



**In memoriam Eli Fischer-Jørgensen, 1911-2010**

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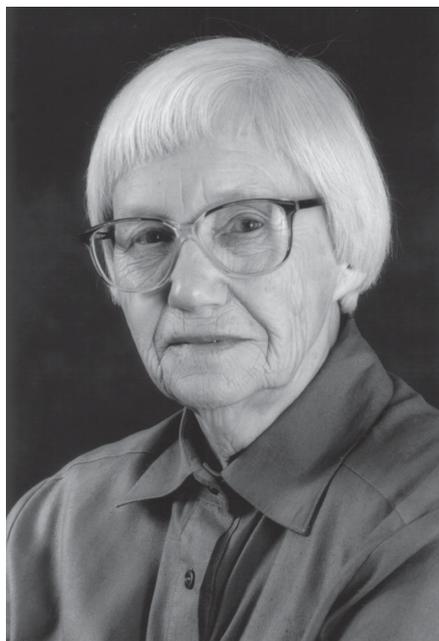
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## Eli Fischer-Jørgensen

1911–2010

Eli Fischer-Jørgensen died peacefully in the night between 26th and 27th of February, in her home at Kongestien in Virum. She had just turned 99, on February 11th. Given the fact that she was not of very robust health, it is amazing that she actually lived long enough to die of old age, after a long and rich life, leaving indelible traces in linguistics, phonology and phonetics!

Eli began her university studies in German and French. She took her first course in (German) phonetics in 1929, and did not much like it: it consisted in learning physiological descriptions by heart and making transcriptions from orthographic texts. The students never heard nor pronounced a single German sound. A subsequent course in French phonetics did not fare much better in her opinion: the professor was a great linguist, but phonetics was not his chief concern. Given two such negative experiences you may wonder why she became a phonetician at all. And actually it happened only as a form of rebellion. In 1935 she received Copenhagen University's gold medal for a prize essay on sentence definitions (En kritik af John Ries. Was ist ein Satz?). Having completed it she had become fed up with 'syntax and with all the pseudo-philosophical twaddle' she had had to read in preparation for the essay. Phonetics and (structuralist) phonology were much more hands-on, and (after her initial negative impression in German and French) she had learned solid phonetic observation and methodology from Poul Andersen's course in Danish phonetics. She was greatly impressed by the writings of the Prague School, particularly Roman Jakobson and Prince Trubetzkoy, although she was slightly weary of their apparent disregard for phonetic substance. She never missed an opportunity



Photograph (1968) by courtesy of the Royal Danish Academy of Sciences and Letters.

herself to stress the importance of integrating phonetic and phonological research. Her Master's thesis was about the importance of dialect geography for the understanding of sound change [Fischer-Jørgensen, 1934]. Eli became a member of the Linguistic Circle in Copenhagen already as a student, in 1933. She loved the intellectual climate of the Circle and was an eager participant in the often very lofty debates. Her membership in the Circle is undoubtedly, at least partly, responsible for the fact that Eli developed and maintained a broad interest in all matters linguistic, not just phonetics and phonology.

Having completed her Master's in 1936, Eli had wanted to go to Vienna and study with Trubetzkoy, but he died shortly after having sent her a kind invitation. Instead she went to Paris to study phonology with André Martinet and to learn experimental phonetics from Mademoiselle Durand. Eberhard Zwirner subsequently invited Eli to come and study with him in Berlin. Conditions were already difficult there, in the shadow of a war soon to break out, but Eli would always maintain later that she owed her keen abilities in experimental phonetics to Zwirner and his pioneering work. She returned to Copenhagen two weeks before the outbreak of the war.

There was one aspect of phonetics where Eli would always declare herself incompetent: the acoustics of speech. She was therefore tickled to add that – nevertheless – she had been the official faculty opponent in Stockholm in 1960 at Gunnar Fant's doctoral thesis defence. She always hastened to add that she of course understood hardly anything in his *Acoustic Theory of Speech Production*. All the same, she had managed to find an error in a formula! But lest there be any doubt: perhaps the technical engineering aspects of speech acoustics were beyond her, but she was in absolutely no doubt about the extreme importance and the benefits to phonetics of the contribution from acoustics and engineering to general phonetic theory [Fischer-Jørgensen, 1957]. She was indeed herself a pioneer in speech synthesis. Not that she developed a speech synthesizer. But she was at Haskins Laboratories in 1952 and synthesized Danish vowels on their pattern playback synthesizer and immediately realized how much could be learned about speech perception through the controlled manipulation of the acoustic parameters.

Eli obtained her first post at Copenhagen University in 1943 as a lecturer in phonetics, attached to Louis Hjelmslev's chair in linguistics. In the early years she did not dispose of any instrumentation of her own but had to carry out experiments in the basement of the Institute of Speech Pathology where there was a kymograph, later also a 'Frequenzspektrometer', and from 1951 even a tape recorder. Director of the laboratory in Hellerup was Svend Smith, who permitted Eli access to his premises only in the evening. And when the doors were locked at 10 p.m. anyone remaining in the basement had to crawl out through a high window and into a bed of roses.

After the war, Eli received a scholarship to go to London, to study with Mademoiselle Coustenoble and Prof. Daniel Jones. From England she came to Holland during a cold winter where there was not much else to do than go skating and later canoeing on the canals and learn the language. This latter enabled Eli to give the opening speech in Dutch at the Tenth International Congress of Phonetic Sciences in Utrecht in 1983, to the extreme delight of her hosts. She nearly brought the house down.

1952 found Eli in America on a Rockefeller scholarship. She was first in Cambridge at MIT. Shortly before she left she gave a talk to an audience which included a bright young Noam Chomsky. Then she went to the Haskins Laboratories in New York and was introduced to speech synthesis in the form of the famous pattern playback machine, as mentioned above. Thence to Oklahoma and Kenneth Pike and a solid dose

of competent linguistic research and teaching, and an equally solid dose of Bible reading and prayer – which, however, failed to make a believer out of her.

The following years were active ones for Eli. She got interested in the auditory dimensions of speech sounds and in sound symbolism, inspired by Roman Jakobson. She carried out extensive perceptual tests based on stimuli produced by tape cutting and splicing, in order to investigate the role of formant transitions and burst noise for the identification of stop consonants. She also undertook some rather sophisticated investigations of intraoral pressure in obstruents with a manometer constructed for medical purposes. This was in preparation for a book (her second choice for a doctoral dissertation, cf. below) about stop consonants which, unfortunately, was never finished: Eli loved horses and decided to learn to ride them. To her great chagrin she was thrown almost on her first attempt astride a horse and suffered a severe concussion. It kept her bedridden for a long time and had her in almost constant headaches for almost five years. During that period she could lecture on familiar subjects but she could not read. As a result Eli gave up her plans for a doctoral dissertation. She is an honorary doctor at Copenhagen, Aarhus, Lund and Bayreuth Universities, but she never defended a thesis of her own. Giving up on the thesis did not mean that she did no creative work at all after the accident: she dictated large parts of her revised textbook in general phonetics [Fischer-Jørgensen, 1948/1960/1962] during that time, often from her bedside. It may fairly be said that since this awful time, Eli was never again in truly good health. And much of her later effort was uphill work. It did not stop her, but she always had some ailment or other to contend with.

Eli became a phonetician at a time, before the Second World War, when it was still possible to have read practically everything that was published in the field – and of course she did. She had a superb overview of the whole field and accordingly she was able to welcome all the new developments in the various subfields which took flight after the conclusion of the war, and to know exactly how they would advance our understanding of spoken language. She also knew personally practically everybody worth knowing in phonetics at the time. Colleagues and students reaped the benefits of her comprehensive knowledge and all her personal acquaintances: we had an astounding number of the world's foremost phoneticians as guest lecturers at the Institut for Fonetik in the late sixties and the seventies. However, as time went by it was no longer possible to know everything and everybody in phonetics. One had to specialize. In the early seventies Eli sought to bring speech perception into focus at the Institute of Phonetics through her experiments in stop consonant perception and not least a series of extremely thorough and well-researched lectures on the state of the art. Then came the experiments with EMG recordings of the respiratory and laryngeal systems in stød production, an undertaking which kept just about everyone at the institute busy for a couple of years, under the guidance of Hajime Hirose and Seiji Niimi. This was at a time when digital data handling was in its infancy, and the project stumbled a number of times over technical computer programming problems. If Eli had any regrets in later life about her research efforts, it might be that the enormous amount of EMG data collected was never utilized to its full extent. These major phonetic endeavours did not mean that her interest in phonology was on the wane. On the contrary: Eli gave a grand series of lectures on phonology in the early seventies, the manuscript for which eventually resulted in her renowned *Trends in Phonological Theory* [Fischer-Jørgensen, 1975].

She obtained her own full professorship, a personal chair in phonetics, in 1966, and her own department, the Institut for Fonetik. For a while the sky seemed the limit.

In a few years the department grew to a permanent tenured staff of seven. We taught general phonetics to about 700 first-year students from the various language departments each fall term, and there was no real shortage of money. This period of expansion culminated in 1979 with the Ninth International Congress of Phonetic Sciences. Eli was president, of course, but also the hardest working of us all, overseeing every part of the preparations which ran for the better part of two years, taking a vital interest in its every aspect. Among other things, she personally saw to it that participants from countries behind the iron curtain (who could not travel unless provided for by the host country) were invited into private Danish homes in order to save hotel expenses. Fortunately, the hard work resulted in a very successful congress of which she was duly proud for the rest of her life. Shortly after, in February of 1981, Eli had to retire: she had reached the official retirement age. And then she did an amazingly sensible thing: She disappeared for more than three months. She went to Brighton to Chris Darwin's department at the University of Sussex, i.e., she left the rest of us to find our feet in a department which was now without its undisputed power centre, and which was never the same again without her. In retrospect it is clear why those left behind needed to establish a new equilibrium and why that was no simple matter: Although the institution was a democratic one, there was no doubt that Eli was its leader. And although individuals were free to develop their own interests, collaborative efforts were invariably centered around her, and it was those projects which defined the institute in the eyes of the world. When Jørgen Rischel succeeded Eli, his speech synthesis project – which had lain dormant while he was professor in the Institute of Linguistics – became another such collaborative effort for which the institute was to become known for some years to follow.

In 1968 Eli was admitted to the Royal Danish Academy of Sciences and Letters. She was the first woman to become a domestic member of the Academy. Eli was honorary president of *Le Cercle Glossématique* at the University of Padua, and in 2006 they published a volume in her honour containing two presentations (by Galassi and Willert Bortignon) and a reprint of two important papers by Eli along with ten papers written by members which celebrate her lifelong achievements by discussing a number of theoretical issues in glossematics [Galassi et al., 2006].

In retrospect, we can evaluate Eli's work and appreciate it for its scope and extreme thoroughness and the invaluable contributions she made in a widely varied field. Her *Trends in Phonological Theory* [Fischer-Jørgensen, 1975] is still very good reading and a number of her papers have not lost their relevance. What is harder to-day is to appreciate what she must have meant to her students in the early years when practically every new experiment was an exercise in novelty, something that had not been done previously. It must have been inspiring beyond words to participate in her classes and her research projects in those early days. This in spite of a fact which Eli herself was the first to point out – as she did at the party on the occasion of her 60th birthday: she was not a creative theoretically endowed talent. She never formulated theories of her own about anything in phonetics or phonology, but she was a very astute observer and an acerbic critic and could bring contributions from various fields together to the advancement of our knowledge about speech production and perception. This is not tantamount to saying that Eli did not have original points of view of her own. In several publications she outlined phonological approaches to the description of phenomena which were ignored in most schools of phonology, particularly where phonotactics were concerned [Fischer-Jørgensen, 1949, 1952]. The same is true of her paper

on stress patterns in Germanic languages [Fischer-Jørgensen, 1961], which in some respects anticipate the seminal paper by Chomsky et al. [1956].

Eli's publications span an amazing 72 years, from 1932 to 2003 [an exhaustive list of her scientific publications, until 1997, can be found in Grønnum and Rischel, 2001]. Early on she wrote on phonology and contributed the first in a long series of remarkably lucid and loyal reviews (viz. of Martinet and de Groot) to the *Bulletin du Cercle Linguistique de Copenhague*. Her thorough review of Louis Hjelmslev's *Omkring Sprogteoriens Grundlæggelse* [Fischer-Jørgensen, 1943] undoubtedly paved the way into his principal work for many students, and it initiated a series of papers which culminated with her impressive and incisive critique of glossematics [Fischer-Jørgensen, 1966]. Her phonetic studies covered all aspects: articulatory, acoustic, perceptual, and diachronic, as well as a number of specific languages: Danish, German, French, Dutch, and Gujarati.

After her retirement she tried to finalize a number of projects which had been left hanging. One result was the monograph about stød [Fischer-Jørgensen, 1988], another one was the study of sound symbolism [Fischer-Jørgensen, 2003], notable for its corrections of the principle of arbitrariness, which she contributed to the *Festschrift* for Hans Basbøll. There are also two major papers about stress [Fischer-Jørgensen, 1984, 1997]. Finally, she had invaluable help from her old student and lifelong friend Niels Ege, himself a uniquely gifted linguist, to finish a study which had been her first idea for a doctoral dissertation, viz. a study of stress in compounds and derivations in 17th century Danish [Fischer-Jørgensen, 2001]. Apart from the scientific activities in her retirement, Eli also involved herself in social work with groups of refugees. She taught Danish, in particular Danish pronunciation, to a number of individuals and also wrote mimeographed notes for her students and colleague teachers in *Flygtningehjælpen*.

Legend has it that The Institute of Phonetics and Linguistics originally had a sign on the door saying: 'For (all) matters of substance please refer to Associate Professor Eli Fischer-Jørgensen'. This is a recurrent theme: Form alone cannot be the exhaustive object of linguistics. Form depends on and interacts with substance. This is true for both sides of the linguistic sign. Eli was solely concerned with expression substance, i.e. sounds. This suited her rational down-to-earth profile as a researcher, but surely the argument holds for content substance as well. In holding this view, Eli more or less functioned as a Praguian partisan within the Danish structuralist camp. It was not a popular position (though it tallied in some respects with the, mostly absent, glossematist Hans Jørgen Uldall's stance). None other than Eli could have managed this.

We are aware that we have painted a picture of an ever working, never tiring researcher. But research was not everything. In her private life Eli was equally active. She had a kayak in a nearby lake. She trekked in various mountainous regions in Europe, and in winter she skated and skied. During a visit to Stockholm in January of 1954, the speech group at *Kungliga Tekniska Högskolan* decided to go skiing on a 10 km trail directly outside the institute. Eli joined them, of course. But when everybody had returned, they discovered that she was missing. They got worried about her and sent out a search party to look for her. However, she made it back under her own steam and informed the anxious colleagues that she had simply decided to do a second round on the trail!

Once a year, in early summer when the nightingales sang, Eli invited colleagues and students to her home for a late supper and subsequent walk through the woods to hear the nightingales sing. We would walk all night and end up having breakfast somewhere. On one occasion we walked through Vaserne to Birkerød to Jørgen Rischel's home and had a hearty breakfast with him and his wife and three young daughters.

Regrettably, Eli was sometimes a little disappointed with the younger members of her party: we would become rather merry with the contents of hip flasks en route and would tend to drown out the birds with our own songs!

Eli was a keen amateur draughtsman and water-colour painter, witness the portraits of famous phonologists on the dust cover of *Trends in Phonological Theory* and the drawing of the old university buildings on the cover of her last book, *Tryk i ældre dansk*.

It is symptomatic of her everlasting commitment that her final public appearance should be in a Danish Radio feature ‘Sproglaboratoriet’, broadcast on March 4th and 11th, recorded in her home only a few days before her death [<http://www.dr.dk/P1/Sproglaboratoriet/Udsendelser/2010/03/04125341.htm>].

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