REVIEW ARTICLE

Dynamic dialectology: A study of language in time and space. By MIEKO OGURA. Tokyo: Kenkyusha, 1990. Pp. x, 303.

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Ogura is currently on the staff of Tsurumi University, Yokohama and a research associate of the Project on Linguistic Analysis in the University of California at Berkeley, and the book under review opens with Foreword by William S-Y. Wang, which serves as a brief introduction both of the book and the author. Apart from an introductory chapter O collects in this volume five independent essays which are threaded together by one central theme manifested in the subtitle: a study of language in time and space.

In Chap. 1, 'Theoretical preliminaries', O attempts first to characterize the manner of language evolution by contrasting it with that of organism. She states that while organic evolution admittedly takes place through vertical transmission of traits from parent to offspring within each species, the transmission of traits in language evolution is not only vertical but also horizontal through our peers and oblique across different generations. O then mentions that there is an unhappy chasm between the study of vertical language transmission as represented in comparative linguistics and the study of horizontal and oblique language transmission as represented in traditional dialectology. Although O does not express clearly, it is evident that her aim in the book is to integrate the two approaches to language, and apply what is integrated, namely dynamic dialectology, to the explication of the five main problems to be dealt with in the following chapters.

O is not very specific about the theoretical preliminaries to dynamic dialectology, so readers have to pick them up from the text for themselves. I gather that there are six worth pointing out. The mode of transmission of language traits characterized above may be counted as the primary one. The second is that phonetic change is abrupt, while diffusion of new forms is gradual. The third is that lexical diffusion

* In preparing this article I have benefited greatly from discussions with Norio Yamada, and I would like to express my special thanks to him.

usually proceeds through three stages: u (unchanged), v (synchronic variation), and c (changed). The fourth is that change comes through variation. The fifth is that the interaction of phonetic factors with word frequency determines which words will lead and which words will lag behind in the change. The sixth is that phonological change 'has progressed furthest in the lexicons of those dialects closest to the point of origin. The inner areas are more advanced in the change, either in having a later reflex or in having more words pronounced with a later reflex.' (9) Of these, the fourth and the fifth preliminaries need special comments. The assumption that language change comes through variation in language is valid and is empirically well-grounded. The question is what factors are responsible for some variants to fade away and for some others to survive to effect language change eventually. O's answer is: 'It seems to be reasonable to posit that the persistent types are the ones selected by the biological forces of speech production and perception, whereas the transitory ones are more attributable to the social forces of prestige or education.' (7) Readers expect her to go on to state what the biological forces of speech production and perception are, but she just stops there and leaves them there. Unless the biological forces of speech production and perception are defined explicitly, we cannot hope to understand the true nature of phonological change. Concerning the fifth preliminary, O amply demonstrated in Chap. 5 of her previous book (1987) how important phonetic factors and relative word frequency are in lexical diffusion. But we must bear in mind that the role of word frequency in lexical diffusion tends to be only general, affecting many but not all items, as persuasively shown in Labov (1989: 44). Moreover, lexical diffusion may indeed start in the most favorable phonetic environment, and in that environment may secondarily be conditioned by word frequency. But prior to that it can be more heavily conditioned by grammatical and lexical categories, as pointed out again in Labov (1989: 31-42). Grammatical and lexical categories should be given due consideration in the discussions of lexical diffusion.

In Chap. 2, 'Spatial distribution of the Great Vowel Shift in English', O examines quantitatively the present-day reflexes of seven M(iddle) E(nglish) long vowels as they are distributed in 311 sites of England. The data for this study is taken from *Survey of English Dialects* (SED) edited by Orton and his associates. I find this chapter the most interesting in the book. It contains many valuable observations and findings. As a paradigm example of a portion of O's dynamic dialectology, I will briefly

review her treatment of ME $\bar{i}$. ME $\bar{i}$ has 17 modern reflexes, which she assumes to be related with one another diachronically and which she aligns properly according to the hypothetical order of historical development. I have reproduced the figure below.

FIGURE 2-1. Relations among the reflexes of ME $\bar{i}$.

Each of the reflexes is labeled with a number. The arrows indicate the diachronic relations among the reflexes. Thus reflex 2 is assumed to have developed from reflex 1, and reflex 3 is assumed to have developed from reflex 2, and so on. Reflex 17 is the latest development. O then takes up 39 words with the vowels originating in ME $\bar{i}$, and investigates their present pronunciation at each of the 311 sites. If a particular word shows more than one pronunciation at a particular site, the first pronunciation recorded is chosen. If no pronunciation is recorded, the one deduced from the neighboring dialects as the most probable is added. So the database for ME $\bar{i}$ consists of 12,129 ($=39 \times 311$) samples. O next calculates the frequencies of the different reflexes. The most frequent reflex at a particular site is called the first mode reflex for that site; the next most frequent reflex is the second mode reflex. By examining the overall distribution of the first mode reflexes all through the sites, we can discern the regions where the change is more or less advanced. Parallel investigations are made for the six other ME long vowels.

O makes clear that in the development of ME $\bar{i}$ the coast of Essex and Oxford area are among the regions where the latest reflex 17(=/ɔi/) has been reached. These regions are surrounded by the sites with the first mode reflex 15(=/oi/) or 14(=/ʌi/), and they in turn are surrounded by

the sites with the next later reflexes. In this wavelike distribution of the first mode reflexes O legitimately identifies gradients or clines originating from the coast of Essex and Oxfordshire. Coupling the idea of gradience with the reasoning that the change of ME $\bar{r}$ as a portion of the G(reat) V(owel) S(hift) 'seems to have begun around East Anglia in the early 15th century' (43), O observes that 'the inner areas are more advanced in the change, either in having a later reflex or in having more words pronounced with a later reflex' (30). To my mind, these are the most important findings in the book.

By examining the gradients among the reflexes of ME long vowels in general, O has found four wavelike propagations of reflexes. The first and the second wave originate, as hinted at above, around Norfolk, Suffolk, Essex and Hertfordshire, and around Oxfordshire and Bedfordshire, respectively. The third and the fourth wave originate around Manchester and Sheffield, and around Birmingham, respectively.

Returning to Figure 2-1, O says nothing definite as to whether or not she considers that the total changes 1 to 17 charted in Figure 2-1 constitute the GVS for ME $\bar{r}$, or, stated otherwise, whether or not she considers that the GVS, which is generally assumed to have ceased to be operative by the first half of the 18th century at latest, has continued its operation to produce the modern reflexes 1 to 17 for ME $\bar{r}$. Multifarious movements of populations in England over a long history make it quite improbable that all of these forms can be interpreted equally as modern direct sequential descendants of earlier pronunciations of ME $\bar{r}$. Rather they are to be taken as just the aggregate of the contemporary first mode surface variants corresponding to ME $\bar{r}$, scattered all over England. Among them we can distinguish at least three types of phonological processes involved in the putative developments of ME $\bar{r}$ shown in Figure 2-1. (1) Changes for 'expansion of the distance between endpoints of diphthongs (i.e. dissimilation) to achieve perceptual optima' (Stockwell and Minkova 1985: 11), as seen in $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 9$, or alternatively $1 \rightarrow 2 \rightarrow 4 \rightarrow 9$. The proponents of the former sequence as the GVS of ME $\bar{r}$ are, differences in details aside, Jespersen (1909: 234-5), Zachrisson (1971: 206), Ekwall (1975: 38-9), Wolfe (1972: 151-6), and Chomsky and Halle (1968: 249-89), among others, and those of the latter sequence as the GVS of ME $\bar{r}$ are Kökeritz (1953: 216), Dobson (1968: 659-71), and Stockwell 1975. (2) Remonophthongization after reaching diphthongal optima, as seen in $7 \rightarrow 8$, $9 \rightarrow 10$, and $11 \rightarrow 12$. (3) Changes for narrowing down the distance between endpoints of diphthongs after reaching diph-

thongal optima, as seen in 11 → 14 → 16 and 13 → 15 → 17. My contention is that of these three types of phonological changes only (1) is a part of the GVS proper. Looking at Figure 2-1 above, we might almost be induced to posit the sequence of arrows 1 → 2 → 3 → 5 → 7 → 9 as another natural alternative for the GVS of ME *ī*. To my knowledge, however, no historical phonologist of English has ever put forward this specific claim. Neither does O really provide any evidence for the sequence.

The need for factoring out a variety of changes involved into a relatively small number of natural types, as has been done for ME *ī* above, will be seen more clearly in the cases of ME *ū*, *ō*, and *ȳ*. I have reproduced Figure 2-1 relating to ME *ū* below.

FIGURE 2-1. Relations among the reflexes of ME *ū*.

Here too, distinction can be made between the phonological processes leading up to [au] $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 15$ or $1 \rightarrow 2 \rightarrow 4 \rightarrow 15$, and the others, on the same grounds as for $\bar{r}$ stated above, and only the former, that is, $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 15$ or $1 \rightarrow 2 \rightarrow 4 \rightarrow 15$ is profitably regarded as a part of the GVS proper.

To many students of English historical phonology the crux of the GVS problems is the development of ME $\bar{e}$, and for this O proposes a simple and straightforward solution by the theory of lexical diffusion, on the basis of the examinations of rhymes between ME $\bar{e}$ and ME e in the 14th and the 15th centuries together with other evidence in the 16th, the 17th, and the 18th centuries. She states:

'In the late 14th century, some of the ME $\bar{e}$ words had already changed to [e:], some were fluctuating between [ɛ:] and [e:], and others still remained [ɛ:]. And in the 15th century Londoners used the [e:] (>[i:]) variant of the dual pronunciations to a greater extent. During the 16th century, there is evidence of the [i:] pronunciation, but the conservative pronunciation on the whole maintained its position, and as the 17th century advanced, the [i:] variant is recorded in more and more words and in the early 18th century this [i:] became the normal pronunciation. In *great*, *steak*, *break*, *drain*, and *yea*, the [e:] and [i:] pronunciation competed for some centuries and after the 18th century the [e:] at last ousted the [i:] pronunciation and became [ei] in present-day StE.' (81)

Here she is arguing in effect that [ɛ:]>[e:]>[i:] is a regular sound change. This argument should be quite natural in view of the fact that all the words going back to ME $\bar{e}$ have [i:] now except for a small subset consisting of *great*, *steak*, *break*, *drain*, *yea*, and several place names like *Hayes* and *Deans*; the majority have taken a regular course of development. Her argument is remarkable in that it contrasts sharply with those of Wyld (1936: 211), Kökeritz (1957: 197), and Dobson (1968: 611-12), who are unanimous in their inference that the change [ɛ:]>[i:] is 'not in the nature of a sound change . . ., but is merely the result of the abandonment of one type of pronunciation and the adoption of another' (Wyld), or 'not a ModE phonetic change; it was simply the displacement of one mode of pronunciation by another which had developed from it before the ModE period began' (Dobson; Kökeritz virtually the same). I daresay that O's argument should be buttressed in three respects to be really convincing. First, the change [ɛ:]>[e:]>[i:] would be the more plausible if it were shown that ME $\bar{e}$ did not merge with ME $\bar{a}$ and $\bar{a}l$. She is requested

to demonstrate that this was the case. Secondly, O must give a reasonable explanation for the [ei] sound found in the five words and several place names listed above. Just to assert that the change [ɛ:] > [e:] > [i:] did not diffuse to them would be no explanation at all. Thirdly, in the course of its development to [e:] then to [i:], ME $\bar{e}$ is assumed to have merged with ME $\bar{e}$, and O acknowledges it herself. According to her, the merger of the two sounds was motivated by the simplification of the vowel heights: in ME 'there were four distinctive vowel heights for the front against three for the back. The system of the four vowel heights are[sic] unstable, which led to the system of the three vowel heights by the merger of ME $\bar{e}$ and ME $\bar{e}$ ' (44) In this view of O's it is quite unclear to what extent, or whether at all she considers the raising of ME $\bar{e}$ to [e:] then to [i:] constitutes a part of the GVS. Needless to say, the question of how to interpret the phenomenon is closely connected with our views of the GVS. O should have been more positive in stating her own views concerning the essential properties of the GVS.

The title of Chap. 3 is 'The development of the Indo-European languages', and in its first half O launches into the task of finding out the most plausible branching tree that depicts the genetic grouping of the I(ndo)-E(uropean) languages. After dividing the 9 IE languages into the satem group (Armenian, Iranian, Indic, Slavic, and Baltic) and the centum group (Celtic, Italic, Greek, and Germanic), O checks all the possible binary trees for the satem and the centum languages against each of the 74 innovations listed in Kroeber and Chrétien 1937. After meticulous manipulation and tabulation of the data, O has decided upon the following tree as the most plausible one for the subgrouping of the IE languages.

FIGURE 3-2. The most plausible tree for the subgrouping of the 9 IE languages.

O is well aware, however, that even this tree can explain the sharing of the innovations by any two branching languages only partially (39%), so varied and widespread is the distribution of the innovations.

In the second half of the chapter, O aptly applies the method of dynamic dialectology to the examination of the development of stop consonants in IE languages, and argues on the basis of the scores of sound correspondences (101) that there are two gradients A and B in the distributions of stops in IE languages, A originating in Armenian, and B in Germanic. She goes on to claim that there are three other gradients C, D, and E, which have spread in Indic and Iranian, Italic and Celtic, and Baltic and Slavic, respectively. But her claim for the three gradients is not as firmly substantiated. According to the scores of IE sound correspondences which O utilized for gradients A and B, Tocharian, Hittite, and Old Church Slavic and Lithuanian would instead be better regarded as the starting points of gradients C, D, and E.

In this connection I would like to point out that the numbers of innovations ascribed to the gradients A to C given on p. 104 are mostly not accurate. Thus 22 standing for the number of the innovations Gradient A is supposed to have gone through should be corrected into 23.

As for the problem of how Tocharian fits into the centum-satem split with regard to the change of the Proto-IE velar **k* to the sibilant *s*, O simply assumes that the change spread throughout the satem languages, but did not diffuse in Tocharian just like in the centum languages, although Tocharian was located easternmost of the satem group areas. The reason she puts forth for it is the assumption that Tocharian was a language of peripheral area (100). This assumption may be reasonable as it stands (Lehmann 1952: 102), but it contradicts flatly the high score she gives to Tocharian for the IE sound correspondences in Table 3-5 (p. 101); there Tocharian marks the second highest score 27 along with Gothic (Germanic), next to Armenian with the highest 31. The scores alone would suggest that Tocharian is not isolated as a lagger but is among the most advanced in the change of IE stops. There must be reasons, linguistic or otherwise, why the change **k* to *s* did not pervade Tocharian. To bring them to light should be a proper task of linguistics.

In Chap. 4 'Language change in China', O applies the concepts in dynamic dialectology to the inquiry into phonetic and semantic changes in Chinese. The data for this study is mostly provided by linguists at Beijing University. As the first topic O takes up the development of M(iddle) C(hinese) voiced initial obstruents as seen in the pairs like

Goon (吳音): *daimyō* (大名), *jimen* (地面), *juraku* (聚樂)

Kanon (漢音): *taikoku* (大國), *chikyū* (地球), *shūraku* (聚落)

The strategy she employs here is the same as in the previous chapters. First she posits the sequences of stages each of the voiced initial obstruents is supposed to have undergone in its development. Then based upon the investigations of the distribution of the first mode reflexes of the obstruents at particular sites, O makes clear that phonological changes have progressed furthest in the lexicons of two areas: Northern Mandarin dialect area and Gan and Yue dialect area. Accordingly she postulates two gradients of the first mode reflexes originating there. The ensuing discussion of the horizontal transmission of the gradients is formidably equipped with various tables and statistics.

The second topic in phonetic changes is the merging and weakening of MC final stops *p*, *t*, *k* and nasals *m*, *n*, *ŋ*.

The last topic O addresses herself to in the chapter is spatial distribution of semantic changes. Although the description is more tentative in tone here, this is an area that has been little explored, and is therefore the more welcome to us. O takes up fourteen monosyllabic or polysyllabic words which have undergone semantic change of some kind or other. One of them is 聞. In Old and Middle Chinese it meant 'to hear' as in present-day Japanese. But later its meaning changed to 'to smell' in certain dialects, but not in certain others, where the word 嗅 is used for the meaning 'to smell'. In dialects where the change is under way but is not completed, there is synchronic variation observed among 聞, 嗅, and 鼻 as a word for 'to smell'. O investigates the spatial distribution of the words for 'to smell' at 18 sites to see how far the semantic change has propagated. Similar investigations are carried out for the thirteen other words. The outcome is the discovery that propagation of semantic change in the words where the change occurred before the early 19th century is different from that in the words where the change occurred in present-day Chinese. She ventures to relate the different modes of propagation of semantic change to different modes of cultural evolution in the dialect areas concerned.

O has demonstrated in this chapter that dynamic dialectology is applicable to semantic as well as to phonetic changes. In so doing O has showed us most impressively what dynamic dialectology is about. Thus O focuses on how the changes were brought about and how they spread out, but she says little if ever about what the changes are and why they took place. Would it be presumptuous of us to characterize dynamic

dialectology as more concerned with, so to speak, the external structure than with the internal structure of language change? In O's dynamic dialectology language in space is studied more intensively than language in time.

Chap. 5 'Language contacts in the history of English' reexamines the familiar topic of the impact the Anglo-Saxon invasion and settlement, the Viking invasion and settlement, and the Norman Conquest had on the language of the British Isles from a viewpoint of dynamic dialectology, and characterizes aspects of the language transmission induced by these historic events. The main sources of data for this study are Jackson 1953 and Serjeantson 1935. Particularly interesting is O's finding that the rate of the spreading of Scandinavian words due to the Norse landing is much slower than that of French words due to the linguistic cataclysm, the Norman Conquest. She tries to relate this difference in the modes of lexical diffusion to the difference in the nature of the language contacts involved. According to her, the spreading of the Scandinavian words was concomitant with movement of the population, or demic migration, while that of the Norman French words was a consequence of cultural diffusion which did not necessitate the population movement. The impact of foreign invasion on a nation's language is hard to evaluate with much accuracy, but O has succeeded in bringing to light important aspects of lexical diffusion brought about by foreign invasion and settlement.

In the final Chap. 6 'The acquisition of phonology' O investigates the child's acquisition of phonology in a perspective of dynamic dialectology. In particular she discusses the rates of change from a wrong pronunciation to a correct one in individual words, the role of word frequency in acquisition of phonology, the chronological profile of rates of change, and the implication of rates of change for historical change, all of which cannot be solved, O asserts, unless examined in a lexical perspective. The data for this study is all taken from Leopold 1939, 1947.

Since Jakobson [1942] 1968 the parallels between phonological change in language history and children's acquisition of phonology have often been drawn, and many attempts have been made to probe into the processes of language acquisition in order to see in what respects and to what extent it parallels certain types of historical language change. O's investigation in this chapter lines up with them. It contains ingenious analyses of the data and many interesting observations. Occasionally, however, O makes claims too strong to be warranted by factual data, as

pointed out below.

O first explores the relation between word frequency and the rates of change from a wrong to a correct pronunciation in acquisition. Based upon comparison between the average percentages of correct pronunciations of fourteen vowels in frequent and infrequent words at different ages, O suggests that 'frequent words tend to change faster than infrequent words' (206). She is scrupulous enough here to refer to it as a tendency, not as a law or even a rule, for we readily find exceptions to it. The tables on pp. 232-6, 246-7, and 255-7 show that the percentages of correct pronunciations for frequent words like *airplane*, *bell*, *neck*; *pillow*, *string*, *fishes*; *here*; *home*, *open*; *bottle*, *lost*, *Hand*; *fork*, etc. are 0%, while those for infrequent words like *atsch*; *spill*, *Mickey-Maus*; *streetcar*, *measles*; *cocoa*, *oatmeal*; *Nacht*; *knock*, etc. are 100%. This is completely the opposite of what her suggestion implies. We need to do much more research like Phillips's 1984 before we can be definite about the relationship between frequency and change or regularization.

O makes several tables (216-21) displaying the average percentages of correct pronunciations of vowels and consonants at different ages. They reveal, among others, that the chronological order of acquisition of vowels and consonants conforms to Jakobson's prediction. They are remarkable also in that they make clear that semivowels and [h] are acquired quite early and often serve as early substitutes for fricatives and liquids, and that [ʃ] and [x] appeared earlier than [f] and [s] against Jakobson's prediction.

O then notes (218, 222) that the chronological rates of change in acquisition given in the tables depict a profile of an S-curve for both vowels and consonants; an S-curve signifies that a change is viewed as starting out slow, picking up speed in midstream, and tapering off toward the end. This is an interesting observation, and is indeed valid for the vowels, but not for the consonants, as evidenced in Tables 6-9 and 6-11, which I have reproduced here.

	0; 9-0; 10	0; 11-1; 2	1; 3-2; 1
First group			
α, ε	18.8%	59.3%	26.9%
ι, ι			83.2%
Second group			
e, o, u	0%	80.6%	83.1%

Third group			
ɔ, ʊ	0%	0%	39%
Fourth group			
æ	0%	0%	4.5%
Fifth group			
ʌ, ə, œ, y	0%	0%	0%

TABLE 6-9. The average percentages of the correct pronunciations for the five groups of vowels.

	0; 9-0; 10	0; 11-1; 2	1; 3-2; 1
First group			
p, b, t, r, k	23.3%	44.9%	36.5%
Second group			
d, h, m, w, j	0%	5.8%	68.1%
Third group			
ʃ, x, tʃ, n, l	0%	0%	22.1%
Fourth group			
f, v, ç, ŋ	0%	0%	10.9%
Fifth group			
g, s, z, θ, ð, dʒ, ts	0%	0%	0%

TABLE 6-11. The average percentages of the correct pronunciations for the five groups of consonants.

In Table 6-9, the vowels in the first group changed slow, but those in the second group changed faster once they got started, and those in the third and fourth group became slow again. In this way the chronological rates of change in the acquisition of vowels delineate an S-curve. But this is not the case with the consonants. In Table 6-11, the consonants in the first group started rather slow, and those in the second group lost speed, only to regain it together with the consonants in the third and fourth group. Hence no S-curve in the acquisition of consonants, contrary to O's positive assertion.

Finally, O attempts to investigate the relation between sound change in language acquisition and sound change in language history. She notes (224) that there is a close relation between rates of change of vowels in acquisition and their stability in vowel system in the history of English: vowels which are easier to acquire and therefore change from a wrong to a correct pronunciation at a rapid rate in the process of acquisition are

those which are stable throughout the history of English, while those which are not so easy to acquire and therefore change at a comparatively slow rate in the process of acquisition are the vowels which are unstable in the history of English. But this is not wholly guaranteed by the data: Table 6-9 reproduced above makes clear that *a* and *ɛ* are among the vowels to be acquired most easily, yet they are unstable as seen in Figure 6-2 (p. 222). Likewise, O observes (225) that there is an obvious relation between rates of change of consonants in acquisition and their frequency in the world's languages: consonants which are easier to acquire and therefore change from a wrong to a correct pronunciation at a rapid rate in the process of acquisition are found more frequently in the world's languages. Again this observation is not always supported by evidence: Table 6-11 above shows that *p*, *t*, *r*, and *k* are among the consonants to be acquired most easily, yet they are not so frequent as made clear in Table 6-12 (p. 224). Conversely, *s*, *g*, and *ŋ*, which are among the most difficult to acquire, are in fact among those which are relatively frequent in many languages.

In closing, I must say that I have not tried to conceal criticisms where they seemed called for. It is all the more my pleasant duty to emphasize that *Dynamic dialectology* is a major contribution to dialectology and historical linguistics alike, containing as it does a wealth of new research which will prove to be of great value for the disciplines.

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