LINGUISTICS

AT INDIANA UNIVERSITY

From the Chair

The climax of the academic year — graduations and commencement exercises — is just around the corner. This year we are graduating 26 majors in linguistics, five of whom were nominated to the Phi Beta Kappa Society. Six students will receive their M.A.s in general linguistics, five in computational linguistics. Four doctoral students successfully defended their dissertations, with a fifth expected this summer. We congratulate these graduates for their diligence and strong work ethic, and wish them success in their future endeavors as they join the ranks of our 1,600 alumni.

Our spring issue of the departmental newsletter again presents an opportunity for us to focus on the research of our students, giving readers a sense of what our students are doing. In this issue, you will find brief descriptions of the research of two undergraduates and five graduate students. We are pleased that many of our undergraduates are becoming more involved in research.

In the past year, we have provided research support funding for three students, amounting to $1,000. In addition to this support from the Householder Research Fund, the department has provided support from the Linguistics Enrichment Fund to purchase a Glottal Enterprises Nasometer, the purpose of which is to measure and provide information on the presence of nasality in speech production. This equipment will be of great use to our phonetics students, in particular, one of whom is highlighted in this issue.

This year a large number of our students are presenting at conferences. This is an important facet of their education and development as linguists, so we endeavor to provide as much support as possible. This semester alone, we have had 13 requests for support to attend conferences. This is not surprising, as it easily costs $800 to $1,000 to attend a conference.

Many students have benefitted from financial support either to carry out their research or to travel to conferences to present their research findings. For these students and others, the contributions from our alumni to our Conference Travel Fund, our Fred Householder Memorial Research Fund, our Student Support Fund,

and our Linguistics Enrichment Fund, have played a key role. I ask you to consider continuing to help with that support or becoming a donor. We greatly appreciate your support of our students!

As this academic year comes to a close, we look forward to next year and a new group of students, perhaps a large group, as the new MS in Computational Linguistics gets implemented. We expect it to be quite attractive to individuals who want to move into the computational field. The field is changing; we are changing with it.

Robert Botne

Dissertation Defended: Christiane Kaden
Lengthenings and Shortenings in Germanic

Research committee: [seated] Tracy A. Hall (Germanic Studies, Co-Chair), Christiane Kaden, Stuart Davis (Linguistics, Co-Chair); [standing] Ken de Jong (Linguistics). Not pictured: Kari Ellen Gade (Germanic Studies)

Christiane Kaden successfully defended her dissertation "Lengthenings and shortenings in Germanic" in March. The following is a description of her work.

Her dissertation investigated vowel and consonant lengthening and shortening processes in selected Germanic languages and dialects (Imst German, Bernese German, and Icelandic), all of which have

phonemic geminates, which occur word-medially, as well as word-finally. Geminates are preserved in all contexts (surfacing as moraic). The vowel length contrast in Imst German and Bernese German is preserved only before word-medial geminates, but neutralized in all other contexts. Vowel length is completely predictable in Icelandic. Whereas Irnst German and Icelandic show the lengthening pattern predominant in Germanic, i.e., the lengthening of a vowel in an open stressed syllable (Open Syllable Lengthening), as well as the lengthening of a vowel before a singleton coda in monosyllabic words (Monosyllabic Lengthening), Bernese diverges from this pattern by shortening the vowel in an open stressed syllable (Trochaic Shortening), while also lengthening the vowel preceding a singleton coda in monosyllabic words. All three languages only have short vowels before a word-internal coda and a word-final complex coda (Closed Syllable Shortening).

The analysis of these lengthenings and shortenings was framed within Optimality Theory. The analysis showed that lengthenings and shortenings can be uniformly analyzed as the insertion, deletion or re-assignment of a mora, using a core set of moraic faithfulness constraints, referring to the association between morae and their segments (adopted from Moren 1999/2001). Her work showed that the lengthenings and shortenings investigated are all motivated by prosodic factors, such as syllable and foot structure, as well as segmental weight. A language-specific ranking of the relevant prosodic markedness constraints with respect to the moraic faithfulness constraints can then account for all lengthening and shortening patterns found in the three languages.

Dissertation Profile: Sylvina Bongiovanni
Vowel nasality in two dialects of Spanish

Advanced Ph.D. student: Spanish and General Linguistics

Languages vary by geography and change over time. One way of understanding how languages change is by studying dialectal variation and how people perceive other dialects of their language. The ways in which people produce and perceive variation have been shown to mirror patterns of sound change. By focusing on one particular linguistic phenomenon, we can study variation, and how it leads to language change, in a controlled manner. To this end, my dissertation focuses on the production of dialectal differences in Spanish with regard to vowel nasality.

The complex interplay between the phonetic and phonological factors involving nasals and nasalization has attracted the attention of much linguistic research. This work has studied the phonetic details of nasal(ized) segments, their patterns of sound change, and the interplay between the production and the perception of these segments. When compared to other Romance languages, Spanish vowel nasality is understudied. Traditionally, it has been described as phonetic nasality, a physiological result of co-articulation with an adjacent nasal consonant. For example, in a word such as *pan* 'bread', in anticipation of the nasal consonant, speakers lower the velum early and, consequently, nasalize the vowel. This contrasts with other languages, such as English, where the co-articulatory nasalization has phonologized and is an intended property of pre-nasal vowels.

Several scholars, however, have proposed that vowel nasality in Caribbean dialects of Spanish behaves differently. The literature in Hispanic Linguistics has extensively noted that some dialects in this region may have phonologized vowel nasality, due to the lenition of word-final nasals. These observations stem from sociolinguistic work examining nasal consonants in the syllable-coda. This body of work indicates that, in Caribbean varieties of Spanish, the (standard) alveolar nasal ([n]), alternates with a velarized variant ([ŋ]), and a deleted variant coupled with nasalization of the preceding vowel ([ṽ]). These studies have made important contributions to our understanding of lenition processes affecting syllable-coda nasals in Spanish. However, they have relied on impressionistic analyses, and the perceptual similarity between variants such as a velar nasal and a nasalized vowel may have lead researchers to mistakenly report velarization instead of nasalized vowels, and vice-versa.

Despite these long-held claims of dialectal differences and sound change, comparisons of vowel nasality patterns across Spanish dialects are still lacking. In my dissertation, I examine the claims of phonologization of nasality in Spanish by comparing the patterns of vowel nasality of an "innovative" and a "conservative" dialect. During the summer of 2016, I will

travel to the Dominican Republic and to Argentina to record speakers in these two dialectal areas. As representative tokens of "innovative" (Dominican Republic) and "conservative" (Argentina) dialectal areas, these two varieties are expected to present diverging patterns of vowel nasality that may (or may not) substantiate claims of phonologization.

In addition to documenting the dialectal differences, with my dissertation work I hope to contribute to what is currently known about nasalization processes in Spanish. In order to obtain accurate measurements of vowel nasality, I will use a nasometer. This device consists of two microphone sets that simultaneously record energy from the nose and energy from the mouth, and thus, provides accurate measurements of degree of nasalization. This project will provide an overdue experimental comparison of patterns of vowel nasality. In my analysis, I will examine the effect of different phonological contexts, such as position within the word, stress and vowel quality.

Dissertation Profile: Young Hwang
The interaction of pitch accent and laryngeal stop contrasts in North Kyungsang Korean

Advanced Ph.D. student, General Linguistics

Unlike most of the world's languages, Korean stops have a three-way contrast which is all voiceless in word-initial position. The three different categories are often called fortis, lenis, and aspirated and these are differentiated by both voiced onset time (VOT) and fundamental frequency (f0). VOT is shortest with fortis stops, longer with lenis stops, and longest with aspirated stops: fortis < lenis < aspirated. Although the VOT range of fortis stops is clearly separated from that of lenis and aspirated stops in Standard Korean (SK), there is some overlap between lenis and aspirated stops. As a consequence, f0 (i.e. pitch) is used as a cue to distinguish these two stops in SK. Vowels following aspirated stops have higher f0 than lenis stops and this contrast is used to differentiate lenis stops from aspirated stops.

However, there are some Korean dialects such as North Kyungsang Korean (NKK) that use f0 to express lexical pitch-accent. That is, NKK differentiate word meaning based on f0 distinctions (High and Low tones). However, it is not currently well understood how speakers of NKK use f0 to pack lexical (pitch) information as well as the three-way stop contrast into the same speech signal. Previous studies seem to assert that pitch accent languages, such as NKK, use a different cue such as VOT rather than f0 to distinguish the stop consonants because the pitch accent system already uses f0 distinctions with high and low tones, leaving less for the consonant system to work with. However, Holliday and Kong (2011) show that there is a considerable pitch difference among the voiceless stops in NKK, and the pitch as well as VOT play a crucial role in the stop distinction. Therefore, this study aims to examine the interaction of fortis, lenis, and aspirated stops with the lexical High and Low tones in NKK.

The linguistic corpus includes bisyllabic words which have either High-Low or Low-High tone pattern. This creates four environments for the stops: initial H, initial L, intervocalic H, and intervocalic L. The corpus is also divided according to the place of articulation (bilabial, alveolar, velar) and three laryngeal contrasts (fortis, lenis, aspirated). The participants consist of 20 speakers of NKK and they are asked to pronounce the stimuli three times each in a carrier sentence. The pitch and VOT will be measured with Praat, and a Praat script, which automatically divides each target vowel into 10 equal pieces and calculate the average f0 of each segment, will be used to measure the pitch automatically. The vowels of the target syllable will be selected and transcribed by hand before running the script. The VOT of each consonant will be measured by hand.

The results that we expect are first the VOT range of fortis stops would be distinct from that of lenis and aspirated stops (similar to SK), so that another cue would be required to distinguish lenis stops from aspirated stops. And second, it is anticipated that f0 results will show that NKK employs f0 cues for both the lenis/aspirated stop distinction and lexical pitch accent but in distinct ways. We expect that initial pitch (f0) plays a crucial role in revealing the stop distinction, while the pitch contour contains information pertinent to the pitch-accent system. We can also expect that the initial f0 difference between fortis/aspirated and lenis stops might be greater than that is shown in SK since

speakers of NKK might have more control over the use of f0 as a cue. This can lead to an opposite assumption from the previous literature which asserts that f0 is not a critical element for the stop contrast in pitch-accent languages since the f0 distinction is already used up for tone distinction. For pitch contour, as we found in our pilot study, we predict that the f0 patterns in high tone syllables would be slightly rising from the beginning to the end, while those in low tone syllables would show a level pattern. This would show that NKK actually distinguishes high and low tone syllables with pitch contour, leaving the initial part of the pitch to help distinguish the three-way stop contrast.

Although NKK has a unique and interesting use of features with f0 which is employed for both the three-way voiceless stop contrast and the pitch-accent system, very little study has been done on the interaction of these two systems. The results of this study will document how people produce different pitch information in a speech signal.

Dissertation Profile: Jung-Eun Choi
### Topic and case-marking in second language (L2) learners of Korean: A feature-based approach

Advanced Ph.D. student, General Linguistics

My research explores English-speaking learners' variability in their use of topic and case marking in L2 Korean and considers to what extent cross-linguistic differences regarding the features selected by each language constitute a source of interlanguage variability or permanent impairment for second language learners.

Recent accounts of morphological variability in L2 acquisition comprise two different views, those who locate the deficit in the computational system itself (because of the impossibility of acquiring new L2 features after the critical period), and those who locate the deficit at the level of mapping between semantics and overt morphology. The letter view is consistent with Feature (Re)-assembly Hypothesis, which is closely linked to my research. According to this approach, framed within the Minimalist Program, language learners select the relevant features for lexical items in the target language. The inventory of possible features is assumed to be universal, part of human linguistic computational mechanism. However, not all languages make use of all the possible features, and languages differ from one another in exactly how these features are bundled together into individual lexical items and functional categories. A child-L1 learner has to select the appropriate features for each item in the target language, whereas an L2 learner has both to select new features for the L2 (in the case of features that are not selected in the L1) and to reassemble the existing features (in the case where features are selected differently in the L1 and the L2). Lardiere (2009) asserts that determining the precise (phonological, morphosyntactic, semantic, pragmatic, and/or discourse) conditions under which a particular feature is expressed is a critical part of the feature assembly problem, or the degree to which they differ from those of the L1, contribute to the difficulty of the L2 learning task.

The subject particle in Korean, –i/ka, is used to mark [+nominative] case, but also marks [+exhaustive] focus. The topic particle, -(n)un, can be divided by three subtypes: [+generic], [+anaphoric], [+contrastive] topics. In addition, the [+contrastive] topic sometimes generates a sense of incompleteness/ uncertainty. By using four tasks (Acceptability judgment task, Forced-choice task, Preference task, and Translation task), my current research attempts to examine whether English-speaking learners at different proficiency levels are able to acquire all the knowledge of topic and case (nominative and accusative) particles in L2 Korean. In the fall of 2015, I conducted the experiment to English-speaking learners of Korean, and presently I am analyzing the results.
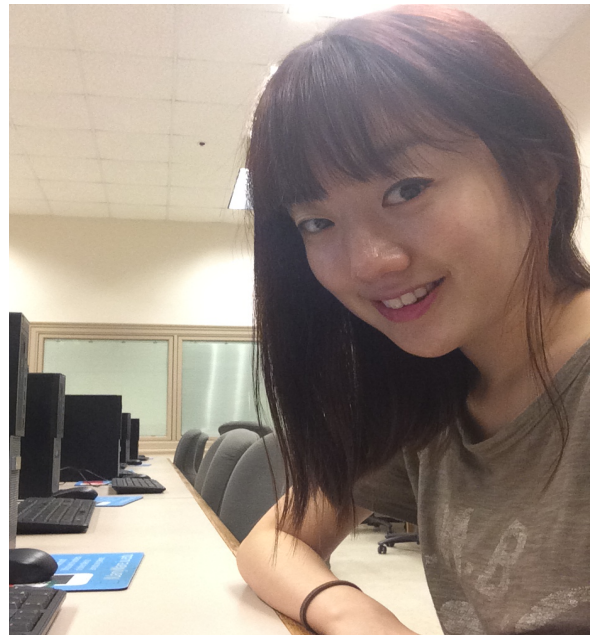
My first research question is whether English-speaking learners of Korean are able to (re-)assemble a discourse feature [+exhaustive] into the subject particle –i/ka. In English, [+exhaustive] focus is realized with pitch accent on NPs. I assume that it would be more difficult for L2 learners to acquire [+exhaustive] focus than [+nominative] case associated with the subject particle because features that are encoded differently in their L1 will be more difficult to acquire.

My second research question is whether English-speaking L2 learners of Korean are able to acquire knowledge that [+generic], [+anaphoric], [+contrastive]

and [+incomplete] are associated with the topic marker, even though there is no similar lexical item in the L1. If they could, which feature would be acquired first? I assume that L2 learners would have more difficulty in assembling discourse/pragmatic features, [+anaphoric], [+contrastive], and [+incomplete], which are determined by given contexts. In other words, the more context information the L2 learners require to integrate into the structures, the more difficult it is to acquire them. Therefore, I predict that [+generic] topic that do not necessarily require contextual information would be acquired first. I hope to answer all these questions with my data.

*[*Jung-Eun received a Householder Research award in support of this work.]*

Instructor Profile: Victor Alabi
Teaching and Learning Culture
Exploring "First meetings" in Yoruba

Graduate student in African Linguistics
Instructor of Yoruba, African Languages Program

Victor presented this paper at the Annual American Council on the Teaching of Foreign Languages Convention (ACTFL) in San Diego, California, November 20-22. It explores the importance of employing cultural norms as accompaniment to language teaching, drawing numerous examples from how Yorùbás greet one another and how they introduce themselves. Data was collected from some greeting expressions by American students learning Yorùbá. Authentic materials like pictures and video clips in Yorùbá also constituted part of the data. They were used to show the necessity of incoporating culture into foreign language teaching in the U.S. Few examples were also drawn from Swahili, French and Chinese.

The Yorùbá language is spoken by over thirty million people in the South-Western part of Nigeria. Yorùbá is also spoken in some West African countries like Togo, Benin; as well as in Brazil, Cuba and in the Caribbeans. Yorùbá is taught in different universities across the U.S. in states like Indiana, Illinois, Michigan, Wisconsin, Connecticut, New York, Georgia, Texas, Florida, Louisiana, North Carolina, South Carolina, and so on.

In the U.S. for instance, "hi" or "hello" is a form of casual greeting in (a)symmetrical situations but this does not apply in Yorùbá. During first time meetings, Yorùbás usually greet but seldom introduce themselves. In the case of greeting, "báwo ni?" ("how is?", meaning "how is it?", which means "how are you?") is said to a younger person but not to an older person. The honorific "ẹ" (a pronoun that marks plurality) also carries cultural connotations of respect, for instance, the "ẹ" in "ẹ káàárò" ("you good morning" meaning "good morning") is said to an older person while "káàáro" is used with peers or said to a younger person. When greeting elderly people, males have to prostrate while females have to kneel down. If a male has any cap on, the cap would have to be removed before prostrating before the elderly person. When greeting, proximity is important because staying too close or too far is culturally unacceptable in Yorùbá. A younger person is not expected to initiate handshakes when greeting an elderly person. If an elderly person shakes hands with the younger person, the younger person is not expected to stare at the elderly person but to bow. These greeting patterns are culturally important in a foreign language teaching situation. The non-verbal aspects of greeting are part of the Yorùbá culture, which must accompany the verbal aspects of foreign language teaching.

Again the Yorùbás, when introducing themselves to unfamiliar persons, could say, for instance, "Orúkọ mi ni Tópẹ́" ("Name my is Tópẹ́" meaning "My name is Tópẹ́") and simply expect the other person to do the same but it is culturally unacceptable to ask someone his/her name in Yorùbá. It is also culturally unacceptable to ask someone how old they are or how many children they have.

In Swahili, "hujambo" is said to a younger person but not to an older person. The same applies to French, where "salut!" is not culturally acceptable from a younger person to an unfamiliar older person. In Chinese, "nin hao" and "ni hao" have different cultural connotations when young persons greet older persons.

Students of foreign languages tend to drop these cultural features because of their being new to the language and culture. They may forget that some of these language usage have cultural meanings and cultural

attachments.

Suggested ways for the teacher to enhance culture in language teaching are as follows: (a) consciously use gestures adequately in class because whatever students see and continue to see the instructor do is what they will also do to a large extent; (b) use authentic materials like audio recordings or video clips of native language users, pointing students' attention to the cultural norms from these materials; (c) make students do role-plays in class to test their speaking skills in order to practice verbal and non-verbal cultural norms; (d) constantly remind students about the cultural ethics of the language being taught; and (e) direct short plays so that they act out the culture, during language festivals.

[*Victor received support to travel to the ACTFL conference from the Student Conference Travel Fund, as well as from the African Studies Program and a Rolando Henandez Scholarship]

Research Profile: Sarah Buchanan
An acoustic analysis of Kandze Tibetan

Undergraduate major in Linguistics, Spanish, and Philosophy

Here's a puzzle: I've studied Spanish for ten years, Hindi for two, and Tibetan for zero. Which language am I writing my thesis on?

I am a senior linguistics/Spanish/philosophy student finishing up my undergraduate studies by writing an honors thesis on the acoustics of a small Tibetan dialect. Dr. Kelly Berkson, graduate student Vitor Leongue, and I have been collecting data from a local native speaker since August 2015 using funding from a Hutton Honors College research grant. For my thesis, I am aiming to catalogue the consonant and vowel inventory for this dialect and (fingers crossed!) be able to say something intelligent about its use of tone. And believe me, there are some wild (well, phonetically wild) things going on in this dialect.

Kandze (alt. Kanze, Kantse, Garze) is spoken in the Kham region of Tibet in the town of the same name. Kandze is a subdialect of the larger dialect of Khams, which is spoken in the southeastern region of historic Tibet. Published research on Kandze is lacking, and there is no reliable demographic data on the speaker population size (informal accounts range from 9,000 to 60,000). What we do know about Khams dialects is how variable they are: even those that are not largely separated geographically can differ greatly, or may even be mutually unintelligible. We soon realized that we needed to look at Kandze independently of other dialects and started elicitation from scratch. Our informant was born in Kandze and left as a child, eventually immigrating to the United States and finding his way to Bloomington. (If you don't already know the story, the Dalai Lama's older brother, Thubten Jigme Norbu, came to Bloomington and

became a professor of Tibetan Studies after fleeing Tibet in 1950. He founded what is now the Tibetan Mongolian Buddhist Cultural Center in 1979, and since then Bloomington has been a popular destination for Tibetans in the U.S.) As a server at the only Tibetan restaurant in town who has the privilege of interacting with these native speakers frequently, I saw an opportunity I couldn't pass up.

Recently, we recorded a significant amount of Kandze speech in the department's recording booth. We are just beginning to analyze the data, but our initial findings suggest that Kandze's consonant inventory possesses cross-linguistically rare pre- and post-aspirated liquids and nasals. We are also noticing nasal vowels, but are so far uncertain as to their phonemic status. We hope to record enough Kandze speech data to create a (very) small corpus which we can make available on the Linguist List's GORILLA platform. This platform uses a creative commons license to make the data freely available to any researcher who wants to further analyze it. As of now, we have few concrete findings to report, but are quickly picking up speed.

My thesis will not cover all aspects of Kandze, nor will it even cover all that I have learned in my research. The contribution I am attempting to make in the field is modest, but it is nonetheless a contribution. Attention and resources have dwindled for the study of Tibetan linguistics in the past few decades, so now more than ever it is important for a research university in a town with such an unusual connection to Tibet and its people to continue to ibetan cultural heritage. Much work remains to be done for filling out my charts, but as the end of the semester looms I hope that analysis goes smoothly and findings come swiftly. To see how this all plays out, be sure to look for my thesis in May!

Research Profile: Max Nelson

Undergraduate major in Cognitive Science and French; minor in Linguistics

My research has been focused on the perception of voice quality contrasts, specifically the perception of breathy voice in Gujarati but with plans to begin working with White Hmong in the near future. Breathy voice is a type of phonation characterized by a lax glottis and increased airflow in relation to modal voicing. Gujarati is relatively unique among languages with phonemic breathiness in that it contrastively assigns breathiness to both consonants and vowels, maintaining a meaningful distinction between CV, $C^ɦV$ and CV sequences.

A number of acoustic analyses of breathiness, including those done by Dr. Kelly Berkson and by my collaborators Dr. Sameer ud Dowla Khan at Reed College and Dr. Christina Esposito at Macalester college, have shown that the majority of the acoustic correlates to breathy voiced consonants exist after the consonant release within the following vowel. This means that from a perceptual standpoint the contrast between $C^ɦV$ and CV is potentially problematic. Both $C^ɦV$ and CV sequences are differentiated from modal CV sequences by an increased open quotient and increased noise during the vowel. A recent acoustic analysis of these sequences in Gujarati (Esposito & Khan 2012) found that they are differentiated by subtle differences in the timing and degree of breathiness. $C^ɦV$ sequences are characterized by an intense burst of breathiness at the onset of the vowel while CV sequences are characterized by an increasing or stable degree of breathiness throughout the duration of vowel. The purpose of my current work is to investigate the degree to which these acoustic differences are perceptually salient.
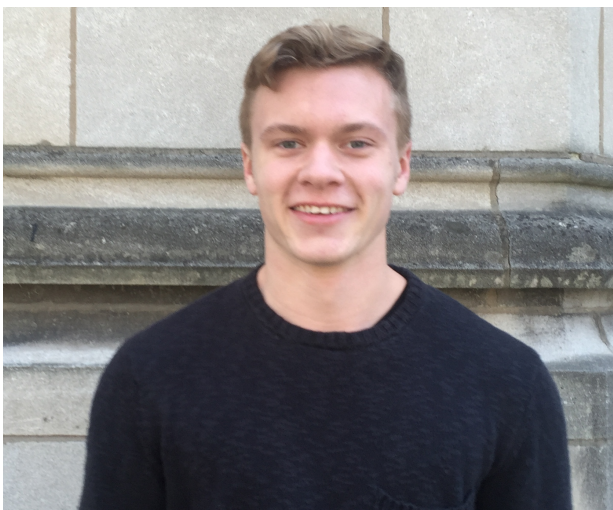
The pilot experiment consisted of a free-sort, discrimination, and identification task dealing exclusively

with the perception of a minimal triplet: [baɾ] *'twelve'*, [bɦaɾ] *'burden'*, and [baɾ] *'outside'* as produced by four female native speakers. Thus far data from six subjects has been collected and the results indicate that the three-way CV, $C^ɦV$, and CV contrast does indeed pose perceptual problems. Across experimental blocks participants seemed unable to reliably identify the presence of breathiness in CV stimuli, frequently misidentifying them as modal CV stimuli. Participants did seem capable of recognizing the presence of breathiness in $C^ɦV$ stimuli, but not of assigning that breathiness to either the consonant or vowel.

Bearing in mind that in the acoustic analysis $C^ɦV$ tokens demonstrate a greater maximum degree of breathiness than CV stimuli, a likely explanation for the results is that the breathy vowels are not reliably produced with a salient degree of breathiness while the intense burst of breathiness in $C^ɦV$ stimuli is reliably salient. Listeners do not always perceive the breathiness in CV tokens and therefore categorize them as either CV or CV. When breathiness is perceived they are not sufficiently sensitive to the differences in timing to correctly assign that breathiness to either the consonant or the vowel, meaning that the $C^ɦV$ stimuli are categorized as either $C^ɦV$ or CV.

An expanded version of this experiment is in the process of being built with hopes of corroborating and strengthening the results of the pilot. The literature on breathiness shows that the acoustic correlates of breathiness vary greatly across languages, consequently we can expect that the cues to which listeners are sensitive will be equally variable so these phenomena must be investigated in other languages. An analogous experiment in White Hmong, one of the few other languages with phonemic breathiness on both consonants and vowels, is in the process of being created and will soon be deployed by my collaborators in Minnesota. Gender has also been shown to have a significant effect on the cuing of breathiness in some languages (Marathi – Berkson 2013, Santa Ana del Valle Zapotec – Esposito 2006) and in future experiments I hope to address the extent to which listeners adapt their perception as a result of the speakers gender.

IU Linguistics polo shirts. Deep crimson color.

Spring is here and summer is just around the corner. For each $100 in donations to any of our departmental funds, donors may receive an IU Department of Linguistics polo shirt, perfect for those warm summer days. In order to receive this gift, donors must fill out a pledge sheet (available at http://www.indiana.edu/~lingdept/donations/) and return it to the IU Foundation. (Online orders cannot receive a shirt, but are still welcome.)

Department polo shirt modeled by Markus Dickinson. *Photo: Stephanie Dickinson*