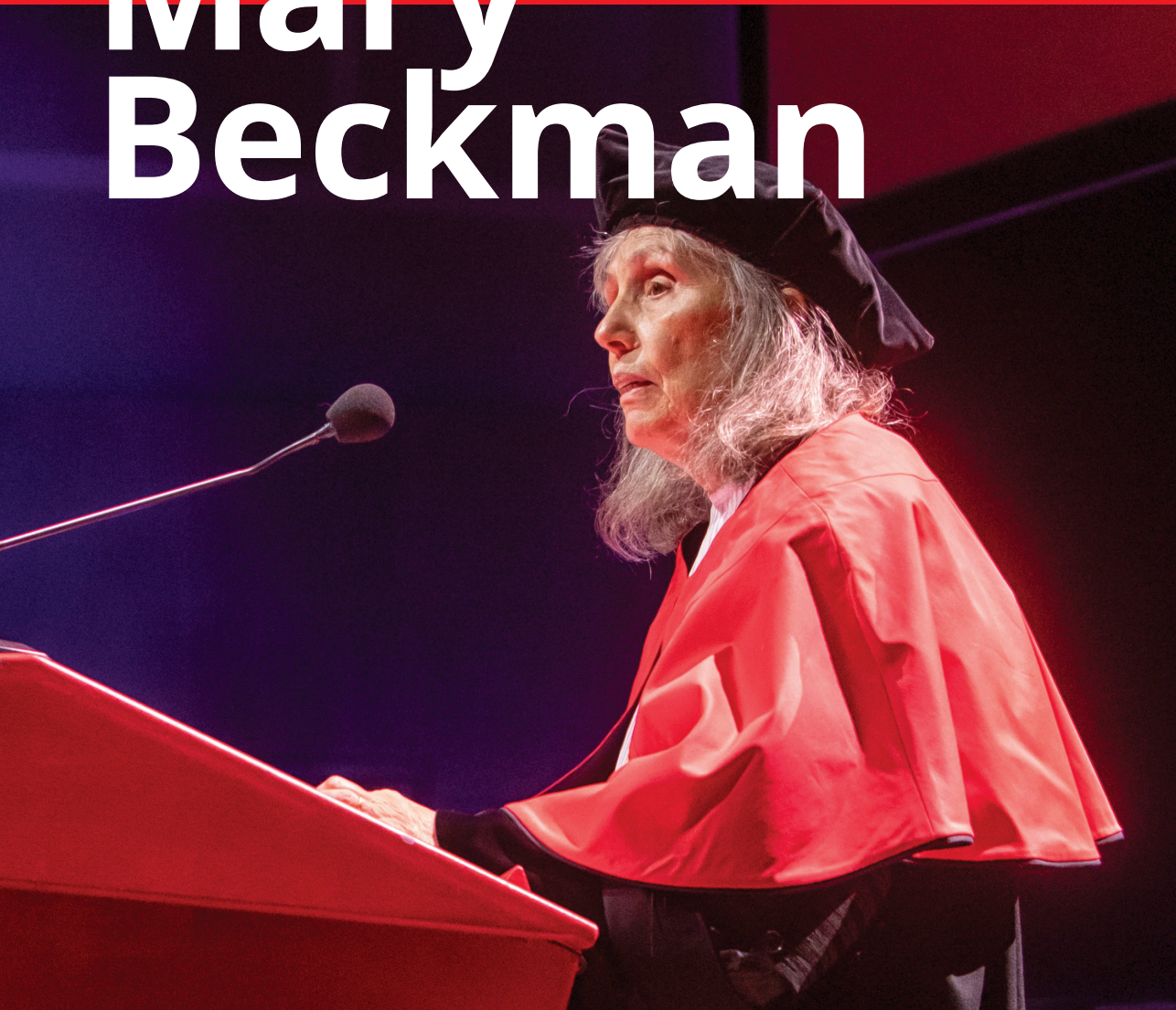


Honorary
Doctorate
Mary Prof.
Beckman



**RADBOUD
UNIVERSITY
PRESS**

Doctor Honoris Causa Series
Radboud University | Faculty of Arts

Honorary Doctorate Prof. Mary Beckman

Honorary Doctorate **Prof. Mary Beckman**

17 October 2023
De Vereniging in Nijmegen

Radboud University



Honorary Doctorate Prof. Mary Beckman

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Honorary Doctor

Prof. Mary Beckman

Professor emeritus of linguistics (Ohio State University)

Honorary Promotor

Prof. Dr. Mirjam Ernestus

Professor of psycholinguistics (Radboud University)

Foreword

André Lardinois

On Tuesday, 17 October, during the 100th Dies Natalis of our university, Mary Beckman received the degree of Doctor honoris causa. In awarding this honorary doctorate, the Faculty of Arts has the pleasure of adding a renowned linguist to its ranks. Beckman joins other honorary doctors such as writer Adriaan van Dis, classicist Mary Beard, and linguist Petrus van Dun.

The acceptance speech that Mary Beckman delivered during the Dies Natalis immerses the audience in the momentous linguistic revolution that she sparked during her academic career. Beckman shows that research on speech requires an all-encompassing approach – one in which both properties of physics and more traditional linguistic theories play an important role in understanding how speech works.

Prior to receiving this honorary doctorate, Mary Beckman had already fostered a connection with Radboud University and, in particular, our Faculty of Arts. While her visit in October of 2023 may have been the first time she set foot on our campus, Beckman has been invaluable in advising the Centre for Language Studies research institute and has worked alongside the institute's researchers as well. As such, we are immensely proud that she is now connected to our faculty in a way that honors her achievements.

André Lardinois
Acting Dean of the Faculty of Arts

Foreword

Enny Das

Throughout her career, Mary Beckman has made innumerable contributions to the field of linguistic research and has changed its course in doing so. On top of explicating the link between the two fields of research which are fundamental to speech research, Beckman has also done a lot of research on child language acquisition. Beckman grew up in a bilingual environment herself, so she speaks from experience.

This experience has been one of the driving forces of Beckman's academic career. She turns complex subject matter into digestible information through the use of clear examples of differences between English and Japanese. Beckman also devotes a lot of time and energy to the education and supervision of young researchers.

We at the Centre for Language Studies research institute take great pride in the fact that Mary Beckman is now officially linked to our faculty. During the week of the Dies Natalis, we witnessed the positive effect that Beckman has on our field of study firsthand. She talked with PhD students about their research, gave us a look at her own research, and even presented that same research to our undergraduates in an illuminating manner.

Enny Das

Director of the Centre for Language Studies

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RECTOR ET DECANI RADBODI UNIVERSITATIS NOVIOMAGENSIS
LECTORIBUS SALUTEM!

IN CHRISTI NOMINE. AMEN. Sapienter consilio a maiestribus nostris institutus est, ut non modo ingeniarum artium studiosi, academicis disquisitionibus sine periculo, honorificam potestatem industriae atque studiorum testimonium, verum etiam homines docti qui studio atque litteris inter omnes excellere et ad artem doctrinaque adjuvandas maxime conlucere, eadem honore significatione Universitates sponte sua decorare possent.

Quamobrem, cum Universitas nostra commemoravisset illustrissimam

Mariam Esther Beckman

Natam in Japonia, in urbe Kyoti, prid. Kal. Oct. MCMLIII, doctorum honoris causa et decretum est.

Professor Beckman praesens renovavit disciplinas quae perscrutantur linguam europaeam cognoscimus: in vestrum aere affluere et systema et qualitates corporales effluere sermone atque libris perscrutanda consuevit. Eadem insuper fructus foretque non qui gradum recenter adepti sunt in Academia, sed modo se clarissimum exemplum praesentem.

Quippe quae hominum doctorum omnium consensus existit laudes meruerit et digna sit quae ab Universitate nostra insigni laurea decore augeretur, Nobis, qui causam honestissimam adjuvamus, summis honoribus et tribuere placuit.

Quapropter Nos pro potestate nobis concessa eandem

Mariam Esther Beckman

DOCTOREM HONORIS CAUSA

solummodo modo itaque creavimus et remuneravimus et ei concessionem quicquid iuris et honoris legitime creato doctori vel lege vel more tribui solet.

Causa rei quo sit firma instatque fides, Diploma hoc manu Rectoris subscriptum et nostro Universitatis sigillo confirmationem et tradendum curavimus.

Datum Noviomagi, in celebranda festivitate Universitatis nostrae diei natalis centesimo, a.d. XVI Kal. Nov. MCMXXIII

Rector

J.M. Sanders
Prof. J.M. Sanders

Promotor

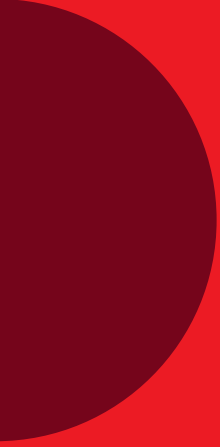
M.T.C. Ernestus
Professor M.T.C. Ernestus



MIRJAM ERNESTUS

LAUDATIO





MIRJAM ERNESTUS

LAUDATIO

Dear Professor Beckman, dear Mary,

Today we celebrate the 100th anniversary of the Radboud University. This university's anniversary would not be complete without an honorary doctor in the language sciences. We feel privileged that you agreed to become an honorary doctor of Radboud University.

You have contributed so much to the language sciences. At the start of your career, you focused on prosody, especially the primary and secondary stresses and tones of words and the intonation contours of utterances. You were one of the developers of the ToBI (Tones and Break Indices) system. This set of conventions for transcribing and annotating the prosody of speech ensures that researchers from very different fields, including linguists and engineers, have a common system with which to annotate large collections of speech and thus to collaborate with each other. Producing this system at a time when



most researchers strictly worked in their own research area and in which interdisciplinary research was a real exception, the group developing ToBI was ahead of its time by many years. The ToBI system and the larger framework that it inspired has had an enormous impact on the language sciences. Its relevance and viability are evident not only from the nearly two thousand citations of the original 1992 article describing it, but also from the criticisms that have been formulated and the adaptations that have been proposed since then. With the field of language sciences developing rapidly, hardly any researcher can claim that one of their contributions from thirty years ago is still sufficiently relevant to be the topic of complete chapters in present-day handbooks, but you can.

Your passion for interdisciplinary research is also evident in the *Conference on Laboratory Phonology* (LabPhon) series that you started together with John Kingston. The aim of this conference series was to encourage researchers to study the formal system and physical properties of speech together because they influence each other. Before you started this conference series, these two aspects were assumed to be completely independent from each other. They were studied in separate subdisciplines, with very little knowledge exchange occurring between them. The LabPhon conference series has been an enormous success: in June 2024, its 19th edition will take place in Seoul, and again more than a hundred attendants are expected. The conference proceedings were first published in a book series, and you edited the first book in this series together with John Kingston. In 2004, the book series grew into the fully open access and flourishing journal, *Laboratory Phonology*. Moreover, the conference series grew into an association, the *Association for Laboratory Phonology*, which has hundreds of members. The founding of laboratory phonology has truly led to a paradigm shift in language science.

While being one of the most important researchers of the laboratory phonology community, you remain highly accessible to others. You continued collaborating with other researchers, initially mostly on prosody, later also on how children acquire their native languages. In addition, you are a shining example of how to support junior researchers. You support them by brainstorming with them on research questions, by providing advice on how to best conduct research, and by encouraging them in new developments. I have been fortunate to experience that you treat all researchers equally, not restricting your support to your own students.

You continue to call attention to the importance of investigating other languages beyond just those that are most commonly studied. In addition, you insist on taking into account that researchers from non-Anglo-Saxon countries have different cultural backgrounds and that English native speakers have to show patience in their conversations with non-native speakers of English. This way you make the field of laboratory phonology inclusive and give opportunities to researchers from different cultural and linguistic backgrounds.

It is a great honor that someone with these qualities and achievements and who has materialized all the principles that we find important at Radboud University has agreed to become an honorary doctor at our university.



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Mariam Esther Beckman

DOCTOREM HONORIS CAUSA

soleni modo ritaque creavimus et remanuvimus et ei concessimus quicquid iuris et honoris legitime creato doctori vel lege vel more tribui solet. Cuius rei quo sit firma testataque fides, Diploma hoc manu Rectoris subscriptum et maiore Universitatis sigillo confirmatum ei tradendum curavimus.

Datum Noviomagi, in celebranda festivitate Universitatis nostrae diei natalis centesimo, a.d. XVI Kal. Nov. MDCXXIII

Rector
[Signature]
Profesor P.M. Sanders

Promotor
[Signature]
Profesor M.T.C. Ernesta



**CERTIFICATE HONORARY
DOCTORATE**





**CERTIFICATE HONORARY
DOCTORATE**

**GREETING TO THE READER
FROM THE RECTOR AND DEANS OF RADBOUD
UNIVERSITY NIJMEGEN**

By virtue of the authority of our predecessors, an academic degree may be conferred upon individuals who have distinguished themselves in their academic and scientific pursuits and successfully completed the academic requirements. Universities may also choose to confer such an academic distinction upon individuals who have excelled in the arts and sciences and who have made a significant contribution to the promotion thereof. For this reason, our university has decided to confer an honorary doctorate upon the illustrious

Mary Esther Beckman

Born in Kyoto (Japan) on September 30, 1953

Professor Beckman pioneered a paradigm shift within the study of speech and of language acquisition: the system and physical properties of spoken language depend on each other and are best studied in tandem. In addition, Professor Beckman is a shining example of a caring and supportive mentor for junior researchers.

By consensus of all learned people, she is deserving of the highest praise and is therefore being awarded the most honourable of academic distinctions. For this reason, and by virtue of the authority vested in us, we hereby present the degree holder with this honorary doctorate and confer upon her all associated honours and rights accorded by law and custom.

This certificate, signed by the Rector Magnificus and authenticated by the university seal, has been presented to the degree holder as permanent and valid proof of their achievements.

Issued in Nijmegen on October 17, 2023 on the occasion of our university's 100th anniversary.

Rector

Professor J.M. Sanders

Promotor

Professor M.T.C. Ernestus



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Rector

Promotor

Professor J.M. Sanders

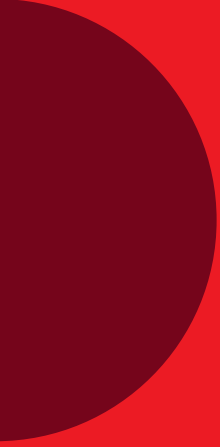
Professor M.T.C. Ernestus



MARY BECKMAN

ACCEPTANCE SPEECH





MARY BECKMAN

ACCEPTANCE SPEECH



Good afternoon and thank you for including me in your centennial celebration of the founding of this university. I am deeply honored to receive this honorary doctorate and humbled by the description of my contributions to speech research.

The first time I was here in Nijmegen was 23 years ago, when the university hosted the 7th Conference on Laboratory Phonology. This is an international series that we have held roughly every two years since 1987, with the nineteenth one scheduled for next year in Seoul, Korea.

When we started the series, our aim was to foster dialogue between two groups of speech researchers. One group – the “phonologists” – focused on representing how linguistic constructs such as consonants, vowels, syllables, and intonational melodies might be organized as abstract patterns in the mind. The other group of linguists – the “phoneticians” – focused on modeling how

the physical properties of speech allow speakers to convey these patterns to listeners. Phonologists must account for the ways that abstract patterns differ across dialects and languages. Phoneticians must account for the ways that vocal tracts differ between men and women and across the lifespan. These differences make speech an archetypal mind-body problem.

For many decades, there had been institutional barriers inhibiting a more unified approach to this mind-body problem. For example, in the United States at the time, phonology was taught as a core part of the curriculum in every department of linguistics, but phonetics was typically taught instead as a part of the curriculum in speech pathology in departments of speech and hearing science.

When we organized the first conference, we tried to overcome these institutional barriers by scheduling five half-day sessions with a diverse group of scholars presenting position papers on some question at the boundary between phonetics or phonology followed by several commentary papers. We also scheduled as much time for discussion by the audience as we did for discussion by the commentators. Every subsequent conference has adopted a similar structure, and the community that has developed from this biennial exchange is characterized by encompassing a wide range of backgrounds, approaches, and viewpoints with the shared goal of understanding speech and its role in human communication and in human communities.

Two other characteristics of the laboratory phonology community are that we have a deep gratitude to scholars who came before us and also to the scholars who will come after us. We respect our elders and encourage proper citations to earlier scholarship. We also respect our youth and have a practice of asking experienced researchers to refrain from speaking in the discussion periods until at least two younger researchers have been given a chance to make their comments.

A third characteristic is that the conference organizers encourage scholarship on a wide range of languages and language families. This characteristic seems especially important to me because I grew up speaking two languages that are very different from each other in the ways in which sounds, syllables, and words are organized into utterances.

To give you an example, the English word *fish* is a single syllable, which takes me about a second to produce. When I say it all by itself, I might produce a falling pitch pattern. By contrast, the corresponding Japanese word *sakana* takes no more time for me to say, but it is three syllables. Also, I say it with a rise in pitch to a plateau that extends to the end of the word. Modeling these different rhythms and melodies was the subject of my dissertation research and of a subsequent research monograph.

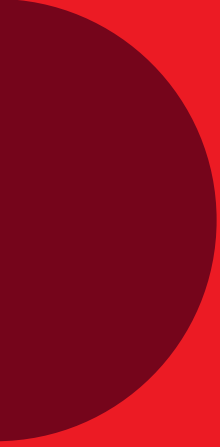
Growing up with two such rhythmically different languages made me keenly aware that speakers do not exist in isolation. Rather, what we do when we speak is to exercise abstract knowledge and motor skills that come from our induction into a speech community. That is, unlike our closest non-human primate relatives, human infants do not come into the world knowing how to produce all the “words” of our species. To communicate with our conspecifics, we must learn the vocal patterns of a specific speech community. So, more recently, I have done research on how cross-language differences shape the kinds of immature productions that two- and three-year-old children make as they learn the sound systems of their first languages.

To summarize, each human infant builds a vocabulary and a grammar of how to say and hear the words and phrases of the language being spoken by the infant’s caregivers and by the larger social circles that the infant grows into. This means that we must study speech in the context of human speech communities, and it is a fundamental reason why understanding speech requires a unified approach shared by a diverse research community.



CURRICULUM VITAE





CURRICULUM VITAE

My research broadly concerns prosody, defined as the raw organizational structure of speech. I have worked with many colleagues and students to analyze speech melodies and how they are coordinated with the rhythms of lip and tongue movements to encode hierarchies of language-specific structures, from sequences of phrases within a conversation or a monologue down to the vocal gestures that produce consonants and vowels. We have looked at how prosodic patterns differ across language varieties and how these differences might be related to language change over time. We have also looked at how coordinative structures for consonants and vowels develop as a young child simultaneously grows a vocabulary and builds a “grammar” for analyzing words into smaller parts that can be recombined to learn new words. Most recently, I have collaborated with primatologists to begin to look at the structure of vocalizations produced by our closest non-human primate relatives.

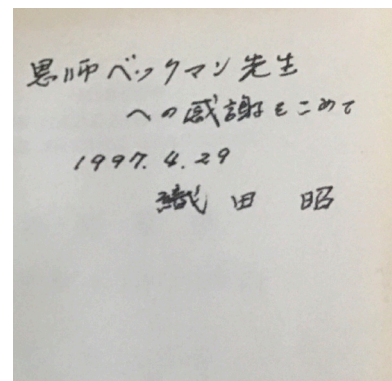
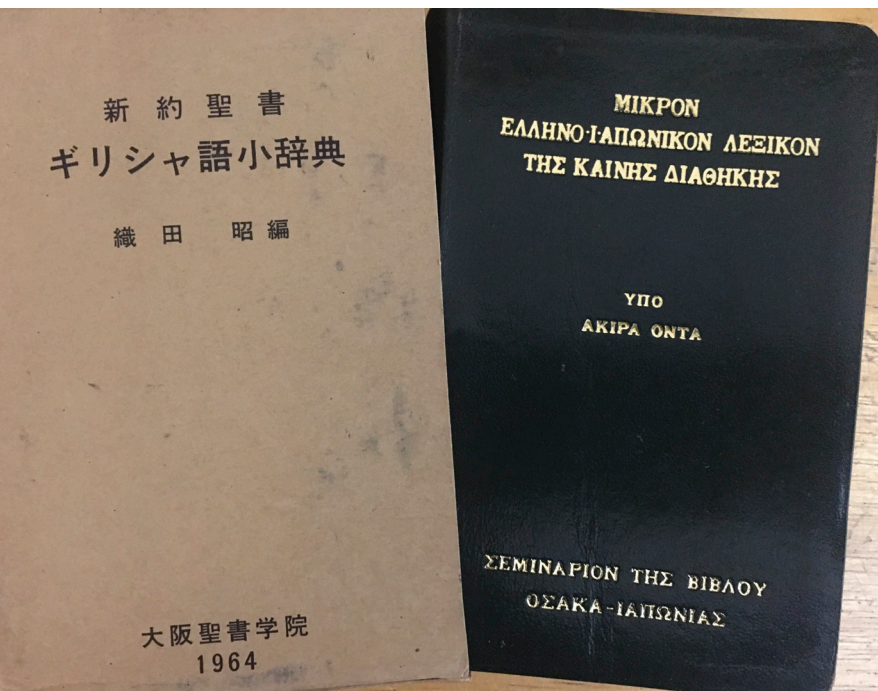
A grounding in philology

As was the case for many linguists of my generation, I came to the field first through the study of a particular language and of the literature written in that language over the course of its history. In my case, the language was Japanese, which has a written literature that goes back more than a millennium. A facile explanation for this path would be to note that I and my three siblings were all born in Kyoto and lived for most of our first two decades in western Japan. (My two sisters live there still.) A more complete explanation, however, would begin by acknowledging my debt to the first linguists in my life and to their mastery of several other even more ancient literatures.

My father, George H. Beckman, studied Hebrew and Koine Greek with Toyozo Nakarai at the Butler School of Religion in Indianapolis, Indiana, where he also met my mother. Prof. Nakarai married my parents in the school's chapel in 1947 and convinced them to emigrate to Japan in 1948 to be part of the rebuilding of the Osaka Bible Seminary, which had been destroyed, like much



My parents with Prof. Nakarai before they emigrated to Japan in 1948 (left); my parents with my brother, sisters, and me (standing in front of our father) in Kyoto sometime in the late 1950s (right).



The box and cover of Akira Oda's Greek-Japanese lexicon (left) and the inscription on the flyleaf of the front cover of my copy (right).

of the city, in the bombings of 1945. My father established the seminary's Greek program and encouraged his student Akira Oda to compile the first Greek-Japanese dictionary, which was published in 1964. Although my older sister was the only one of his four children who later followed our father's example of studying Hebrew and Greek at university, we all were exposed to the value of such learning and to my father's gentle, nurturing style as a teacher.

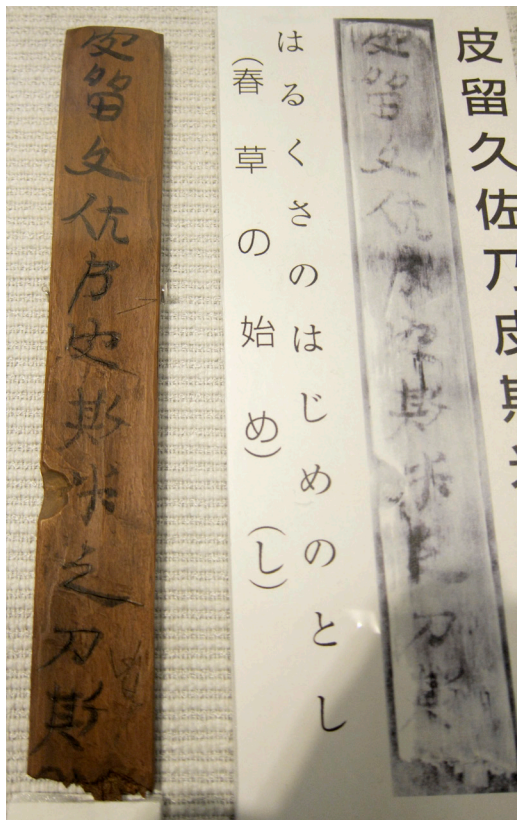
My husband, John S. Cikoski, also lived in Kyoto for some time, supported by a Fulbright scholarship to access materials in the Kyoto University library for his dissertation research, which was on Classical Chinese, defined as "the language of China's 'Classical period' – roughly 500 B.C.-250 B.C." In his dissertation, he described a formal model of the grammar of the language and provided a roughly 1500-word glossary using the word classes specified in said model. He refined the model in papers published over the next decade and then went on to devote much of the second half of his life to expanding that 1500-word glossary into his three-volume *Lexicon of Classical Chinese*. First, however, he convinced me to come to the United States when he returned to his home country in 1972. Listening to him describing his research inspired me to attend university.

So, in January 1974, I entered the undergraduate program in what is now the Department of East Asian Languages and Cultures at the University of California, Berkeley, choosing Japanese as my major because I wanted to correct a deficiency. Specifically, even though Japanese was one of my two first languages, I was functionally illiterate in the language because my primary and secondary education had been in English. Over the next four years, I took courses to be able to read poems, essays, and novels written in both Modern Japanese and in older forms of the language, as well as courses in Mandarin Chinese, Classical Chinese, and Latin. I also took several introductory classes in the Department of Linguistics, including one that John Ohala taught using the first edition of Peter Ladefoged's *A Course in Phonetics*, which had just been published. I then

spent a scholarship year at Tsukuba University (in northeastern Japan) reading the *Man'yōshū* cover to cover several times, making notes for what became my master's thesis, on Kungana evidence for the number of phonemically distinct syllables in Old Japanese.

Old Japanese poems and the *man'yōgana* writing system

The *Man'yōshū* is the oldest extant collection of poems in Japanese, compiled for the imperial court in Nara from earlier smaller collections, and preserved by scholar-copyists over the centuries after the capital moved to Kyoto in 794. The poems in the *Man'yōshū* are written using Chinese characters to encode the strings of syllables in one of two ways.



This photo shows the first eleven syllables of a poem written on a wooden strip dating from about 650 A.D. The strip was uncovered at an excavation site for the Namba Palace in Osaka in 2006, and, at the time, it was the oldest known extant writing in *ongana*.

Photo by Tomoyuki Uchida from his free-stock database at <https://www.yunphoto.net/jp/photobase/yp15137.html>.

In the *kungana* encoding that is more common in the older chapters of the *Man'yōshū*, a character is used logographically, to write some Japanese word that might translate the Chinese word written with the character. To give an analogy, if modern scribes were to adapt the Chinese writing system to write modern English in this way, they might use the character 目 (Mandarin *mù*) to write the English words *eye* or *visual* and the character 的 (Mandarin *dì*) to write the English words *aim* or *target*, so that the sequence 目的 might write the phrase *visual target*.

In the *ongana* encoding that is used for most of the later chapters, by contrast, each character is used phonographically, to write a Japanese syllable that sounds like the one-syllable Chinese word written with the character. The English analogue would be to use the sequence 目的 to spell out the two syllables of the word *moody*.

There were sets of characters that were conventionally used in these *ongana* spellings, and these are the basis for the later *hiragana* syllabary that is still used today. The existence of two distinct sets of characters corresponding to some *hiragana* symbols suggests that there were more different syllable types in early Old Japanese than in the Middle Japanese of subsequent imperial poetry collections. For example, different sets of characters were used in the *ongana* spellings for the words meaning 'this' versus 'child'. Both of these words are written today with the *hiragana* symbol 子 (pronounced [ko]), and many scholars suggest that the different sets of *ongana* characters reflect a contrast between the pronunciations [ko] for 'this' versus [kwo] for 'child' in early Old Japanese – a contrast that was lost some time before the emergence of the *hiragana* writing conventions for Middle Japanese.

For my thesis, I catalogued all instances of Chinese characters being used as *kungana* in the *Man'yōshū* and then analyzed the subset of those instances in which the character also indirectly encoded the sound of the intended

Japanese word by making a pun. The English analogue for these puns would be for a scribe to use the character 目 to write not just the word *eye*, but also the word *I* or the first syllables of the words *idle* and *ibex*. If the scribe uses the character 目 to write the first syllables of the words *olive* and *opera* as well, we might take that as evidence that the scribe speaks a variety of English that has lost the contrast between the initial vowels in *ibex* versus *opera*. I interpreted the many instances of such “imperfect” puns in the first chapters of the *Man'yōshū* as evidence that contrasts between pairs of Old Japanese syllables that later merged into single Middle Japanese syllables were already being lost when those earliest chapters were being transcribed.

Becoming a phonetician

After this extended foray into rather solitary philological research on the sound system of an ancient language, I entered the doctoral program in linguistics at Cornell University, where I took advanced courses in subfields such as phonology (taught by Charles Hockett), historical linguistics (taught by Jay Jasanoff), and morphology (taught by Bob Ladd). There was no course in phonetics, but I was able to build on the exposure to acoustic phonetics from my course at Berkeley with John Ohala by reading articles in journals such as *Phonetica*, *Journal of Phonetics*, and *The Journal of the Acoustical Society of America* as I explored topics for my dissertation research. And I was very fortunate to have Frans Van Coetsem as my dissertation supervisor, as he encouraged me to forge my own path in figuring out what methods to use to address the topic that we finally settled on. I also worked for Susan R. Hertz on some of her speech synthesis consulting contracts; published my first scientific journal article (“Segment Duration and the ‘Mora’ in Japanese” in *Phonetica*); and collaborated with fellow students Stuart Milliken, Katharine Davis, and Atsuko Shoji to produce the inaugural volume of the *Working Papers of the Cornell Phonetics Laboratory*.



Sameer ud Dowla Khan

@SameerudDowla



My academic lineage, as far back as I can figure out online twitter.com/olimould/status...



Sun-Ah Jun's student Sameer ud Dowla Khan (my "grandstudent") posted this montage of his "academic lineage" in 2020 and then asked me how Frans van Coetsem came to supervise a dissertation on prosody in the field of phonetics. I explained that he was one of the few who understood the hypothesis that I was trying to develop, because of "his background of acquiring two languages in childhood with extremely different prosodic structures."

One of the papers in that volume came out of the work Sue and I did on developing speech synthesis rules for Japanese, rules which Sue and I had described more generally in our co-authored paper in the *Proceedings of the 1983 International Conference on Acoustics, Speech and Signal Processing*. Two other papers described experiments that I had helped Katharine and Atsuko design and conduct in a seminar on phonetics that the department had assigned me to teach in my last two semesters in the program. Both Katharine and Atsuko asked me to also help them write those papers, and Atsuko agreed that we should expand the literature review in her paper to provide the theoretical

framework for our interpretation of her experimental results in the manuscript that became our co-authored paper “Spectral and Perceptual Evidence for CV Coarticulation in Devoiced /si/ and /syu/ in Japanese,” published in *Phonetica*. In short, those years in the Cornell Phonetics Laboratory exposed me to the joy and value of collaboration and all but sixteen of the later published papers listed on my curriculum vitae have been co-authored.

My most long-lived collaborations have been with Janet Pierrehumbert and Jan Edwards. I started working with each of them while I was a postdoc in Osamu Fujimura’s Department of Linguistics and Artificial Intelligence Research at AT&T Bell Laboratories in Murray Hill, NJ. My early work with Janet and Jan helped me begin to flesh out my understanding of prosody as the raw organizational structure of speech.

I had suggested this understanding in my dissertation, but it was not until Janet and I were designing the experiments and analyses that we first described in our 1986 paper “Intonational Structure in Japanese and English” (*Phonology Yearbook*) that I was able to state the idea in any coherent way.¹ Janet’s and my 1988 monograph *Japanese Tone Structure* laid out the experiments and analyses in enough detail to make them reproducible and added formal models (using graph theory and speech synthesis) to account for the components of intonational melodies and their coordination with syllables and phrase edges.

My early work with Jan complemented my early work with Janet by focusing on the consonants and vowels that are coproduced with intonational melodies in English. We compared the kinematics of jaw movements during productions of the sequence [pap] at the beginnings of sentences such as *Pop, opposing the question strongly, refused to answer it.* versus *Papa, posing the question loudly,*

1 See my preface to the monograph that came out of my dissertation, where I thank Janet for “discussions on intonation and accent in general and her collaboration with me on intonation and accent in Japanese [which] have been a major impetus in the development of my understanding of how these two prosodic categories relate” [*Stress and Non-Stress Accent* (1986), pp. xii-xiii].

refused to answer it. versus *Papa posed the question loudly, and then refused to answer it.* In the first of these sentences, the sequence [pɑp] is the one-syllable word *Pop*, standing alone in the intonational phrase that ends at the comma. Because this is the only syllable in the phrase, there is necessarily a pitch accent coordinated with the jaw-opening gesture from the phrase-initial consonant into the vowel and the jaw-closing gesture from the vowel into the phrase-final consonant. In the second sentence, the sequence [pɑp] is the beginning of a two-syllable word [pɑpə] *Papa*, so the first syllable is accented, but the second consonant is not phrase-final. In the third sentence, the two-syllable word [pɑpə] is not phrase final and the first pitch accent in the intonation phrase might be coordinated instead with the following word *posed*. We found differences in jaw movement suggesting that, in English, vowel lengthening as a cue to a following intonational phrase boundary is pronounced differently from vowel lengthening as a cue to an associated intonational prominence (accent). We interpreted the results in terms of a theoretical framework developed by Louis Goldstein, Cathe Browman, and Elliot Saltzman that models coordinative relationships between consonant and vowel gestures over time as part of the abstract mental representation of syllables, words, and larger phrases.



Janet Fletcher (then a postdoc on my first grant with Jan Edwards), Hsien Pan (then an MA student in Linguistics), and Maria Swora (then an undergraduate student) working together in the Ohio State University Linguistics Laboratory in 1988. Maria was working on the ToBI transcriptions for a database of spontaneous speech that we had recorded for a paper she co-authored called “Stress Shift, Stress Clash, and Polysyllabic Shortening in a Prosodically Annotated Discourse.” She also used the corpus in her 1990 B.A. thesis *The Intonation of ‘Okay’ as a Discourse Marker*.

(This was the same theoretical framework that Atsuko Shoji and I had invoked in our paper on vowel devoicing in Japanese.)

In September of 1985 I was offered a term-limited position as an Instructor in the Ohio State University Department of Linguistics to teach Ilse Lehiste's courses while she focused on chairing the department during her last two years before retirement. I accepted the offer and moved from Bell Labs because the hiring committee made clear that they were not hiring me just to teach undergraduates. They asked me to continue to do research and to work with doctoral students, and they could do that even in my term-limited position because of two assets that Professor Lehiste and her colleagues had negotiated as they established and expanded the department in the 25 years before I was hired. First, the department had been given funds to build a Linguistics Laboratory that was the same kind of shared workspace as the Centre for Language Studies Laboratories at Radboud University. Second, the department regularly received funding from the university to support many graduate students as research assistants or as teaching assistants.

These assets meant that I did not have to already have external funding to set up my own laboratory and to provide studentships. Instead, I could spend weekends back at Bell Labs finishing *Japanese Tone Structure* with Janet while writing my first grant proposal with Jan. This was the grant that helped support Ken de Jong's dissertation, *The Oral Articulation of English Stress Accent*, but the availability of department funds for studentships also meant that I could advise students whose dissertations were not directly related to my own funded work – dissertations such as Keith Johnson's *Processes of Speaker Normalization in Vowel Perception*, Sun-Ah Jun's *The Phonetics and Phonology of Korean Prosody*, and Sookhyang Lee's *The Role of the Jaw in Consonant Articulation*. Not being pressed to find external funding for every advisee meant also that I could agree to take over from Marcel van den Broecke as the sole editor of *Journal of Phonetics* from 1990 through 1994. That role of editor was a lot of hard work, but it taught me that there is nothing like helping colleagues revise

research articles after peer review to learn a great deal about areas of phonetics that are not related to my own research.

Building the laboratory phonology community

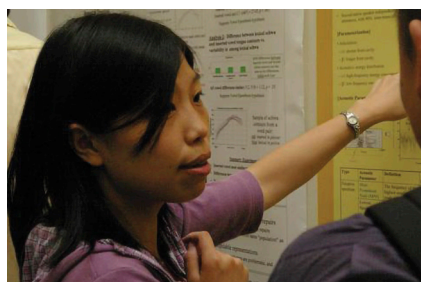
Other work that I took on at this time included a collaboration with John Kingston to organize the First Conference on Laboratory Phonology, held at Ohio State University in 1987, and then to edit *Papers in Laboratory Phonology 1*, a collection of papers developed from some of the presentations at the conference that was published by Cambridge University Press in 1990. I also participated in a sequence of four workshops on “Prosodic Transcription” that were held in the MIT Lab for Computer Science in 1991 (organized by Victor Zue); at NYNEX Science and Technology in 1992 (organized by Kim Silverman and John Pitrelli); in the Department of Linguistics at Ohio State University in 1993 (organized by me); and in the Department of Electrical, Computing, and Systems Engineering at Boston University in 1994 (organized by Mari Ostendorf, Nanette Veilleux, and Stefanie Shattuck-Hufnagel).

John Kingston’s and my goal in organizing the First Conference on Laboratory Phonology was to encourage dialogue across the subfields of phonetics and phonology in order to promote an interdisciplinary community and a hybrid methodology for studying issues at the boundary *Between the Grammar and the Physics of Speech* (the subtitle for the edited book). We ambitiously included the word “First” in the name of the conference (and added the “1” to the title of the edited collection of papers from the conference) because we hoped that others would take up the same goal. Indeed, Bob Ladd announced at the end of the last session that he and Gerry Docherty would be organizing the Second Conference on Laboratory Phonology at the University of Edinburgh in 1989, thus launching the LabPhon conference series that is now in its fourth decade.

Gerry and Bob also edited *Papers in Laboratory Phonology 2: Segment, Gesture, Tone* (1992) and instituted the practice of rigorous external peer review of the



Ohio State University alumni and affiliates at LabPhon 10 in 2006.



My student Fangfang Li presenting her poster (left) and me sitting next to Janet Fletcher's student Bruce Birch and arguing with Jonathan Harrington about dynamic models at LabPhon 10 (right).

written version of each paper from the conference that was submitted for potential inclusion in the book. Carlos Gussenhoven and Natasha Warner continued this practice when they moved publication of the book series from Cambridge University Press to De Gruyter Mouton after LabPhon 7. This made it easy to transition in 2010 to the peer-reviewed journal *Laboratory Phonology*, the flagship journal of the Association for Laboratory Phonology which was established after LabPhon 10, which was held in Paris in 2006.

LabPhon 7 was held in Nijmegen at the end of June 2000. In a paper that Janet Pierrehumbert, Bob Ladd, and I wrote just before LabPhon 7, we described the enterprise as follows: “Research activities within laboratory phonology involve the cooperation of people who may disagree about phonological theory, but who share a concern for strengthening the scientific foundations of phonology through improved methodology, explicit modeling, and cumulation of results.”

The development of the “Tones and Break Indices” (ToBI) framework from the four workshops on “Prosodic Transcription” is a good example of this kind of cooperation. Our goal in holding the workshops was to develop conventions for marking English speech databases to be able to recover information about pronunciation – pitch accents, intonational phrasing, and so on – that cannot be recovered by feeding an orthographic transcription of the words into an online dictionary tool. We started by having all participants annotate a common set of recordings before each workshop and then working through the possible reasons for differences between annotations by different (groups of) participants to iteratively refine and test the conventions. The differences at the first workshop were very large, because there was no discussion beforehand about what aspects of prosody to annotate using which of several in-house conventions used at the different speech laboratories represented by the participants. However, we achieved enough of a consensus at the first workshop that we could calculate a reliably high degree of inter-transcriber consistency for the recordings circulated before the second workshop. (It also helped that many of the participating labs had access to XWaves – a waveform editing / annotating platform that David Talkin had developed and used to write an easily modified transcription script with a schema that reflected the overall design of the conventions.)

The prosodic transcription conventions that we developed in these workshops combined the tags that Janet Pierrehumbert and I had used for the components of the intonational melody described in our 1986 paper (the “Tones” part of the name) with conventions developed by Mari Ostendorf, Patti Prince, and Stefanie Shattuck-Hufnagel for marking the perceived degree of separation between successive words (the “Break Indices” part of the name). Adopting this kind of two-part framework allows researchers to develop intonational models and annotation conventions for other varieties of English and for other languages without committing prematurely to a particular theory about the relationship between the proposed components of the melody and proposed prosodic constituents such as intonational phrases, phonological words, and syllables. So even as the English conventions were being stabilized over the

course of the four workshops, the two-part ToBI framework was being applied to develop annotation conventions for speech databases in other languages, including Korean, using Sun-Ah Jun's dissertation model, and Japanese, based in this earlier version on Janet's and my model.

The earliest versions of the Korean and Japanese ToBI framework transcription systems were presented by collaborative groups at a workshop on prosodic transcription held just before the 13th International Congress of Phonetic Sciences in Stockholm in 1995, and there were collaborative groups hammering out the details of prosodic transcription systems for speech databases for other languages there as well, including Dutch, German, and Italian. Four years later, Sun-Ah Jun organized a similar satellite workshop before the 14th ICPhS in San Francisco, where researchers presented work applying the ToBI two-part design in more basic research on other languages, including marginalized or endangered indigenous varieties such as the Rugao dialect of Mandarin Chinese and Biniñ Gun-wok. This extended use of the framework has continued over the subsequent decades, so that we now have enough information to begin to see how melodies or rhythms can differ or converge across dialects and languages. Examples of this use include the collaborative research by many teams working with Pilar Prieto to develop the *Interactive Map of Romance Intonation*² and the twenty-six chapters by specialists on at least that many language varieties that Sun-Ah Jun compiled in her books *Prosodic Typology* (2005) and *Prosodic Typology II* (2014).

In the meantime, the ToBI framework conventions for English were being used to explore variation across dialects other than the North American varieties that had provided most of the examples for developing the original conventions. For example, Janet Fletcher and colleagues used these conventions to transcribe the melodies in spontaneous dialogues that had been recorded as

2 See: <https://prosodia.upf.edu/iari/mapa.html>.

part of the Australian National Database of Spoken Language. They also annotated the dialogues for “speech acts” and discourse structure and found several intonational contrasts that are unique to the Australian (and New Zealand) dialects. In their chapter in the 2020 *Oxford Handbook of Language Prosody*, Martine Grice, James German, and Paul Warren review these and other differences that have been discovered by trying to apply the original ToBI framework conventions to “Intonation Systems Across Varieties of English,” as their chapter in the handbook is called. They conclude that, while the ToBI framework is useful, researchers must exercise caution in adapting any particular ToBI system to a variety different from the variety for which it was developed.

This echoes the notes of caution that Julia Hirschberg, Stefanie Shattuck-Hufnagel, and I emphasized in our chapter “The Original ToBI System and the Evolution of the ToBI Framework” in Sun-Ah Jun’s first *Prosodic Typology* book. The development of a set of ToBI conventions should involve iterative evaluations of the conventions after application to speech produced in styles and contexts other than the original data source. The development of the Japanese ToBI conventions is a good example. The original conventions that we developed at the workshop in Stockholm were based mostly on read speech. Kikuo Maekawa and colleagues revised the conventions (to create the current “X-JToBI” conventions) in order to capture the richer set of intonational melodies observed in the Corpus of Spontaneous Japanese.

Toward a better understanding of the richness of speech variation

The Corpus of Spontaneous Japanese is one of the largest speech databases to have been annotated for prosodic phenomena such as pitch accents, phrase boundaries, and vowel deletion. Its development exemplified three related concerns in the speech technology community. One was an increased emphasis on recognizing speech produced in styles other than the careful reading of lists of words, phrases, and sentences that had been the primary

data source for speech recognition and speech synthesis models prior to the mid-1990s. The second was an increased appreciation of the need to understand the influences on prosody from discourse structure, attentional focus, and so on. The third was an increased awareness of the enormous variation that exists in pronunciation of any given speech sound (such as the consonants [k] or [z] or the vowels [a] or [u]) across different contexts, including different prosodic contexts, and across different talkers, including talkers of different genders and ages and of different language backgrounds.

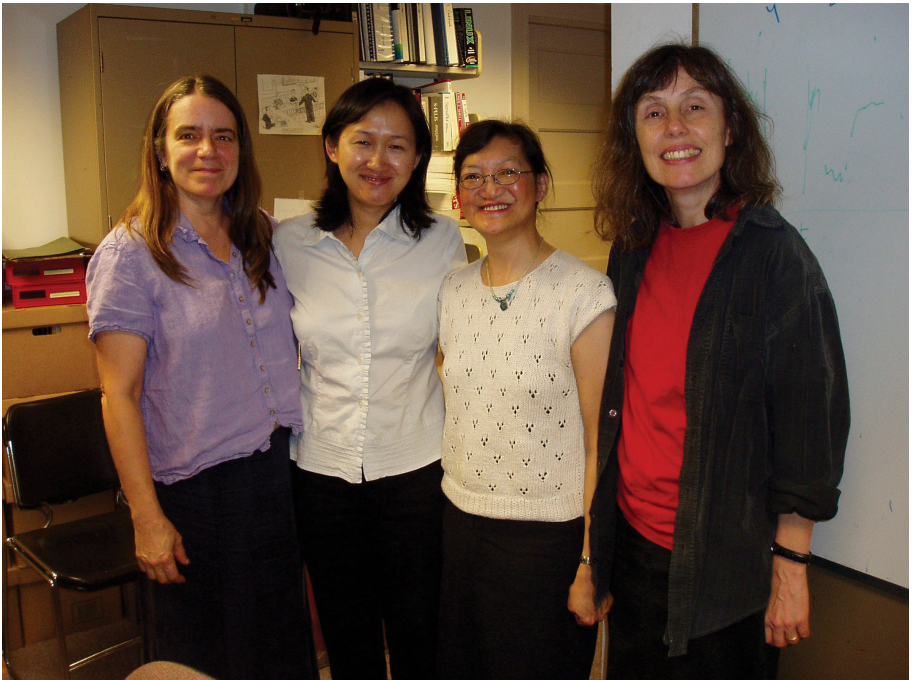


Sitting with Janet Fletcher and Bob Ladd at a satellite symposium before LabPhon 16 in Lisbon in 2018 (left) and with Janet Pierrehumbert in the audience of a plenary session at LabPhon 11 in Wellington in 2012 (right).

In the laboratory phonology community, these concerns were associated with the following developments: (1) the creation of spontaneous speech databases and the increased use of both acoustic measures from phonetics and perception measures from psycholinguistics to explore prosody and its relationship to word structure and to discourse structure; (2) the refinement of psycholinguistic methods to look at the interacting effects of phonological context and imputed speaker attributes on speech perception; (3) the incorporation of these methods into a newly emerging subfield of linguistics – “sociophonetics” – that merged sociolinguistic questions into phonetics (and vice versa); (4) a renewed interest in second language (or second dialect) acquisition and the percept of “foreign accent” (or other dialect); and (5) a renewed interest in first language phonological acquisition and its relationship to vocabulary growth in the individual.



Keith Johnson and me at Shu-hui Peng's graduation (left) and at a party after Mariapaola D'Imperio's graduation (right).



With Shari Speer and Shari's student Lei Xu at a party in the Linguistics Lab after Lei's defense. Majorie Chan (to my right) and I were the two other readers of her dissertation *Phonological Variation and Word Recognition in Continuous Speech*, which focused on Mandarin Chinese.

Keith Johnson's 1988 dissertation was a seminal contribution to work in area (2) – the effects of imputed speaker attributes on speech perception – and many of his students (such as Elizabeth Strand and Molly Babel) have also made contributions in this area and in the development of sociophonetics. Likewise, Sun-Ah Jun's dissertation in 1993 was a seminal contribution to area (1) – the examination of prosody and its relationship to word structure and to discourse structure – and many of her students (such as Taehong Cho and Sameer ud Dowla Kahn) have also made contributions in this area. The following list of thesis titles shows some of the subsequent contributions by my own students to this area. (The language variety studied is shown in square brackets if it is not obvious from the title.)

- Stefanie Jannedy (M.A., 1994). *Prosodic and Segmental Influences on High Vowel Devoicing in Turkish*.
- Shu-hui Peng (Ph.D., 1996). *Phonetic Implementation and Perception of Segmental Coarticulation and Tone Sandhi*. [languages: Southern Min Chinese and Mandarin]
- Gayle Ayers (Ph.D., 1996). *Nuclear Accent Types and Prominence: Some Psycholinguistic Experiments*. [language variety: North American English]
- Rebecca Herman (Ph.D., 1998). *Intonation and Discourse Structure in English: Phonological and Phonetic Markers of Local and Global Discourse Structure*.
- Jennifer Venditti (Ph.D., 2000). *Discourse Structure and Attentional Salience Effects in Japanese Intonation*.
- Mariapaola D'Imperio (Ph.D., 2000, co-advised with Keith Johnson). *Perceptual Considerations on Tone Targets and Their Alignment*. [language variety: Neapolitan Italian]
- Amanda Miller-Ockhuizen (Ph.D., 2001). *Grounding Ju|'Hoansi Phonotactics: The Phonetics of the Guttural OCP and Other Acoustic Modulations*.
- Pauline Welby (Ph.D., 2003). *The Slaying of Lady Mondagreen, Being a Study of French Tonal Association and Alignment and Their Role in Speech Segmentation*.

- Giorgos Tserdanelis (Ph.D., 2005, co-advised with Brian Joseph). *The Role of Segmental Sandhi in the Parsing of Speech: Evidence from Greek.*
- Kyuchul Yoon (Ph.D., 2005). *Building a Prosodically Sensitive Diphone Database for a Korean Text-to-Speech Synthesis System.*
- Wai-Yi Peggy Wong (Ph.D., 2006, co-advised with Marjorie Chan). *Syllable Fusion in Hong Kong Cantonese Connected Speech.*
- Su Ar Lee (Ph.D., 2010, co-advised with Fernando Martinez-Gil). *Absolute Interrogative Intonation Patterns in Buenos Aires Spanish.*

As the list shows, I continued to advise students in this area, but my own direct research contributions after Sun-Ah graduated have been primarily in area (5) – first language phonological acquisition. That is, in the same year that Sun-Ah left to take up her current position in the Linguistics Department at UCLA, Jan Edwards moved to the Speech & Hearing Science Department at the Ohio State University, and we wrote a series of grant proposals that let us design and create databases of speech recordings elicited from young children and from caregivers interacting with their children. We looked at the interaction between differences in the “intrinsic” difficulty of particular consonant-vowel patterns and differences in the (language-specific) frequency of those patterns in the child’s vocabulary or in the speech directed at them.

Our first grant compared children with typical development to children with speech or language disorders, focusing just on children acquiring English. Our second grant compared children acquiring different first languages. This grant built on a collaboration with Keith Johnson’s student Kiyoko Yoneyama to create and analyze a database of recordings of children acquiring Japanese, which led to our 2003 paper “Language-Specific and Language-Universal Aspects of Lingual Obstruent Productions in Japanese-Acquiring Children,” published in the *Journal of the Phonetic Society of Japan*. Then, in 2008, Jan and I collaborated with Benjamin Munson, who had been hired at the University of Minnesota, and Eric Fosler-Lussier (a colleague in the Computer Science



Jeff Holliday and Jan Edwards listening to Pat Reidy explain a proposed model (left). With Asimina Syrika and Peggy Wong (holding her youngest child) after an OSU alumni dinner during the 17th International Congress of Phonetic Sciences in Hong Kong in 2011 (right).

& Engineering Department at the Ohio State University) to win a grant to try to apply machine-learning methods to the cross-language data. This would allow us to build models of the interplay of children’s developing production skills and the way that their immature productions would be perceived by their caregivers via the caregivers’ native language. The following list of dissertation titles shows some of the related contributions by Jan’s and my students:

- Ho-hsien Pan (Ph.D., 1994). *The Voicing Contrasts of Taiwanese (Amoy) Initial Stops: Data from Adults and Children.*
- Benjamin Munson (Ph.D., 2000). *Phonological Pattern Frequency and Speech Production in Children and Adults.*
- David S. White (M.Sc., 2001). *Covert Contrast, Merger, and Substitution in Children’s Productions of /k/ and /t/.*

- Fangfang Li (Ph.D., 2008). *The Phonetic Development of Voiceless Sibilant Fricatives in English, Japanese, and Mandarin Chinese.*
- Eunjong Kong (Ph.D., 2009). *The Development of Phonation-Type Contrasts in Plosives: Cross-Linguistic Perspectives.*
- Asimina Syrika (Ph.D., 2010). *Consonant Cluster Acquisition in Greek: Evidence from Transcription, Perception, and Psychoacoustics.*
- Andrew R. Plummer (Ph.D., 2014). *The Acquisition of Vowel Normalization During Early Infancy: Theory and Computational Framework.*
- Patrick F. Reidy (Ph.D., 2015). *The Spectral Dynamics of Voiceless Sibilant Fricatives in English and Japanese.*
- Jennifer Qian Zhang (M.A., 2016). *Nonsibilant Fricative Acquisition by Bilingual Guoyu-Taiwanese Southern Min Children.*

Jennifer Zhang's thesis used measures that Pat Reidy had developed to reanalyze a database of recordings of children who were acquiring a second language in a bilingual community. These were recordings that Ya-ting Shih had gathered for her 2012 dissertation *Taiwanese-Guoyu Bilingual Children and Adults' Sibilant Fricative Production Patterns*. As the title shows, Ya-ting's database also included productions by adults who had learned Guoyu (Mandarin) as a second language at various ages, and it was designed to simultaneously address questions in area (5) and in area (4) – second language / second dialect acquisition and the percept of accent. I also advised the following other dissertations in this area:

- Jocelyn Hardman (Ph.D., 2010, co-advised with Keiko Samimy). *The Intelligibility of Chinese-Accented English to International and American Students at a U.S. University.*
- Jeffrey J. Holliday (Ph.D., 2012). *The Emergence of L2 Phonological Contrast in Perception: The Case of Korean Sibilant Fricatives.*
- Elizabeth A. McCullough (Ph.D., 2013). *Acoustic Correlates of Perceived Foreign Accent in Non-Native English.*

Keith Johnson, Ken de Jong, and Sun-Ah Jun have also advised many students working in this area. For example, Ken was the supervisor for Cynthia Clopper's dissertation *Linguistic Experience and the Perception of Dialect Variation: Some Effects of Residential History on Dialect Classification*, which became a seminal contribution also to the development of sociophonetics.



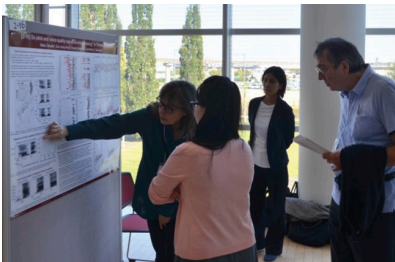
With Brian Joseph and Cynthia Clopper in 2013 after the graduation ceremony for (from left to right) my student Elizabeth McCullough, Brian's student Bridget Smith (*The Interaction of Speech Perception and Production in Laboratory Sound Change*), and Cynthia's student Dahee Kim (*The Production and Perception of Signal-Based Cues to Word Boundaries*).

Circling back to our roots

Another thread that is common to many of the dissertations that I have advised – or that I helped advise as a member of the reading committee – is the focus on non-European languages and particularly on the languages of East Asia. Most of these dissertations focused on the sound systems of the languages, but one focused instead on the writing system. This was Helena Riha's dissertation *Lettered Words and Roman Letter Characters in Chinese Writing: A study of Alphabetic Writing in Chinese Newswires*. I drew heavily on my experience explaining the Old Japanese writing system in my M.A. thesis as Helen and I strategized on good ways to explain the Chinese writing system and the place of roman letters in incorporating loanwords such as X光 (X-ray) into the modern Chinese varieties that she examined.

Over the decades since becoming a phonetician, I have also reconnected regularly to my roots in philology, by applying ideas and methods from laboratory

phonology to deepen my understanding of sound change. An early example is my 1992 paper “The Interaction of Coarticulation and Prosody in Sound Change” that I wrote together with Ken de Jong, Sun-Ah Jun, and Sookhyang Lee for a festschrift for John Ohala. More recently, Eunjong Kong, Kiyoko Yoneyama, and I collaborated with Mieko Takada to apply measures we developed in our work on children’s productions to her large database of productions by several generations of adult speakers of several dialects of Japanese to show sound changes in progress that extend changes that began in Old Japanese.³



Taking my turn explaining our poster on a sound change in progress in modern-day Japanese at the 24th Japanese/Korean Linguistics Conference. My co-author Mieko Takada is standing in the background resting her voice.

In the meantime, my long-time collaborator Jonathan Harrington published his seminal research examining the recordings of Queen Elizabeth II’s annual Christmas message over the years to show that sound change can affect an individual adult speaker. Later, in 2012, he won a European Research Council Advanced Grant to look at sound change and the acquisition of speech by much younger speakers. In 2014, he nominated me for the Anneliese Meier Research Award from the Alexander von Humboldt Foundation. My husband’s failing health made it impossible for me to spend any extended time working with Jonathan in Munich, but we were able to use the award to help support research and activities related to his ERC award, including a satellite workshop at LabPhon 14 on gestural coordination within and between speakers in first language phonological acquisition, as well as a satellite workshop at the 4th Workshop on Sound Change on the topic of language socialization and

³ See our paper “Loss of Pre-Voicing in Modern Japanese /g, d, b/” in *Proceedings of the 18th International Congress of Phonetic Sciences* (2015).

sound change in progress. Jonathan's subsequent ERC Advanced Grants in 2017 and 2023 extend this research to look at human interaction and the evolution of spoken accent and then at the actuation of sound change.



Eating dinner together with Ohio State University Linguistics Lab alumni at a 2019 symposium at Hanyang University, where LabPhon 19 is scheduled to be held. I am sitting between Sun-Ah Jun and Ho-hsien Pan and across the table from Kiyoko Yoneyama, Sookhyang Lee, and Eunjong Kong. To Eunjong's left are Sun-Ah's collaborator Mira Oh, Cynthia Clopper's student Rory Turnbull, and Jeff Holliday (at the head of the table to Sun-Ah's right).

All of this work reflects our appreciation of the origins of modern phonetics, phonology, and sociolinguistics in the work of the 19th-century philologists who developed methods for evaluating relationships among modern languages and models of the sound changes that lead to language splits. This appreciation is shared by the larger laboratory phonology community, as evidenced in the themes of LabPhon 9, which included the exploration of models of how variation within the community and variations over the lifespan relate to sound change.

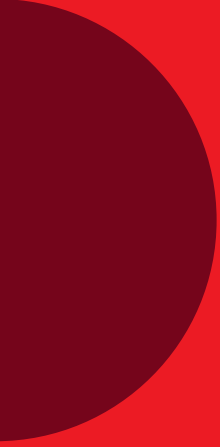
My most recent paper, “Connecting Prosody and Duality of Patterning in Diachrony, Typology, Phylogeny, and Ontogeny,” is a chapter for a festschrift for Jonathan that draws together all of these threads and compares the social functions and phonetic structures of human speech to the social functions and phonetic structures of chimpanzee vocalizations. My understanding of the latter is informed by a collaboration with primatologist Michael Wilson on “Tracking Chimpanzee Pant-Hoot Changes across Time and Space.”⁴

This collaboration began after I retired from teaching and moved to a small town in the southeastern part of the United States to be able to spend more time with my husband during his final years. The collaboration was interrupted by the COVID-19 pandemic, and it is not clear when it can continue, because after I retired, I also began volunteering in a local civil rights organization where I could apply my research skills to our work for social justice. This involvement in the community has increased my appreciation for the richness of speech variation and its role in social connection, but that is a story for a different venue. For now, I look forward to meeting with former students and other colleagues at LabPhon 19, which will be held in Seoul in June of 2024.

4 This was the title of our paper in a special session on “Adapting Methods and Models for Vocal Production Across Human and Non-Human Primate Species” that we organized at a meeting of the Acoustical Society of America in 2018.

**MARY'S VISIT
TO RADBOUD
UNIVERSITY**





MARY'S VISIT TO RADBOUD UNIVERSITY



After receiving her honorary doctorate on Tuesday, Mary Beckman visited the Radboud University campus for the first time the following day. She was received at the Erasmus building and escorted to her temporary office, where she would reside for the rest of the week. At 11:30 a.m., she was given an informal tour of the campus. Several researchers from the Centre for Languages Studies joined Mary on this tour, and numerous spontaneous conversations about a variety of topics within the field of linguistics blossomed throughout the day. Mary got to see the entirety of the campus during this tour; from the Erasmus building to the Museum of Anatomy at the Faculty of Medical Sciences, and from the former monastery Berchmanianum to the High Field Magnatory Laboratory. During the tour, the guides detailed the story of Radboud University's past and present at length. The group had lunch at the hunting room of Huize Heyendaal in the afternoon. After the tour, Mary got started on a long series of meetings

she had throughout the whole week, with individual researchers and small groups of researchers, who discussed their work with her.

On Thursday, Mary had lunch with the PhD students of the Centre for Language Studies. They told her about their research and future plans and engaged in extensive conversations about these topics. These conversations raised numerous thought-provoking insights for both Mary and the PhD students. Later that afternoon, Mary gave a lecture in the *CLS Talks* series. Attendees in the packed auditorium were transported to the world of Mary's research: "Phonetic transparency and structural ambiguity at the base of the prosodic hierarchy." The audience consisted of people from all over the campus, including researchers from the Donders Institute and the Max Planck Institute, as well as visiting scholars from other universities. She explained that consonant sounds such as the [k] at the beginning of the English words *kiss* and *cabbage*, which are traditionally described as universal units of spoken





languages, actually differ across languages in how their component gestures are coordinated with the gestures for neighboring vowel sounds. These cross-language differences are evident in changes when words are borrowed from one language to another. For example, the Japanese word for cabbage is *kyabetsu*. The differences also give rise to different patterns of mispronunciation by young children who are learning to talk. This lecture was followed by a round of drinks, where people delved into further discussions about the topic of the lecture. In the evening, a group of 25 people went to Landgoed Brakkesteyn for dinner. After a congratulatory speech by Professor Enny Das, the company enjoyed dinner together and continued their discussion about the lecture and its contents.

On Friday, Mary gave a lecture to students in the conference room on the twentieth floor of the Erasmus building. As they ate lunch, Mary covered the same ground she outlined in her CLS Talk. The students considered it to be

an outstanding lecture. Afterwards, Mary visited the CLS Labs on the twelfth floor, where she was given a tour of the research facilities equipped with ECG's and eye-tracking hardware, which are used to research language use and development. Immediately afterwards, she visited the brand-new XR Lab, where she had the opportunity to witness the latest advancements in Extended Reality research. She also got to witness the virtual reality facilities firsthand. All throughout the week, Mary engaged in conversations with researchers about their projects and findings.

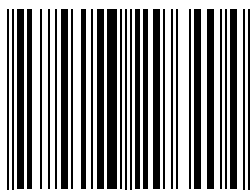
After a busy week, Mary returned to the US on Saturday.

On October 17, 2023, during the 100th Dies Natalis of Radboud University, Mary Beckman received an honorary doctorate from Radboud University. This doctorate was awarded in recognition of her innumerable contributions to the field of linguistics. This edition includes, among other things, honorary promotor Mirjam Ernestus's laudatio, Mary Beckman's acceptance speech, and a detailed recollection of Beckman's professional history.

Mary Beckman made an impact early in her career by launching the Conference on Laboratory Phonology together with John Kingston, which was instrumental in the process of unifying research into the formal system of speech with research into the physical properties of speech. She then went on to co-create the ToBI system for prosody transcription, which allows researchers from many different fields to work and collaborate on speech research. Her academic contributions have fundamentally altered the course of speech research by synthesizing numerous different areas of research that once seemed incompatible.

Honorary promotor Mirjam Ernestus, professor of psycholinguistics: "It is a great honor that someone with these qualities and achievements and who has materialized all the principles that we find important at Radboud University has agreed to become an honorary doctor at our university."

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