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M. DOHALSKÁ-ZICHOVÁ: **Analyse spectrographique des voyelles françaises**. Acta Universitatis Carolinae Philologica, Monographia LI, Universita Karlova, Praha 1974. 172 pp.

This study marks an important step forward in the specification of French vowel formant frequencies, from the early work of DELATTRE, who made measurements of his own pronunciation of isolated vowels, to studies of the future, some of which are already in progress, based on the automatic computerized analysis of vast numbers of samples from absolutely natural, continuous speech. Within the limits of the means at the disposal of the author of the present study, this reviewer can find little to criticize. M. DOHALSKÁ-ZICHOVÁ is well aware of most of the shortcomings and difficulties involved and points them out at the outset so that her results may be interpreted in the proper light. Her approach to the problem is intelligent and her exposé succinct and clear.

In her 'Forward', she acknowledges DELATTRE's work as her point of departure; he had in fact recommended further studies on a statistical basis. Since then, researchers have concentrated either on isolated vowels or on samples extracted from coherent utterances. DOHALSKÁ-ZICHOVÁ's study is based essentially on two series of recordings, the first purportedly representing 'daily French', the second 'literary French'. The first uses three Parisians of 'average age', which this reviewer has found to best represent current trends, the younger (20- to 29-year-old) and the older (60+) showing marked conservative tendencies. A rather imaginative approach is demonstrated here: two spontaneous discussions were recorded and then transcribed and interpreted aloud a second time by the same speakers, trying to maintain their original style. There is some question about the naturalness of the first recordings, and the author hesitated between placing the microphone close to the speaker and having it thus indirectly influence him or placing it farther away and losing some of the acoustic quality. Actually, the latter does not provide a satisfactory solution, for, as this reviewer has pointed out, results of recent studies have shown that speech is natural only if the speaker is totally unaware that he is being recorded or observed. All other experimental conditions tend to yield what we term 'preference patterns' rather than 'performance patterns'. Naturalness is a measurable but extremely subtle quality that cannot be judged subjectively. The second series consisted of three interpretations of modern dramatic dialogues by professional actors; the results were based on male voices. Auditory analysis was carried out, using a number of French-born subjects and a few other individuals, who had lived in France for a long time and 'frequented' French schools. In this connection, it would have been useful to have a demographic profile for each speaker, since, as the author herself acknowledges, such factors influence pronunciation. Even in Paris, standard 'Francien' is bordered on the west by the affected speech of Passy and its adjoining arrondissements, and on the east by areas such as Belleville.

The technical means of analysis included a tape segmenter with an electronic gate and providing both audio and visual display via an oscilloscope, as well as a Kay Sono-Graph – three different frequency scales and as pass-band width of 300 Hz were used. The study was limited to the first two vowel formants, and although their frequency positions were the author's principal concern, quite a few data on their duration are also provided. The presentation of the data includes 18 wide-band spectrograms of good quality, together with transcriptions of the samples, and number of graphics on which F1 and F2 frequencies are plotted for repeated samples. After a résumé in Czech, a bibliography of 85 relevant items is presented.

DOHALSKÁ-ZICHOVÁ's observations include the following: the three 'very close' vowels are the most consistent in their phonetic realizations in both 'daily' and 'literary' styles. The eight vowels represented by their archiphonemes E, Ø, O and A show considerably more dispersion. In the case of the first, DOHALSKÁ-ZICHOVÁ points out a 'neutral' realization – there is, of course, an 'e moyen' allophone of /ɛ/ for utterance-final syllables with the spellings *-ais*, *-ait*, *-aient*, *-êt*, *-ès*, etc. resulting from two opposing forces, i.e., the 'law of position' and the semantic content and the contrasts between the opposing phonemes of the first three archiphonemes in question tend to neutralize in unstressed, utterance-interior positions. The color found for the mute e is at variance with ours, which is based on several thousand samples of natural speech. While DOHALSKÁ-ZICHOVÁ concludes that it is closer to /œ/ than to /o/, we find that it is almost identical to the latter.

'Anterior' versus 'posterior' /a/ s behave differently, since that opposition's already weak functional load is becoming even more attenuated through the progressive loss of the posterior articulation. We agree that it still exists in French in a limited number of words i.e., *pas*, *crois*, etc., but the former phonemic contrast has largely been replaced by a stylistic practice, namely to posteriorize somewhat all A's that occur in free, utterance-final syllables.

DOHALSKÁ-ZICHOVÁ is in general agreement with us concerning the nasal vowels, the small differences in conclusions probably being the result of different experimental conditions. Whereas she attributes the neutralization of the /*Ê*/ – /*Ë*/ opposition to the progressive disappearance of the latter, we have shown it to be due to an abandonment of all distinctive lip position. She also notes an occasional drift of /a/ toward /ɔ/, which is a well-known characteristic of west-Paris pronunciation: indeed in those quarters, they are quite often pronounced in an identical manner.

Finally, the author finds no significant differences between 'daily French' and 'literary French'. We believe that greater differences would have emerged, had the corpus for 'daily' speech been surreptitiously recorded.

But, aside from the few reservations already mentioned, this study is undeniably solid in its conception, execution and presentation. It will provide valuable reference figures until such time as the results of a vast study, involving thousands of samples collected from a large number of demographically well-defined speakers, recorded without their being aware of it, become available.

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