

kolektivních jevů. Je třeba ještě zdůraznit formální povahu Mandelbrotovy makrolingvistiky, jež dbá pouze vztahů mezi lingvistickými formami bez ohledu na jejich význam a snaží se je zachytit matematicky. Konkrétněji přistupuje autor k otázce jazyka v teorii o informační textové teplotuře (temperature informationnelle), v níž se opírá o Estoupe—Zipfův zákon o frekvenci slov ve sdělení. Informační teplotura textu, již lze vyjádřit číslem charakteristickým pro daný jazyk a určitého autora, je zajímavý pokus vystihnout matematicky vhodnost či nevhodnost využití slov v daném textu.

Podněty B. Mandelbrota jsou jistě velice cenné a jejich úzký vztah k lingvistice je dosvědčován zvláště v druhé studii sborníku zvané „Logique et langage considérés du point de vue de la précorrection des erreurs“, jejímiž autory jsou L. Apostel a B. Mandelbrot. Rozborem vztahů mezi tzv. „codes correcteurs“ a pravidly logiky dospívají autoři k závěru, že existují vztahy mezi kody, logikou a jazykem. Zvláště zajímavý je pokus identifikovat de Saussurův protiklad s pojmem vzdálenosti v oblasti kodů (notion de la distance), který je svrchovaně důležitý pro zabránění omylů při dekodování. Veškerá lingvistická pravidelnost vyplývá z nutnosti zachovat protiklady znaků; stejně tomu je i při kodování. Z toho pak autoři vyvozují identitu jazyka a opravných kodů (codes correcteurs d'erreur). Jediný rozdíl vidí v tom, že v kódech jde o kvantitativní povahu vzdálenosti, v jazyce o kvalitativní povahu protikladu. Tyto základní shody mezi kody a jazykem jsou pak ověřovány na klasifikaci protikladů, při čemž se autoři opírají o studii Trubetzkého a Cantineauovu „Le classement logique des oppositions“. Jestliže připustíme, že protiklad je totéž co vzdálenost ve smyslu teorie kodů, lze pak říci, že jazyk v rovnováze, kde vzdálenosti mezi různými prvky jazyka jsou stejné, je kodem optimální účinnosti. Na vývodech této druhé teorie se ukazuje, jaké možnosti otvírá teorie protikladů též teorii kodů, i když zůstává podstatný rozdíl mezi jazykem a kodem v tom smyslu, že jazyk je organizován v rovině fonémů, morfémů, slov a vět, kdežto kody jsou organizovány pouze v jedné rovině.

Domníváme se, že studie Apostelova a Mandelbrotova si zasluhuje pozornosti lingvistů, neboť odpovídá požadavku, který je stanoven ve výše citované recenzi dr. J. Krámského, že totiž „the concept of information cannot be the same as in linguistics and that it is necessary to make relation of these two concepts clear in both sciences“, v čemž snaha autorů dospívá k některým zajímavým výsledkům.

*Josef Dubský*

*Tatiana Slama Casacu: Experimentally reversed speaking, with special view to diphthongs* (Revue de Linguistique, III, Bucuresti, 1958, s. 19—29).

One of the problems discussed lately by Rumanian phoneticians and psychologists is the relation between the linguistic units of various order and the corresponding psychological units into which the speaker divides his speech. It was proposed to tackle this problem by means of suitable experimental methods. One such method is that of experimentally reversed speaking. It is based on the hypothesis that the psycholinguistic units into which the speaker divides his speech can be determined through the analysis of the mistakes he makes, i. e. of the places where the actual reversion of the phonemes does not coincide with the one expected. This method has been adopted by Tatiana Slama Casacu. In the study under discussion she offers the results gained by a systematic application of the method to a high number of words and subjects. She sets out to observe not only the units into which the speaker divides his speech but also his reaction to the diphthongs, the study of which is one of the main problems of contemporary Rumanian phonetics. The author's subjects were 32 people with a varying standard of education. The mother tongue of all of them was Rumanian and from the phonetic point of view their speech had no dialectal features. The experiments were carried out in the Laboratory of the Institute of Psychology and in the Laboratory of the Phonetics and Dialectology Departement of the Institute of Linguistics in September 1957. The experiments were tape-recorded, other recordings, both direct and reversed, were made on the kymograph.

In her paper the author does not deal with all the facts observed during her experiments but concentrates: a) on the comparison between the mechanical reversion and that made by the subjects, and b) on the reversion of the diphthongs. Other problems such as the reversion of consonantal groups, general remark on the psychological units of speech etc., are to be dealt with in a subsequent study of hers.

The comparison between the mechanical reversion and the reversion made by the speaking subjects themselves leads to some interesting conclusions. A great difference exists between the aspect acquired by a word mechanically reversed and the kymographical aspect of the same word reversed by the subject. The author accounts for this fact not by the peculiarities of the direct emission of sounds or by the physical characteristics of the mechanically reversed sounds, but also by the important fact that the subject tends to preserve the phonological system of

the language even in the reversion, thus eliminating those sounds which would run counter to this system and which naturally appear in the mechanical reversion.

The reversion of words with diphthongs discloses a number of facts, which—in the author's opinion—are so important that they cannot be ignored. During the reversion the diphthongs are usually treated as simple sounds, as units, and very often remain unchanged (e. g. deal—lead, coif—foic). The fact that the diphthongs remain unchanged in such cases is borne out not only by acoustic tests but also by an objective proof: the kymographic recordings are very similar with the exception of stops (which in reversed speech naturally begin with the off-glide instead of the on-glide). In reversed speech the diphthongs appear as sonorous lumps irrespective of the length of the word. This was checked by means of tests in which the simplest case was analyzed—that of words containing the sequence Consonant + Diphthong + Consonant, i. e. of words which presented no other difficulty than words consisting of the sequence Consonant + Vowel + Consonant and which yielded a hundred-percent correct reversion (e. g. lot—tol, nas—san . . .). Even longer words without diphthongs were easily and correctly reversed while shorter words with diphthongs created difficulties and led to incorrect reversions. Taking into consideration various types of diphthongs, the author subjects this interesting phenomenon to thorough analysis. She does not establish any important difference in the subject's behaviour in relation to the rising and to the falling diphthongs. She finds, however, considerable differences in the subject's behaviour towards various diphthongs outside the falling and the rising category, in regard to the surroundings in which they occur, or the result which they could give by reversion, or the situation of the subjects which is determined by their typological features and the method used in reversion.

There are some diphthongs in Rumanian that seem to be of greater importance to the language system than others and are therefore more refractory to reversion (e. g. ea, oa, ua). The greater refractoriness is apparently due to the monophonematic value of these diphthongs, or possibly to their belonging to the most frequent sounds in Rumanian (which would fulfil the condition of greater automation). The greatest refractoriness, however, is displayed by those diphthongs which on reversion would give a result incongruent with the phonemic system of the Rumanian language (e. g. beat—taeb, doar—raod).

In the analysis of the reversion the subject's standard of education must be taken into consideration. The subject's getting used to the experiments matters as well, not only because of his increasing skill in reversion and his gradual acquisition of the facility of analyzing words, but also because of his growing awareness of the possible mistakes. Automatism are then forestalled and replaced by a more attentive behaviour, by more analytical methods. In this way the author accounts for the decrease in erroneous reversions in subjects with a certain standard of education. In the author's opinion the most important factor is the procedure adopted by the subject in making the reversion. She took into consideration neither the fact that some subjects divide the word into syllables when reversing, nor that others pronounce each letter separately, nor that the reversions may vary between rapid and long ones. She concentrated on the more important reasons for which one or other way of reversion appears, namely on the guidance of the graphic image of the word or its absence during the reversion. From the results of her experiments in this field let us quote at least some of them: subjects who let themselves be guided by the written form reverse the diphthongs more "correctly" while the time of reaction is generally longer. Subjects, on the other hand, who are not guided by a graphic visual image, and who thus reverse the words on the basis of auditive images, yield the highest percentage of reversion by preserving the diphthongs. These results are corroborated by control experiments and by an analysis of behaviour of those subjects who resort to both methods. It was established during these experiments that when the subjects were asked to ignore the graphic image, they started to preserve diphthongs in the reversion of words. On the contrary when the subjects who preserved diphthongs were asked "to see the word as if written", then they, following this advice, offered "correct" reversion.

From the psychological point of view, the reversion of words presupposes the delimitation of sounds. Such delimitation is naturally an operation of which the subject is fully conscious. The reversion of a word therefore presumes the existence of the consciousness of the phonemic units into which the word can be divided. A reversion which preserves the diphthongs, however, need not point to a lack of consciousness of the particular sounds isolable in the word: it may be accounted for by the stronger automatism which are predominant at the moment of reversion. The problem in question is therefore not only the consciousness of the phonological units, but also the automatism of certain specific phonological groups. The psychological investigation of diphthongs shows that diphthongs of any type are as a rule not correctly dissociated in accordance with their graphic aspect, but seem to function as a single sound, as a phonological

structure which is unitary and well fixed as such in the words to which it belongs. To put it differently, from the speaker's point of view, all diphthongs are to be regarded as phonologically delimited units: the speaker makes the delimitation of these units only on certain conditions (when he has the visual image of the word and according to certain prevailing factors).

By way of conclusion it may be said that the author no doubt succeeded in explaining the factors causing the ways of reversion. Let us here recall the most important of these factors: the structure of the words to be reversed, avoidance of a phonological incongruity with phonemic system of the language, the stereotypy of articulation in the subjects, and last but not least the training by means of which the subject acquires the faculty of analyzing the words. The psychological units of speech vary with the subjects' capacity of analysis, a capacity determined by age and standard of education. In any case the graphic image plays an important role in the phonological analysis and in strengthening the consciousness of the limits of sounds. The fact that the subject reverses the words in a certain way must be connected not only with a certain motor automatism of pronunciation but also with a certain way of perceiving the words and of differentiating their component parts. It is remarkable that the natural bilateral connection between articulation and perception allows of important conclusions, based on seemingly insignificant observations of the way, in which speakers reverse words. A certain way of perceiving and differentiating the sounds of the words can determine the corresponding habits of articulation. Unfortunately, the author confines herself mostly to examples taken from Rumanian, though now and then she offers examples from other languages as well (e. g. English and Russian). It would be certainly worth while to apply her experimental methods to other languages as well and thus help to clarify the relation between the linguistic and the psychological units in general.

Jaroslava Pačesová

### Litėvsk jazykovdn periodika.

V poslednch letech jsme svdky potšitelnho rozvoje bdn o litėvskm jazyce, a to pedevm v samotn Litėvsk SSR. Svdc o tom mj. stle narstajc jazykovdn produkce, uvejnovn ponejve v form stat v odbornch asopisech a sborncch (kter se dnes — na rozdl od pedchzejcch dob — jz zpravidla dostanou i k nm). — lnky z oboru jazykovd nachzme samozrejm i v Prcch Akademie vd Litėvsk SSR (Lietuvos TSR Mokslu Akademijos Darbai), a to v serii A. Vzhledem k tomu, e serie A je vnovna zroveň ekonomii, historii, archeologii a literrn vd, nen poet jazykovdnch prc uvejnovnch v tomto hlavnm orgnu litėvsk vd pilhi velk. Prochzme-li ronky 1958—1960 (svazek 4—9), setkvme se tu pedevm s dialektologickmi studiiemi; z jejich autor je teba uvst na prvm mst J. Senkuse (celkem 5 stat). Do tehoz thematickeho okruhu nlez i pouny lnek A. Balasaitise o djnch litėvsk dialektologie a o dialektologick terminologii (ve sv. 7). Historick jazykovd je reprezentovna hlavn etymologickmi studiiemi A. Sabaliauskase (jen vykld v cel rad krtkch lnk baltsk nzvy domcch rostlin). Historickou syntax litėvtiny se zabv V. Ambrazas ve dvou statch. Z ostatnch lnk pipominme jst fonetickou studii J. Volfsonase o konsonantickch skupinch *sksk* a o jejich metathese (ve sv. 5). — lnky jsou zpravidla psny litėvsky, maj vsak rusk resum (take jsou pstupn i tenrm prakticky neznalm litėvtiny).

asopis-sbornk *Literatra ir kalba* (Literatura a jazyk), vydvan rovn Litėvskou akademi, pin hlavn del studie z oboru jazykovd a literrn historie. Dosud vyly tyi svazky, z nich posledn (1959) je cel vnovn bsnce S. Neris (neobsahuje adn lingvistick prce). Tak prv svazek (1956) m pevzn biografick charakter: zabv se ivotem a dlem vynikajcch litėvskch jazykovdc J. Jablonskho a K. Bgy (literrnvdn st je vnovna odrazu dl M. Gorkho v litėvsk literatre). Svazek II obsahuje dkladnou studii A. Valeckisov (Valeckiene) o uivn sloench forem adjektiva v souasn litėvtin; ve sv. III (1958) pak nalzme dv rozshl jazykovdn studie. Prv z nich, jejimz autory jsou A. Lybernis a K. Ulvydas, se zabv vvojem litėvsk slovn zsoby v sovtskm období. Ve druhé studii zkoum J. Paulauskas funkce slovesnch pedpon v souasn spisovn litėvtin; tuto studii pokldme za obzvlt zvznou. Krom techo rozshlch studi obsahuje LiK I—IV jst nkolik drobnjch jazykovdnch prc, z nich pipominme jen dva dal lnky A. Sabaliauskase o baltskch nzvyech domcch rostlin. Jednotliv svazky asopisu obsahuj tak oddly „Recense“, „Z archiv“ (v nm bv publikovna korespondence litėvskch spisovatel a bsnk) a „Informace“. Jazykovdce bude nejve zajimat tento posledn oddl: bvj v nm uvejnovny tituly lituanistickch disertac, souhrnn zprvy o baltistice v zahrani aj. Ve