Language Development in Non-Native-English-Speaking Teaching Assistants
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Communication in the Global University: A Longitudinal Study of Language Adaptation at Multiple Timescales in Native- and Non-Native Speakers

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The “ITA problem” (an undergrad’s perspective)
42% of undergraduates report having dropped a class upon learning it would be taught by a non-native speaker of English (Rubin & Smith, 1990).

Chinese speakers of English as L2 tend to depart from standard pronunciation in (at least) these ways:
- /l/ not distinguished from /r/
- /v/ pronounced as /w/
- Non-standard vowels and lack of vowel contrasts
- Epenthesis in selected consonant clusters
- /th/ pronounced as /s/
- Non-standard prosody (pitch accents, hesitations, etc.)

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- ITA 1: final voicing, lexical stress, final /l/, /l/-/e/ contrasts, epenthesis for some clusters
- ITA 2: /v/-/w/ contrasts, /l/ and epenthesis for some clusters, vowel contrasts, prosody

“Not much research has been done on everyday multitasking and healthy aging, or in situations that are important in everyday life, like completing errands in a mall or preparing something to eat. We’ll present an experiment and a multivariate study using a virtual breakfast-making task.”
The “ITA problem” (an undergrad’s perspective)

I hope you are all well. Is the semester going smoothly?

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The “ITA problem” (an ITA’s perspective)

Undergradese
What undergrads ask vs. what they’re REALLY asking

"Is it going to be an open book exam?"
Translation: “I don’t have to actually memorize anything, do I?”

"Hmm, what do you mean by that?"
Translation: “What’s the answer so we can all go home.”

"Are you going to have office hours today?"
Translation: “Can I do my homework in your office?”

"Can I get an extension?"
Translation: “Can you re-arrange your life around mine?”

"Is this going to be on the test?"
Translation: “Tell us what’s going to be on the test.”

"Is grading going to be curved?"
Translation: “Can I do a mediocre job and still get an A?”

The “problem” is not just the ITA’s problem…

- how undergraduates can adapt to an ITA’s foreign accent (perceptual learning, explicit and implicit interventions), and
- how ITAs and undergraduates ground meanings in one-on-one conversation.
- TODAY’s talk: How ITAs’ English proficiency develops over time.

Modeling ITAs’ language development

Longitudinal study of Chinese ITAs new to the US
Three 2-year waves of repeated measures.
(Wave 1 is now complete.)

Inclusion criteria:
- No previous experience living in or studying in the U.S.
- Native speaker of Mandarin
- Admitted to any SBU STEM PhD program with funding
Research Questions

• To what extent does ITAs’ language proficiency develop over time in the U.S.?
• Does ITAs’ confidence in their skills matter?
• Does it matter whether they are aware of their language proficiency? (metacognition)
• What factors are associated with high English proficiency?

Versant test

Four sub-scales are combined into a weighted score:

- Sentence mastery
- Vocabulary
- Pronunciation
- Fluency

\[
\text{Versant} = \text{Sentence} + \text{Vocabulary} + \text{Pronunciation} + \text{Fluency}
\]

\[
\text{Versant Intelligibility} = \text{Pronunciation} + \text{Fluency}
\]

Self-report measures

- Demographic info
- Language background
- Travel and multi-cultural experiences
- Self-confidence in English language skills
- Personal interactions on and off-campus

Other measures

Mint test of vocabulary

Speech recordings:
- Words selected for certain features, in and out of sentence contexts
- Short discourses
- Answers to questions (to test for felicitous focal stress in pragmatic contexts)
- Ethnographic interviews (>44 hours)
**Key Repeated Measures**

5 TIME POINTS over ~2 years:

- Arrival on campus
- End of Fall Y1
- End of Spr Y1
- End of Fall Y2
- End of Spr Y2

Versant Score ↔ Confidence in Own Communication Skills
- Versant sentence mastery ↔ Confidence in grammar
- Versant vocabulary ↔ Confidence in own vocabulary
- Versant pronunciation ↔ Perception of own English accent
- Versant fluency ↔ Confidence in presenting research

METACOGNITION variables:
- Accuracy in estimating own proficiency ($Z_{\text{Confidence}}$ minus $Z_{\text{Versant}}$)
- Direction of error: +Over-confidence vs. -under-confidence

**School/life experience**
- Estimated ease of school-related activities
  - Learning
  - Managing time
  - Getting help with schoolwork
  - Interacting with faculty

**Interactional Experiences**
- Use of English within U.S. campus home

**RESULTS**
Versant scores over time by subject

**Metacognition by Proficiency**

Metacognition: Accuracy in estimating own proficiency

\[(Z_{\text{Confidence}} \text{ minus } Z_{\text{Versant}})\]

Direction of error: +Over- vs. -under-confidence

**Mixed Effects Models 1A and 1B**

**Full Versant with Metacognition**

Dependent variable: Versant overall Score

Fixed Effects:
- Base(time)
- Metacognition (ranging from overconfident to underconfident)
- Ease of doing school related activities
- Use of English (at US home)
Models not sig diff
Quadratic term not needed

Linear mixed model fit by REML:  t-tests use Satterthwaite approximations to
degrees of freedom [lmerMod]
Formula: v_intel ~ base + metacog_intelwd + avgsease + enhome + (metacog_intelwd | id)
Data: mdata
REML criterion at convergence: 706.8
Scaled residuals:
    Min    1Q  Median    3Q   Max
-2.5379  0.4831  0.8250  0.4507  2.1179
Random effects:
Groups   Name        Variance Std.Dev.  Corr
id     (Intercept)  31.436   5.607
        metacog_intelwd  1.563   1.258 -1.00
Residual            14.252   3.775
Number of obs: 121, groups: id, 26
Fixed effects:  Estimate   Std. Error   df t value Pr(>|t|)
(Intercept)      37.5771      2.4783 140.1700  15.162 < 2e-16 ***
base2             2.8408      1.1567  87.1600  2.460 0.015886 ***
base3             3.8212      1.2297  91.4900  3.187 0.002515 ***
base4             6.8131      1.2087  87.9500  5.676 6.42e-08 ***
base5             6.5712      1.1214  86.9900  5.868 8.12e-08 ***
metacog_intelwd  -3.9647      0.5520  41.7500 -7.219 7.28e-09 ***
avgsease          2.6532      0.7981  92.6000  3.363 0.000311 ***
enghome           1.8373      0.8958  93.3300  2.048 0.043837
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 1

Mixed Effects Models 2A and 2B
Versant Intelligibility w/ Metacognition

Dependent variable: Versant Intelligibility

Fixed Effects:
- Base(time)
- Metacognition (ranging from overconfident to underconfident)
- Ease of doing school related activities
- Use of English (at US home)
Linear model Quadratic model comparison

Results

- Proficiency increases over time
- Those with more accurate metacognition were more proficient
- However, it’s better to be underconfident than overconfident
- Self-ratings of ease of doing school-related things was associated with higher Versant scores
- It didn’t matter whether English is spoken in the home.

Conclusions from this study:

- ITAs with more accurate metacognition about their own language skills (who were neither over- nor under-confident) had higher VERSANT scores
- Being under-confident was associated with higher proficiency than being over-confident.
- ITAs are not as immersed in an English-speaking community as one would hope.
- Stable improvements in proficiency did not emerge until after the first year.
- Accents are a bundle of features; each speaker has somewhat idiosyncratic issues with English pronunciation.

Versant overall: Wave2 Baseline 1,2,3,4 (n=16+2, 15, 18, 17)
Implications

- Over time in the U.S., pronunciation and fluency don’t improve as much as do vocabulary and syntax.
- This suggests that we should address the problem at the undergrad level – train the listeners to adapt!
- The "ITA problem" is not owned by ITAs, but is broadly shared by all who participate in a major university within a modern global context.
- Native-non-native speaker communication is a rich and complex problem!

Other findings from this project:

- Native English monolinguals rate foreign-accented speech similarly whether the speaker is Caucasian or Asian (Zheng & Samuel, 2017)
- When listening to audiovisual speech, accented speech is more intelligible when the listener is closer to the speaker (Zheng & Samuel, *********)
- Giving ITAs and undergrads experience interacting in a matching task (a 1-2 hour intervention) does not make the ITA’s accent more intelligible to the ugrad afterward (Charoy & Brennan, unpublished).
Repeated Versant scores over time
N = 26, 25, 25, 25, 24

VERSANT TEST

- Regressing at end of Y1 in grad school?
- A few subjects having a bad day?
- An unpublicized change in the Versant test?

The “problem” is not with the ITA...

Communication is fundamentally collaborative; both partners adapt their utterances to one another as they **ground** meanings (Clark & Brennan, 1991).

This is true even when a native English speaker speaks a "target" version of the language that the partner aspires to master (Bortfeld & Brennan, 1977). Native speakers produced wildly non-idiomatic expressions in order to be clear to non-native speaker:

*the chair in which I shake my body*

Both partners take responsibility for achieving meanings in conversation.

Starting Assumptions/Predictions

- ITAs are immersed in an English-speaking culture.
- ITAs English proficiency will improve rapidly with time in the U.S.
- Undergraduates’ attitudes are part of the problem (it’s not all about intelligibility).
- Experience in a collaborative task that requires grounding meaning should help undergrads adjust to foreign-accented speech

The “problem” is not with the ITA...

Communication is fundamentally collaborative; both partners adapt their utterances to one another as they **ground** meanings (Clark & Brennan, 1991).

Both partners take responsibility for achieving meanings in conversation.

Individual ITAs may or may not become more native-like in their pronunciation; however perhaps undergraduate can learn to understand their accents.