

# UC Berkeley

## UC Berkeley PhonLab Annual Report

**Title**

Ilse Lehiste

**Permalink**

<https://escholarship.org/uc/item/2ps07513>

**Journal**

UC Berkeley PhonLab Annual Report, 7(7)

**ISSN**

2768-5047

**Author**

Johnson, Keith

**Publication Date**

2011

**DOI**

10.5070/P72ps07513

## **Ilse Lehiste<sup>1</sup>**

Ilse Lehiste, president of the LSA in 1980, died after a brief bout with pneumonia on 25 December 2010, at the age of 88 years, 11 months. She was a key figure in the history of Linguistics in the United States, leading in the establishment of instrumental phonetics as an academic subdiscipline of Linguistics in the US. Ilse's<sup>2</sup> accomplishments were enormous and formidable, in a wide range of areas of scholarship and research — instrumental phonetics, historical linguistics, prosody, poetics, Estonian studies, Serbo-Croatian studies, and Germanic philology. (She was also a polyglot, picking up new languages throughout her life, building on the Estonian, German, and Russian of her young days.)

### **Life**

Ilse was born on 31 January 1922 in Tallinn, Estonia. Her life was dramatically changed by World War II. Her brother died in the war, having been conscripted to fight in the Soviet Army and in 1944, the 22 year-old Ilse fled to Germany with her mother and father as the Soviet Army moved to retake Estonia from the Germans. She left behind everything she knew and her bright future in Estonia, on half an hour's notice. While living in refugee camps, she attended the University of Hamburg, earning a Doctor of Philology in 1948 with a thesis on Old Norse<sup>3</sup>. During this period her father died. With the help of the Lutheran church, Ilse and her mother immigrated to the United States in 1949. They initially settled in a small town south of Seattle, Washington where Ilse's first job was as a dish-washer, and then later as an accompanist in a dance studio. She taught German as an Associate Professor of Modern Languages at Kansas Wesleyan for one year (1950-51) and at the Detroit Institute of Technology for five years (1951-56). In 1959, Ilse earned her second doctorate, a Ph.D. in Linguistics from the University of Michigan, and after earning that degree, she continued working as a Research Associate with Gordon E. Peterson in the department of Speech Communication until 1963. During this period they published their seminal studies of vowel duration (Peterson & Lehiste 1960), 'intrinsic' fundamental frequency (Lehiste & Peterson 1961b), and amplitude variation (Lehiste & Peterson

---

1 Facts, remembrances, and some of the text in this note have been contributed by a number of colleagues and friends including Craige Roberts, Linda Shockey, Mary Beckman, Arnold Zwicky, Jaan Ross, Brian Joseph, Stella Karolin, and Veiko Vihuri.

2 To her students she was always "Dr. Lehiste". I recall the specific correspondence, after my PhD had been granted, in which Dr. Lehiste invited me to call her Ilse.

3 The final course that she taught at Ohio State (in 1988) was on Old Norse, closing the circle, she said, with her first teaching assignment.

1961c) in the Peterson & Barney (1952) corpus. It was a great delight to Ilse that in later years the results of these studies could be mentioned as phonetic common knowledge without being cited. The acoustic segmentation criteria that they developed in their study of diphthongs and glides (Lehiste & Peterson 1961a) are still cited as a standard today.

The measurements for these studies, as well as those for her dissertation monograph (Lehiste 1960), were made using one of the few spectrographs then in existence. Decades later, Ilse Lehiste often described ‘the special excitement that the availability of the spectrograph created – we knew that whatever we were looking at, nobody had seen before. I imagine a biologist might have felt the same way when handed the first microscope’ (Beddor & Catford, 1999).

In 1963, Ilse Lehiste joined the Department of Slavic Languages and Linguistics at the Ohio State University as an associate professor. Also in 1963 she published *Accent in Serbocroatian*, with Pavle Ivić. About a year later her mother, who had moved to Columbus with her, died. *Some Acoustic Characteristics of Dysarthric Speech* was published by Karger in 1965, and *Consonant Quantity and Phonological Units in Estonian* by Indiana University/Mouton in 1966. In 1965, Ilse was a founding member of Ohio State Department of Linguistics, and she served as its first chair until 1971. In 1970 she was the director of the Linguistic Society of America's summer institute held at Columbus and she also taught a course at the institute on “Suprasegmentals”. During the early period of her tenure at Ohio State, Ilse established a publishing relationship with MIT Press that continued over the next twenty years. The first of her books with MIT was a collection of seminal articles on acoustic phonetics (*Readings in Acoustic Phonetics*, 1967). This was soon followed by her monograph on *Suprasegmentals* (1970), which was based on her summer institute course. Later books published with MIT Press were *Principles and Methods for Historical Linguistics* (with Robert Jeffers, in 1982), *Word and Sentence Prosody in Serbocroatian* (with Pavle Ivić, 1986), and *Lectures on Language Contact* (1988). One of Ilse's main accomplishments in her professional life was as a department-builder. Her term as the first chair of Linguistics at Ohio State was key in setting the direction and tone of the department as a major center of theoretical linguistic research and training, while avoiding theoretical monoculturalism, or party-line thinking. It should be emphasized that in the late 1960's she had very few, if any, female role models for the type of leadership position that she occupied<sup>4</sup>. Her role during

---

4 Much later, around 1987, I recall attending a university meeting involving Ilse and a university administrator who seemed to have a listening problem. As we left the meeting Ilse muttered, “sexist pig!” This was a lesson for me about what it might have been like for her in the early years. She was a long-time member of the OSU Faculty Club, and enjoyed hosting students and other faculty members at the club. She said that as a female department chair in the 60's and 70's she was obliged to host visitors, but had no wife at home to prepare dinner for the guest (as was apparently expected). She also one time mentioned that during the week she ate “one hot meal a day – and someone else cooks it.”

her second term as chair (1985-87) was again pivotal as she established a pattern for graceful transition of leadership to a new generation.

Ilse retired in 1987, and was succeeded in phonetics teaching at Ohio State by Mary Beckman, who joined the department in 1985. After her retirement, Ilse continued to make the Linguistics Department in Columbus her base for a long and productive research career as Professor Emerita. Her main research activity (with NSF funding over many years) was the phonetic investigation of metrical structure in orally produced poetry. The project dealt with the rhythmic structure of poetry as compared to the rhythm of spoken language in general, and tested the basic assumption that the suprasegmental system of a language is crystallized in the metric structure of its traditional poetry. In retirement, she also fulfilled her ambition to visit all of the continents of the world, and could usually be seen at professional meetings carrying a guidebook for the host city – with a thoughtful plan for explorations before or after the professional sessions.

She was the author, co-author, or editor of 20 books and about 200 articles. Her keynote lecture on the occasion of receiving the 2002 ISCA Medal for Scientific Achievement touched on just a few of her many contributions. Other honors that recognized her scholarship included four honorary doctorates, from Essex University in 1977, from the University of Lund in 1982, from Tartu University in 1989, and from the Ohio State University in 1999. She was a Fellow of both the Acoustical Society of America and the American Academy of Arts and Sciences, and she was elected to be a Foreign Member of both the Finnish Academy of Sciences and the Estonian Academy of Sciences.

After her retirement and without interruption until her final short hospitalization in the last month of 2010, she continued to contribute new knowledge through her work on rhythm in poetry and music and its relationship to rhythm in prose (e.g. Lehiste 2001, Lehiste et al. 2008).

### **Intellectual Legacy**

In discussing the history of phonetics, Ohala (1991) made a very useful distinction between taxonomic and scientific phonetics – tracing both of these trends in phonetic studies through several centuries of research. Linguistic phonetics of the mid 20<sup>th</sup> century in America had a largely taxonomic focus, and this tendency may have contributed to the estrangement of phonetics and phonology in the mid 20<sup>th</sup> century. There developed a sense that phonetics, as a largely taxonomic enterprise, had very little to contribute to a scientific theory of language sound systems. The most successful phoneticians

---

A rumor, current among graduate students at Ohio State in the late 80's, was that Ilse was the highest paid woman on the State government payroll in Ohio.

of the period were those who addressed this estrangement. Refusing to be sidelined as mere taxonomists, they championed the linguistic relevance of scientific phonetics. Peter Ladefoged (1975, 1984) engaged with the theory of phonological distinctive features, establishing the idea that the basic building blocks of phonological structure emerge from phonetic structure. Björn Lindblom (1990; Liljencrants & Lindblom, 1972; Lindblom et al., 1995) pointed the way toward phonetic explanations of phonological universals through processes of contrast maintenance and enhancement. John Ohala (1975, 1981, 1993) provided a listener-based explanation of how phonetic processing shapes phonology (as speech production processes introduce variation and speech perception processes phonologize particular variants). Ilse Lehiste also belongs in any list of the champions of scientific phonetics – and takes a special place because her approach was unique and successful.<sup>5</sup>

As the title of her dissertation suggests, Ilse made her first mark in the phonetic sciences as one of the small handful of phoneticians in North America who were already doing important foundational work on prosody in the early 1960s, a time when much of the focus on that continent was on uncovering the acoustic correlates of consonant and vowel features. While her dissertation was on English, she had also already begun the work that led to her fruitful collaboration with Pavle Ivić on the complex relationships between quantity and tone in standard Serbian (Lehiste 1961; Lehiste & Ivić 1963) as well as her sole-authored work on acoustic correlates of quantity contrasts in the Uralic languages (e.g. Lehiste 1965b). Her monumental review monograph on suprasegmentals (Lehiste 1970) summarized her first two decades of work in these areas, but it also did much more, synthesizing results from the psychoacoustics literature on the perception of pitch, loudness, and duration with results from nearly all of the then extant research in acoustic phonetics on tone, accent, and quantity.

Over the next two decades, she continued to work on the phonetics of quantity and word accent at the same time that she turned her attention to speech prosody above the word and to the ways in which sentence rhythms and melodies reflect syntactic structure and discourse structure. Her seminal articles and books from those decades (e.g. Lehiste 1972, Lehiste 1977, Lehiste, Olive & Streeter 1972, Lehiste & Ivić 1986) are still cited today. She also continued to make important contributions in the area of her first doctorate. She brought her knowledge about prosody to bear on the connection between language contact and language change, as she studied and wrote about the effects of contact on a language's prosodic system, both in the Baltic Sprachbund and in the Balkans.

---

<sup>5</sup> Ilse often taught by slogan, and one of her favorite slogans emphasizes her role as a scientific phonetician – she was quick to remind students of an expression attributed to Galileo, “Measure what is measurable, and make measurable what is not so.”

Lehiste's research on speech prosody spanned a range of interests<sup>6</sup> including phonetics (Lehiste, 1960, 1961), phonology (Lehiste, 1965b, 1977), syntactic parsing (Lehiste, Olive & Streeter, 1972), historical linguistics (Lehiste, 2001), poetry (Ross & Lehiste, 1994, 1998, 2001), and language documentation (Lehiste et al., 2008). The range of linguistic topics that she addressed in her research on prosody was important because it helped to break down barriers between phonetics and other subfields in linguistics. While distinctive feature theory and generative theories of phonological rule systems had much to say about consonants and vowels, the prosodic aspect of language was more open for fresh investigation, free from prior commitments about the relationship between phonetic properties and phonological descriptions. It is significant then that, some of the earliest and most influential work in Laboratory Phonology was in prosody (Pierrehumbert & Beckman, 1988; Kingston & Beckman, 1990) and arguably, phonetic studies of prosody were instrumental in establishing phonetics as one of the major subdisciplines in linguistics in American universities. Ilse Lehiste, through her pioneering research on prosody, and her identification as both a linguist and a scientist, was a key figure in this development in American linguistics.

In addition to an influential research profile, Ilse Lehiste influenced linguistics by championing and guiding her students and other younger researchers. A signal fact about Ilse as a public figure in linguistics was that she looked for people whose cast of mind and ideas she admired and then worked hard, often behind the scenes, to use her influence to advance their careers. Her students describe her courses as ‘fascinating, demanding, fun, rewarding’ and her high standards as a teacher and mentor were always motivating and challenging. Her career advice was unmistakably direct, while retaining fundamental respect for the autonomy of the student. She possessed a brisk self-confidence, and did what she could to inspire the same in others. ‘Always behave as if you were the person you want others to think you are.’ was standard advice, followed by the Estonian version: ‘If the dog does not hold up its own tail, who will hold it up for him?’ This was particularly important advice in the early days of her research career, when opportunities for women in academia in the U.S. were rather more circumscribed than they are today.

Ilse Lehiste also made invaluable contributions to linguistics teaching in the US. These included not just her two textbooks (Jeffers & Lehiste, 1979; Lehiste, 1988), but also her careful selection of fundamental readings in acoustic phonetics (Lehiste 1967) that was the standard primer for a quarter of a century, until the publication of a three-volume collection by the Acoustical Society of America

---

<sup>6</sup> She often commented that confining one's research to consonants and vowels was “boring”.

(Kent, Atal & Miller 1991, Miller, Kent & Atal 1991, and Atal, Kent & Miller 1991).

Prof. Craig Roberts spoke for many of us who knew Ilse when she wrote: “Ilse Lehiste was one of the most courageous and adventurous people I ever met, with a quick wit and razor sharp critical capacity, a passion for the truth, and an unfailingly bright and dignified manner.” Ilse toasted a retiring colleague - reminding us all “Once a linguist, always a linguist”. She lived that to the end, and retained her enthusiasm for the good things of life – ideas, food, music, and travel, and the endless foibles of humans. Her colleagues, friends, and students feel her loss.

Keith Johnson  
Berkeley, CA  
March 30, 2011

## References

- Atal, Bishnu S., Raymond D. Kent & Joanne L. Miller (eds.). 1991. *Papers in speech communication: Speech processing*. New York: Acoustical Society of America.
- Beddor, Patrice Speeter and John C. Catford (1999) A History of Phonetic Science at Michigan. In J. J. Ohala, A.J. Bronstein, M. Grazia Busa, J.A. Lewis, and W.F. Weige (eds.) *A Guide to the History of the Phonetic Sciences in the United States*. 14th International Congress of Phonetic Sciences, University of California, Berkeley.
- Jeffers, Robert J. & Ilse Lehiste. 1979. *Principles and methods for historical linguistics*. Cambridge, MA: MIT Press.
- Kent, Raymond D., Bishnu S. Atal & Joanne L. Miller (eds.). 1991. *Papers in speech communication: Speech production*. New York: Acoustical Society of America.
- Kingston, John; Mary E. Beckman (eds.) (1990). *Papers in Laboratory Phonology I: Between the Grammar and Physics of Speech*. [Cambridge University Press](http://www.cambridge.org/9780521354576).
- Ladefoged, Peter. 1975. *A course in phonetics*. Orlando: Harcourt Brace.
- Ladefoged, Peter. 1984. ‘Out of chaos comes order’, Physical, biological, and structural patterns in phonetics. *Proceedings of the Xth International Congress of Phonetic Sciences*, eds. M.P.R. Van den Broeke and A. Cohen, 83-95. Dordrecht, Holland: Foris Publications.
- Lehiste, Ilse. 1948. *Über die Ethik der nach altnordischen Quellen geschaffenen Werke von William Morris*. Hamburg, Phil. F., Diss. v. 12. Juli 1948 (Nicht f. d. Austausch).
- Lehiste, Ilse. 1960. An acoustic-phonetic study of internal open juncture. *Phonetica* 5 (Suppl.1), 5–54.

- Lehiste, Ilse. 1961. Some acoustic correlates of accent in Serbo-Croatian. *Phonetica* 7, 114–147.
- Lehiste, Ilse. 1965a. *Some Acoustic Characteristics of Dysarthric Speech*. Karger
- Lehiste, Ilse. 1965b. The Function of quantity in Finnish and Estonian. *Language* 41, 447–456,
- Lehiste, Ilse. 1966. *Consonant Quantity and Phonological Units in Estonian*. Indiana University/Mouton.
- Lehiste, Ilse (ed.). 1967 *Readings in acoustic phonetics*. New York: American Institute of Physics.
- Lehiste, Ilse. 1970. *Suprasegmentals*, Cambridge, MA: MIT Press.
- Lehiste, Ilse. 1972. The timing of utterances and linguistic boundaries. *Journal of the Acoustical Society of America* 51(6B), 2018–2024.
- Lehiste, Ilse. 1977. Isochrony reconsidered. *Journal of Phonetics* 5(3), 253–263.
- Lehiste, Ilse. 1988. *Lectures on language contact*. Cambridge, MA: MIT Press.
- Lehiste, Ilse. 2001. Prosodic change in progress: From quantity language to accent language. In Johanna Paula Monique Fikkert & Haike Jacobs (eds.), *Development in prosodic systems*, 47–66. Berlin: Mouton de Gruyter.
- Lehiste, Ilse & Robert Allen Fox. 1986. Perception of prominence by Estonian and English listeners. *Language and Speech* 46, 375–401.
- Lehiste, Ilse & Pavle Ivić. 1963. *Accent in Serbo-Croatian: An experimental study* (Michigan Slavic Materials 4). Ann Arbor, MI: Department of Slavic Languages and Literatures.
- Lehiste, Ilse & Pavle Ivić. 1986. *Word and sentence prosody in Serbocroatian*. Cambridge, MA: MIT Press.
- Lehiste, Ilse, Joseph P. Olive & Lynne A. Streeter. 1972. Role of duration in disambiguating syntactically ambiguous sentences. *Journal of the Acoustical Society of America* 60(5), 1199–1202.
- Lehiste, Ilse & Gordon E. Peterson. 1961a. Transitions, glides, and diphthongs. *Journal of the Acoustical Society of America* 33(3), 268–277.
- Lehiste, Ilse & Gordon E. Peterson. 1961b. Some basic considerations in the analysis of intonation. *Journal of the Acoustical Society of America* 33(4), 419–425.
- Lehiste, Ilse & Gordon E. Peterson. 1961c. Vowel amplitude and phonemic stress in American English. *Journal of the Acoustical Society of America* 33(4), 428–435.
- Lehiste, Ilse, Pire Teras, Valts Ernštreits, Pärtel Lippus, Karl Pajusalu, Tuuli Tuisk & Tiit-Rein Viitso. 2008. *Livonian prosody* (Suomalais-Ugrilaisen Seuran Toimituksia 255). Helsinki: Suomalais-Ugrilainen Seura.



- Liljencrants, J., Lindblom, B. 1972. Numerical simulation of vowel quality systems: the role of perceptual contrast. *Language* 48: 839–862.
- Lindblom, B. 1990. Explaining phonetic variation: a sketch of the H&H theory; in Hardcastle, Marchal, *Speech Production and Speech Modeling*, pp. 403–439 (Kluwer, Dordrecht).
- Lindblom, B., Guion, S., Hura, S., Moon, S.-J., Willerman, R. (1995) Is sound change adaptive? *Revista di linguistica*. 7, 5–37 (1995).
- Miller, Joanne L., Raymond D. Kent & Bishnu S. Atal (eds.). 1991. *Papers in speech communication: Speech perception*. New York: Acoustical Society of America.
- Ohala, John J. 1975. [Phonetic explanations for nasal sound patterns](#). In: C. A. Ferguson, L. M. Hyman, & J. J. Ohala (eds.), *Nasalfest: Papers from a symposium on nasals and nasalization*. Stanford: Language Universals Project. 289 – 316.
- Ohala, John J. 1981. [The listener as a source of sound change](#). In: C. S. Masek, R. A. Hendrick, & M. F. Miller (eds.), *Papers from the Parasession on Language and Behavior*. Chicago: Chicago Ling. Soc. 178 - 203.
- Ohala, John J. 1991. [The integration of phonetics and phonology](#). *Proceedings of the XIIIth International Congress of Phonetic Sciences*, Aix-en-Provence, 19-24 Aug 1991. Vol. 1, pp. 1-16.
- Ohala, John J. 1993. [The phonetics of sound change](#). In Charles Jones (ed.), *Historical Linguistics: Problems and Perspectives*. London: Longman. 237-278.
- Peterson, Gordon E. & Harold L. Barney. 1952. Control methods used in a study of the vowel. *Journal of the Acoustical Society of America* 24(2), 175–184.
- Peterson, Gordon E. & Ilse Lehiste. 1960. Duration of syllable nuclei in English. *Journal of the Acoustical Society of America* 32(6), 693–703.
- Pierrehumbert, J. and M. Beckman (1988) *Japanese Tone Structure*, Linguistic Inquiry Monograph 15, MIT Press, Cambridge.
- Ross, Jaan & Ilse Lehiste. 1994. Lost prosodic oppositions: A study of contrastive duration in Estonian funeral laments. *Language and Speech* 37(4), 407–424.
- Ross, Jaan & Ilse Lehiste. 1998. Timing in Estonian folk songs as interaction between speech prosody, meter, and musical rhythm. *Music Perception: An Interdisciplinary Journal* 15(4), 319–333.
- Ross, Jaan & Ilse Lehiste. 2001. *The temporal structure of Estonian runic songs*. Berlin: Mouton de Gruyter.