was modeled as a fixed effect. Participant and item were included as random effects with varying intercepts (but fixed slopes). Results of this linear model are shown in Table 1.

	Coef β	**SE(β)**	**z**	**p**
Intercept	0.712	0.141	5.063	**<.0001**
guise	-0.012	0.032	-0.405	>0.6
presentationOrder	-0.009	0.032	-0.277	>0.7
l(guise|presentationOrder)	-0.229	0.099	-2.319	**<0.05**

Table 1: β coefficients, standard error, z scores, and p values for linear mixed model.

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