

THE PHONOLOGICAL BACKGROUND OF UKRAINIAN CONSONANT DISPALATALIZATION

I

Among the East Slavic languages, Ukrainian is sharply distinguished from both Belorussian and Russian as a result of the presence of unpalatalized (hard) consonants before the original Common Slavic vowels *i*, *e* (cf. Trubetzkoy 1925: 305, Shevelov: 1956: 482). Since Ukrainian subsequently experienced a backing of *i* > *y*, the Russian and Belorussian syllables *t'i*, *t'e*¹ (where *t'* represents any palatalized consonant) correspond to Ukrainian *ty*, *te*, e. g. Russian *sila* ([s'i]), Belorussian *sila* ([s'i]), Ukrainian *syła* ([sy]) 'force'; Russian *bereg* ([b'e]), Belorussian *berah* ([b'e]), Ukrainian *bereh* ([be]) 'shore'. Alongside these cases of Ukrainian lack of consonant palatalization before originally front vowels, however, there are instances in which consonant palatalization has survived before such front vowels, e. g. before the reflex of Common Slavic *ě* (*jať*'), now *i* in the Ukrainian literary language and southern dialects and *iê* in much of the North, cf. [t'ilo] 'body'.

This paper is an attempt to offer a phonological explanation for the Ukrainian consonant dispalatalization before *i*, *e*. The reasons why this change occurred before only certain front vowels will be explored in terms of both relative chronology and the notion of marked vs. unmarked vowel systems.

II

The comparative study of Ukrainian hard *t(y)*, *t(e)*, in contrast to other East Slavic soft *t'(i)*, *t'(e)*, has given rise to two diametrically opposed viewpoints as to the origin of the differences (cf. Shevelov 1956: 482 and Kuraszkievicz 1939: 38 and 1963: 37 for discussion). One point of view, identified with Smal-Stocki (1913: 48), holds that the Ukrainian hard con-

¹Before hard consonants in Russian and Belorussian, *t'e* changed to *t'o*, e. g. *n'es* > *n'os* 'carried'.

sonants before *i*, *e* represent the retention of an archaic stage of Common Slavic, in which consonants were not automatically palatalized before these front vowels. Smal-Stocki's notion of a directly inherited hard Ukrainian *ti*, *te* denies the existence of the tendency to syllabic synharmony, according to which Common Slavic 'consonants are palatalized before a front vowel' (Jakobson 1929: 22). As Žuravlev has observed, 'the concept of syllabic synharmony is extraordinarily productive' (1961: 34). Referring the reader to Jakobson's and Žuravlev's convincing demonstrations of this fact, we shall henceforth assume the presence of syllabic synharmony in East Slavic until the period of *jer*-loss. The other main point of view accepts the idea of inherited consonant palatalization before front vowels in all of East Slavic, including Ukrainian. There is disagreement, however, between different adherents of inherited palatalization, regarding the degree of softness that was to be found in earliest East Slavic. Šaxmatov (1903: 225-6) asserts that consonants became strongly palatalized before *i*, *e* in a Common East Slavic language and that, subsequently, Ukrainian lost this strong palatalization, in contrast to Belorussian and Russian, which retained it. Kuraszkievicz (1939: 38) maintains that all East Slavic inherited 'half-soft', or weakly palatalized consonants before *i*, *e*, which took one of the two directions, either that of dispalatalization, as in Ukrainian, or that of strong palatalization, as in the remainder of East Slavic. For our purposes, however, the frequently mentioned issue of fully soft vs. half-soft consonants is a secondary one. The significant difference is not in the relative degree of palatalization, but in its phonemic relevance, which first arose after *jer*-loss. Therefore, we will consider that all of East Slavic inherited consonant palatalization before front vowels, which was eventually eliminated before *i*, *e* in Ukrainian. We can easily see the speculative nature of the debate over the degree of palatalization inherited by East Slavic in Lehr-Splawiński's statement (1957: 370) that 'Ukrainian inherited ... palatalized (half-palatalized?) consonants.' It often appears that the term half-soft is used as a substitute for positional, non-phonemic palatalization (i. e. as it was prior to *jer*-loss), while the notion fully soft is frequently used to indicate phonemic palatalization, such as that which arose after *jer*-loss. This terminology ignores the fact that the rise of phonemic palatalization did not necessarily produce a phonetic change in degree of palatalization².

²Perhaps the most accurate way to use the terms would be to apply the notion fully soft to palatals, which were phonemic softs even before *jer*-loss, in contrast to pala-

Since we accept the general concept of syllabic synharmony, we have sided with the view that a real dispalatalization before *i*, *e* did occur in Ukrainian. Therefore, our main task will be to answer the question of why consonants hardened before these particular front vowels. Certain scholars, such as Lehr-Splawiński (1957: 291) have considered the relative chronology of the Ukrainian dispalatalization to be 'more important' than the problem of the rise of the new hard consonants before *i*, *e* in the first place. Perhaps, this was due to Lehr-Splawiński's conviction that 'it is difficult to determine what factors caused consonant palatalization' (1957: 370), at least before *e*. Others, notably Šaxmatov, Trubetzkoy, Jakobson, and Kuraszkiewicz, have attempted to provide explanations for the Ukrainian consonant hardening. Before reviewing these different treatments of the question, let us first outline the dimensions of the problem to be solved.

At the moment of jer-loss, as yet before the end of syllabic synharmony, we shall assume the following vowel system for Ukrainian (*iē* represents *jat'*, *ē*, *ō* represents the results of compensatory lengthening of *e*, *o* in newly closed syllables):

i	y	ü	u
iē			
ē		ō	
e		o	
ā a			

In conformity with the principle of syllabic synharmony, all the front vowels (*i*, *ü*, *iē*, *ē*, *e*, *ā*) were preceded by soft (i. e. palatal or palatalized) consonants, while the other vowels were preceded by plain (unpalatalized labial, dental, or velar) consonants. Evidence for the existence of *ü* and *ā*, based on textual data, has been presented by Lunt (1956: 310), although he indicates that 'many scholars have failed to recognize *ü* and *ā* as separate units.' We are assuming that the reflex of *jat'* at the time of Ukrainian jer-fall (*iē*) was distinct from compensatorily lengthened *ē*, at least in an environment preceded by a hard consonant, since North Ukrainian reflects the change of compensatorily lengthened *ē* > *ō* before hard consonants (e. g. *n'esls* > *n'ēs* > *n'ōs* > North Ukrainian *n'ūōs* 'carried'; *s'elb* > *s'ēl* > *s'ol* > North Ukrainian *s'ūōl*, gen. plur. 'village', cf. Nako-nečny 1962: 133 and Jakobson 1929: 64 for the citation of this data), but

jat' did not change to \bar{o} ($> \hat{u}\bar{o}$) in the same environment (e. g. North Ukrainian *dīēd* 'grandfather', not **d'ūōd*, cf. Zales'kyj 1968: 32). Before the vowel change $\bar{e} > \bar{o}$ before hard consonants, the remaining instances of \bar{e} before soft consonants (\bar{e} , \bar{o} only arose in syllables followed by weak jers, which eventually became closed during jer-loss) merged with *jat'* as $\hat{i}\bar{e}$, while \bar{o} eventually diphthongized to $\hat{u}\bar{o}$ in North Ukrainian, forming a back-vowel pair to $\hat{i}\bar{e}$ ³.

In view of this vowel system, which contained five distinct front vowels, it appears unusual that Ukrainian consonants uniformly hardened only before the vowels *i* and *e*. Let us review several explanations that have been offered to account for this phenomenon.

Šaxmatov (1903: 26-7, 1909: 149-54) proposed that the glide \bar{i} developed after all palatalized consonants. However, before the Common Slavic vowels *i*, *e*, the glide \bar{i} was contracted with the following vowel soon after its appearance (1903: 226). The resulting vowels were open \bar{i}^2 and \bar{a} , which no longer palatalized the preceding consonants as did their antecedents *i*, *e*. The reason for no such dispalatalization having taken place before \bar{u} , \bar{a} is explained by the claim that these vowels first backed to *u*, *a*, which did not contract with the glide \bar{i} (1903: 229). As to $\hat{i}\bar{e}$ and \bar{e} , these were supposedly long vowels, in contrast to *i*, *e*, which also did not experience contraction. Šaxmatov's hypothesis came under criticism from Lehr-Splawiński (1957: 370), who wrote that it 'is too intricate and artificial to be accepted without reservations', as well as by Trubetzkoy (1925: 305), who stated that he saw 'no basis for accepting the complicated explanation of this phenomenon which Šaxmatov proposed'. Indeed, Šaxmatov's clever use of the hypothetical glide \bar{i} , which either remains or disappears depending on the desired result, was too artificial a construct to gain general recognition.

Trubetzkoy (1925: 305-7) assumed that the Ukrainian consonant dispalatalization took place at a time when the Late Common Slavic \bar{u} and \bar{a} were already equivalent to the back vowels *u*, *a*, as well as a time when both *jat'* and compensatorily lengthened \bar{e} had a value of $\hat{i}\bar{e}$. This assumption permitted Trubetzkoy to state that the Ukrainian hardening was simp-

³In North Ukrainian dialects, fronted $\hat{u}\bar{o}$ can be found alongside older back $\hat{u}\bar{o}$, cf. Kuraszkiewicz (1931: 186). Kuraszkiewicz also notes that the diphthongization of $\bar{e} > \hat{i}\bar{e}$ before soft consonants and $\bar{o} > \hat{u}\bar{o}$, in all positions, 'developed only after the change of closed syllable *e* to *o* before hard consonants and to \bar{e} (*jat'*) before soft' (1931: 182).

ly 'the hardening (dispalatalization) of soft consonants before syllabic front vowels'. This formula implies that the first component of \widehat{ie} is non-syllabic. Since Trubetzkoy assumes that *jat'* and \bar{e} had already merged as \widehat{ie} by the time of the Ukrainian consonant hardening and that, consequently, the vowel backing of ' $e > \bar{o}$ ', ' $\bar{a} > a$ ', and ' $\bar{u} > u$ ' had also already occurred by that time, one may conclude that Trubetzkoy felt that Ukrainian *t'e* was exempt from the rule which called for the backing of other front vowels which were preceded by soft consonants⁴. However, we shall assume that the failure of original Ukrainian *t'e* to change to *t'o* can be best explained by a relative chronology which specifies that *t'e* hardened before any front-vowel backing took place, naturally exempting *te* (< *t'e*) from backing due to the fact that a hard consonant began to precede the front vowel. The link between the hardness of *t* in *te* and the absence of the vowel backing of $e > o$ is further seen in the general East Slavic fact that 'half-soft or hard consonants before *e* are usually noted in dialects that do not change *e* to *o*' (Filin 1972: 312).

Jakobson (1929: 63-6), in contrast to Trubetzkoy, assumes the existence of the front vowels \bar{u} and \bar{a} at the time of Ukrainian consonant hardening. In order to explain the fact that *jat'* did not experience vowel backing before hard consonants in North Ukrainian, as did the reflex of \bar{e} after compensatory lengthening, Jakobson proposes that before hard consonants there were two \widehat{ie} vowels (1929: 64), i. e. '*jat'* was not identified with \widehat{ie} (< \bar{e}) before hard consonants', but 'was a more closed diphthong, equal to \widehat{ie} (< Proto-Russian \bar{e} before a soft consonant)'. Rather than assume two distinct \widehat{ie} diphthongs, as does Jakobson, we assume that there was a single diphthong \widehat{ie} (the reflex of *jat'* and \bar{e} before soft consonants), opposed to a monophthongal \bar{e} . The vowel \bar{e} , in turn, was opposed to *e* originally in terms of vowel quantity, but this may well have become a tense-lax opposition, such as \bar{e} vs. *e*, by the time vowel quantity was abolished⁵.

Thus, Jakobson acknowledged the existence of five front vowels (*i*, \bar{u} , \widehat{ie} , *e*, \bar{a}), only two of which caused the preceding consonant to harden (*i*, *e*) and three of which did not (\bar{u} , \widehat{ie} , \bar{a}). Jakobson's explanation for this difference relies on two assumptions of his about the degree of high

⁴In the rest of East Slavic, the *t'e* syllables were, of course, subject to backing.

⁵Zales'kyj (1968: 27, 33) has proposed that vowel quantity was lost before jer-loss in South Ukrainian, but not in North Ukrainian, which, supposedly, lost quantity only after jer-loss. Cf. also Kuraszkievicz (1931: 205).

tonality in a consonant, relative to that of the following vowel (1929: 63). First, it is assumed that before all high vowels consonants are palatalized to the 'i-degree', while before non-high vowels their palatalization is only to the 'e-degree'. Second, these two levels of palatalization in consonant and succeeding vowel combine to produce two kinds of sequences of consonant + vowel: either the tonality levels of both segments match (e. g. $t^i i$), or else the consonant may surpass the vowel in tonality (e. g. $t^i u$, $t^e a$, $t^i \hat{i}e$). Matching tonality is called 'adjusted' by Jakobson, while superior consonant tonality is called 'autonomous'. The basic rule, then, is that adjusted softness is lost, while autonomous softness is retained by Ukrainian. One may well question why it is that only two degrees of palatalization are produced by at least three (or more) vowel heights, i. e. why do e and \hat{a} produce a single level of softness in the preceding consonant (e -degree), in contrast to that produced by i and \hat{u} , when e and \hat{a} are different in terms of vowel height? Other doubts are raised by the presence of two different $\hat{i}e$ diphthongs. It appears that the use of $\hat{i}e$ instead of \bar{e} is only for the purpose of giving consonants autonomous softness when they occur before this vowel.

Kuraszkiewicz (1931: 208), recalling Trubetzkoy's approach, has attempted to link the retention of Ukrainian consonant palatalization before certain vowels to the presence of the first component of a diphthong, such as the i of $\hat{i}e$. This solution fails to account for the lack of dispalatalization before the front vowels \hat{u} , \bar{e} , \hat{a} , which we are assuming for the period in question.

III

By establishing the chronological sequence of events, of which the Ukrainian consonant dispalatalization was only a part, we can shed light on the nature of the process itself. Trubetzkoy (1925: 306) was able to establish Ukrainian sound-changes that both preceded and followed the consonant hardening within a relatively short span of time. Firstly, Ukrainian jer-loss (i. e. loss of weak jers and change of strong jers to e , o) had to precede the consonant dispalatalization, since there is no dispalatalization before the zero-reflex of weak jers, but the strong jer reflex, $e < \bar{o}$, does cause dispalatalization, exactly as does original e , e. g. $d' \bar{o} n' \bar{o} > den'$ 'day'. Therefore, this example must have passed through an intermediary stage $d' en'$, only after which consonants were hardened before i , e . On the other hand, the Ukrainian assimilation of jot to a preceding soft conso-

nant must have followed the consonant dispalatalization before *i*, *e*, since it left soft consonants before *e*, which survive in dialects even today, e. g. *znan'be* > *znan'je* > North Ukrainian *znan'n'e* 'knowledge'. The chronology discovered by Trubetzkoy, thus, is as follows:

1. Jer-fall ($d'b n'b > d'en'$; $znan'be > znan'je$).
2. Consonant dispalatalization ($d'en' > den'$).
3. $C'j > C'C'$ ($znan'je > znan'n'e$).

Since, according to Trubetzkoy, the change of $C'j > C'C'$ took place in Ukrainian and Belorussian at a time when Russian dialects still had not lost jers, the Ukrainian consonant dispalatalization must have also occurred when dialects to the north of Ukrainian still had not undergone jer-loss. In view of this, the dispalatalization most likely occurred very soon after Ukrainian jer-loss, but as yet before jer-loss in areas to the north (Belorussian and Russian).

Čekman (1970: 71-85) has observed the basic similarity between the consonant dispalatalizations and cases of vowel backing that are characteristic of Slavic, as well as other languages. Let us adopt this convenient terminology, also found in the work of many Polish historical linguists, which refers to vowel backing as a 'vowel dispalatalization', which emphasizes the fact that both consonant dispalatalization and vowel backing share the common feature of a lowered inherent tonality.

Our assumption that syllabic synharmony prevailed until jer-loss is another way of saying that any syllable of the *CV* type had to be either of high tonality (palatal or palatalized consonant + front vowel), or of low tonality (unpalatalized labial, dental, or velar + back vowel). The *CV* syllable of the synharmonic type carried one distinctive and one redundant mark of tonality, since both consonant and vowel were marked for this single feature. East Slavic languages have all tended to remove this redundancy by lowering the tonality of one of the two syllabic components, either the consonant or the vowel. Although the redundancy could theoretically be removed equally as well by raising the tonality of low tonality elements, in practice East Slavic has moved in the direction of lowering tonality, possibly because high tonality is marked, and the tendency is to remove redundancy by selecting the unmarked, low tonality value. In table 1, the two theoretical possibilities of lowering and raising tonality are depicted.

I. Lowering of tonality.

1. $C'V_f$ vs. $CV_b > CV_f$ vs. CV_b (Consonant dispalatalization.)

	2.	$C'V_f$	vs.	CV_b	>	$C'V_b$	vs.	CV_b	(Vowel dis- palatalization.)
II.	Raising of tonality.								
	1.	$C'V_f$	vs.	CV_b	>	$C'V_f$	vs.	$C'V_b$	(Consonant palatalization.)
	2.	$C'V_f$	vs.	CV_b	>	$C'V_f$	vs.	CV_f	(Vowel palatalization.)

Table 1. Four possible ways of removing synharmonic redundancy (V_f = front vowel, V_b = back vowel).

Lowering of tonality may affect either consonants or vowels, which leads to the occurrence of consonant and vowel dispalatalization, respectively. Raising tonality, correspondingly, yields consonant and vowel palatalization. It should be observed that both depicted dispalatalization processes for the removal of tonality redundancy can have important phonological consequences; consonant dispalatalization can remove the opposition of palatalized vs. unpalatalized consonants (e. g. *t'e* vs. *to* > *te* vs. *to*), while vowel dispalatalization can eliminate the front vs. back vowel opposition (e. g. *t'e* vs. *to* > *t'o* vs. *to*). Of course, environmental restrictions can mean that the loss of either consonant palatalization or vocalic frontness vs. backness may occur only in certain positions.

Whenever syllabic synharmony prevails, it is difficult to state which element, consonant or vowel, is distinctive, and which is redundant, although it is clear that both distinctiveness and redundancy are present. The removal of this redundancy is linked to either consonant or vowel dispalatalization in East Slavic, depending on whether the phonemic weight is finally concentrated on the vowel or consonant.

As we have indicated, consonant dispalatalization involves a change of palatalized consonant to its paired unpalatalized value, with retention of the following front vowel. Vowel dispalatalization specifies the retention of the palatalized consonant, but the change of the vowel to its paired back-vowel value. Where no paired value exists in the system, the dispalatalization is blocked, whether of the consonant or vowel type. A noteworthy fact about the Ukrainian dispalatalization is that aside from the *t'i*, *t'e* syllables which were subject to consonant dispalatalization, all other front vowel syllables underwent vowel dispalatalization, except for the vowel *iê* (from *jat'* and *ê* before a soft consonant), which had no back-vowel counterpart at the time of the vowel backing⁶. Examples of the front

⁶Possibly, another unpaired front vowel was the raised *ê* (< *e*), which appeared aft-

vowel dispalatalizations among vowels other than *i*, *e*, *ie*, are as follows: *t'ü* > *t'u* (*t'üb'it'i* > Modern Ukrainian *t'ubyty* 'love', *t'ët* > *t'ot* (North Ukrainian *n'üös* > *n'ös* > *n'ës*), *t'ä* > *t'a* (*t'ät'i* > Modern Ukrainian *t'aty* 'cut'). In addition, when soft palatal consonants (hushings and jot) began a synharmonic syllable, original *e* (and *e* < *ь*) was dispalatalized to *o*, when followed by an originally hard consonant, e. g. *žena* > *žona* 'wife'.

These facts indicate that the syllables *t'i*, *t'e* are unusual instances of front-vowel syllables that experienced dispalatalization of the consonant, rather than the vowel. Since all instances of vowel dispalatalization required that a soft consonant precede the front vowel in question, it is logical to assume that the presence of already hardened consonants in the syllables *ti*, *te* made a vowel dispalatalization unrealizable, since if *t'e* had existed at the time of vowel dispalatalization, the result would have been *t'o*, as seen in the *t'ë* > *t'ö* and *čë* > *čö* changes. In other words, a relative chronology suggests itself, according to which consonant dispalatalization precedes vowel dispalatalization. Since Trubetzkoy definitively established the fact that consonant dispalatalization occurred after jer-loss (on the basis of cases such as *den'*, cited above), our chronology places both sorts of dispalatalization, consonant and vowel, after jer-fall in Ukrainian. This is a perfectly understandable order of events in view of the fact that jer-loss created the first independent use of consonant palatalization (e. g. in word-final position in cases such as *dan̄* vs. *dan'ь* > *dan* 'given' vs. *dan'* 'tribute', cf. Lunt 1956: 310), permitting either consonantal or vocalic tonality to emerge as the single non-redundant mark of a syllable's tonality. Trubetzkoy (1925: 296-301) observed that a whole series of sound-changes is common to Ukrainian and Belorussian, but absent in Russian. He explained this fact by the proposal that these changes required a phonetic environment that lacked jers for their operation, and that only Ukrainian and Belorussian had, indeed, already lost jers during the period when these sound-changes were active. However, as soon as they spread to a territory still possessing jers (i. e. Russian), these isoglosses came to a halt

er soft consonants (hushings and jot), and preceded soft consonants and front vowel syllables. Assuming an unpaired *ë*, rather than *e*, in this position, accounts for the lack of the *e* > *o* change after palatals in cases where either a soft consonant or front vowel syllable followed the vowel. Cf. *žena* > *žona* 'wife', but no *o* in *šest* 'rustle', *pšenica* 'wheat', *večerja* 'supper', *šesty*, gen. sing. 'six'.

and spread no further. Such changes include that of $C'j > C'C'$, which could not function on Russian territory, which only had the groups $C\text{ }j$ at the time. Trubetzkoy, however, did not list Ukrainian consonant dispalatalization as one of the changes that depended on jer-loss for its spread. He stated, on the contrary, that the Ukrainian consonant dispalatalization 'was, indeed, the only sound-change of this period which, without any evident reason, did not spread across the South Russian (Old Ukrainian) border' (Trubetzkoy 1925: 306). If this elimination of synharmonic redundancy depended on a post-jer-loss system to function, it seems apparent that the change would have stopped its spread as soon as a territory with jers still present were reached. This can explain why the later dispalatalization of vowels (in contrast to that of consonants) has spread across all of East Slavic. Consequently, the earlier isogloss for consonant dispalatalization before i , e , began in South Ukrainian, which had already lost jers, and first reached a territory with jers on the North Ukrainian-Belorusian border. On the other hand, the later isogloss for vowel dispalatalization must have remained behind the isogloss specifying jer-loss, so that all East Slavic territories were encompassed by the change.

Thus, we are suggesting that vowel dispalatalization, including the changes $\ddot{u} > u$, $\ddot{e} > \bar{o}$, $e > o$, and $\ddot{a} > a$, conditioned by a preceding soft consonant, took place only after the consonant dispalatalization of $t'i > ti$ and $t'e > te$. This chronological assumption explains why hushings and jot, before e , could condition the $e > o$ change (e. g. *pšeno* > *pšono* 'millet', *ščeka* > *ščoka* 'cheek', *znajemyj* > *znajomyj* 'acquaintance'), while other consonants, which we assume to have already hardened, retained their following e (e. g. *nebo* 'sky', *selo* 'village', *vesna* 'spring'). Our chronological scheme for the dispalatalization of both consonants and vowels in Ukrainian is shown in table 2.

	žena	žen'it'i	s'elo	s'el'ь s'el'ь	d'ь n'ь	d'ied'ь	p'ec'ь p'ec'ь
1. Compensatory lengthening before weak jer ($e > \ddot{e}$, $o > \ddot{o}$).							
2. Jer-loss.				s'el	d'en'	d'ied	p'ec'
3. Consonant dispalatalization before i , e .		ženiti	selo		den'		

4. Raising of \bar{e} and e after soft consonant, preceding soft consonant or front vowel.	žēniti	p'īēč
5. Front vowel dispalatalization after soft consonants.	žona	s'ōl

Table 2. Chronology of Ukrainian dispalatalization and related developments.

As to the process of compensatory lengthening of $e > \bar{e}$ and $o > \bar{o}$, we recognize that it had to occur before the total loss of final weak jers, since the new $e < \bar{e}$ and $o < \bar{o}$ did not lengthen in closed syllables (e. g. *den'*), cf. Filin (1972: 221). This has been represented as the first change. Next comes the process of jer-loss, which created the novel opposition of /e/ vs. /ē/ (e. g. *p'es* 'dog' vs. *s'ēl*, gen. plur. 'village'), due to instances of both lengthened e and non-lengthened $e (< \bar{e})$ in newly closed syllables ($p'_{\bar{e}}s_{\bar{e}} > p'es$, $s'_{\bar{e}}l_{\bar{e}} > s'ēl_{\bar{e}} > s'ēl$). The new $e (< \bar{e})$ in closed syllables merged with older open-syllable e (*selo*). The most important consequence of jer-loss, however, was the introduction of independent phonemic palatalization, for the first time not conditioned by a following front vowel (cf. the n' of *d'en'*). This phonemic separation of palatalized and unpalatalized consonants led to a change in the tonality of either the consonant or vowel to paired low tonality values in all CV groups.

First came the dispalatalization of consonants, before i and e . Only palatalized, rather than palatal consonants, could lower tonality in this way, since only the palatalized were paired to existing low tonality unpalatalized consonants (i. e. t' had paired t , but $č$ had no such pair). Following the consonant dispalatalization, we assume the vowel dispalatalization to have occurred, which caused all paired front vowels, following soft consonants, to back. The syllables ti , te , were naturally exempted from this backing, since hard consonants preceded these vowels. All cases of *jat'* (cf. *d'īed*) were exempt from backing due to the unpaired status of front vowel $\bar{i}\bar{e}$. In addition, we should observe that all cases of \bar{e} and e , which followed soft consonants and preceded soft consonants of front-vowel syllables⁷, were also exempt from backing (e. g. *p'ēč* 'oven', *šēs't'* 'six', *čel'ād'*

⁷There is some debate as to whether the environment for the absence of the $\bar{e} >$

'court servants', *šelest* 'rustle'). We can assume that in these cases the \bar{e} and e had become raised to \hat{e} and \acute{e} , respectively, before the vowel dispalatalization, which made the vowels unpaired and thus blocked their backing. Thus, front vowels remain in the above cases, without dispalatalization. There is textual evidence for the raising of $\bar{e} > \hat{e}$ before soft consonants, which caused the vowel to merge with *jat'*; the letter for *jat'* was often used in such cases, instead of expected e (cf. Filin 1972: 225), called 'new *jat'*'. Thus, the unifying factor in both consonant and vowel dispalatalization was the participation only of paired sounds that were correlated on the basis of tonality features (palatalization in consonants, front/back in vowels).

IV

Now let us confront the question of why Ukrainian syllables containing i and e were subject to consonant dispalatalization, or concentration of the tonality distinction on the vowel, while all other paired front vowels lost the tonality distinction by backing to their paired correlates.

We can conceive of the early Ukrainian vowel system as consisting of two subsystems, unmarked and marked. This very fact has been observed by Zales'kyj (1968: 28), in reference to the North Ukrainian stressed and unstressed vowel systems. We shall divide the Ukrainian vowel system, which we have been assuming for the period following *jer*-loss (i. e. before either dispalatalization), into two subsystems, the unmarked five-vowel cardinal system, and the marked remaining vowels, as follows:

1. Unmarked

i	u
e	o
a	

2. Marked

y	ü
\hat{e}	
\bar{e}	\bar{o}
\bar{a}	

Upon further inspection, it becomes apparent that the question of con-

$\acute{e}o$ change was the position before a soft consonant, or before either a soft consonant or syllable with a front vowel. We are adopting the latter formula, since we assume consonant dispalatalization to have taken place by the time of $\acute{e}e > \acute{e}o$. An already hardened l , as in *šelest*, could not have blocked the $e > o$ change, so we are attributing this blocking action to the front vowel syllable. Cf. Shevelov (1956: 485 and 1978: 288).

sonant dispalatalization is closely connected to these differing vowel subsystems. Unmarked front vowels (*i*, *e*) generalized hardness in the preceding consonant, so that the vowels, rather than the consonants, maintained the tonality distinction. Conversely, the marked paired front vowels (*ü*, *ē*, *ā*) all were subject to vowel dispalatalization, which had the opposite effect; namely, the preceding consonants maintained their inherent tonality distinction, but the vowels lost it. Thus, in the period after jer-loss we have been concentrating on, cardinal front vowels began to imply neutralization of the preceding consonant's tonality (realized as low tonality), while non-cardinal front vowels had their own tonality distinction neutralized, also realized as unmarked low tonality.

To illustrate this situation, we will first consider the change in the two unmarked front vowels, *i* and *e*. Originally, the first syllables of such words as *s'ila* 'force', *v'ela* fem. 'led', were opposed to the first syllables of *syra*, gen. sing. 'cheese', *vola*, gen. sing. 'ox', on the basis of both consonant tonality (*/s'*, *v'/* vs. */s*, *v/*) as well as vowel tonality (*/i*, *e/* vs. */y*, *o/*). However, the loss of consonant sharpness before unmarked front vowels led to a pure vocalic tonality opposition in these cases: *sila*⁸, *vola* vs. *syra*, *vola*. The process of consonant dispalatalization before *i*, *e* brought about a situation in which all cardinal vowels (both front and back) could only be preceded by unmarked hard consonants. However, the subsequent vowel dispalatalization changed this pattern, permitting a novel opposition of consonant palatalization to exist before the back vowels *u*, *ō*, *a*.

The backing of paired marked front vowels *ü*, *ē*, *ā*, eliminated the front-back vowel oppositions */ü/* vs. */u/*, */ē/* vs. */ō/*, and */ā/* vs. */a/*, in favor of consonant tonality. This had repercussions for the unmarked system as well, since the cardinal vowels *u* and *a* lost their former pure front-back oppositions. For example, *l'üd* 'people' vs. *lug* 'meadow', *m'ed* 'honey'⁹ vs. *mōj* 'my', *r'ād* 'row' vs. *rad* 'glad', changed to the pure consonantal oppositions *l'ud* vs. *lug*, *m'ōd* vs. *mōj*, *r'ad* vs. *rad*. The evolution of originally synharmonic syllables through the processes of consonant and vowel dispalatalization, is presented in table 3.

⁸The later change of *i* > *y* e. g. *sila* > *syla*) has been linked to the raising of *ie* > *i*. Cf. Nazarova (1962: 105-6) and Zales'kyj (1968: 26).

⁹The form *med* is found in the Ukrainian literary language, but reflexes of *m'ōd* occur in dialects.

I. Original situation.		
Unmarked		Marked
t'i	tu	ty t'ü
t'e	to	t'îe
ta		t'ë t'ö
		t'ä
II. After consonant dispalatalization.		
Unmarked		Marked
ti	tu	(No change.)
te	to	
ta		
III. After vowel dispalatalization.		
Unmarked		Marked
(No change.)		ty t'u
		t'îe
		t'ö/t'ö
		t'a
IV. Combined results.		
ti	ty	tu/t'u
t'îe		t'ö/t'ö
te		to
ta/t'a		

Table 3. Evolution of synharmonic syllables through dispalatalization.

Many important further changes can be derived from the system that came about as a result of the two dispalatalizations (part IV of table three). The vowel \hat{o} diphthongized to $\hat{u}\hat{o}$, at least in North Ukrainian¹⁰, which created a back vowel pair for $\hat{i}\hat{e}$. Secondly, the opposition ti vs. ty was an anomaly in the system, since only in this case was the front-back opposition devoid of concomitant rounding. The solution throughout the vast majority of Ukrainian dialects¹¹ was to merge the two vowels into one. The actual resulting vowel is quite variable phonetically, ranging from front to central, and high to high-mid or even mid (cf. Zityński 1932: 14-16). The merged value of i and y has tended to be equivalent to i in those dialects where the diphthongs $\hat{i}\hat{e}$ and $\hat{u}\hat{o}$ are found (cf. Zales'kyj

¹⁰There is no unanimity of opinion as to whether South Ukrainian also diphthongized \hat{e} , \hat{o} , and jai' before eventually monophthongizing them as i . Cf. Žylko (1966: 47-8) for discussion.

¹¹Peripheral Carpathian dialects preserve the opposition of i vs. y without merger, cf. Zityński (1932: 14) and Žylko (1966: 55).

1968: 26), but more central, i. e. closer to *y*, in those dialects which have *i* in place of $\hat{i}\hat{e}$, $\hat{u}\hat{o}$ ¹². This indicates that all dialects have striven to fill the important unmarked position of *i*; in South Ukrainian a vowel shift has caused the reflexes of *jat'*, \bar{e} , and \bar{o} to encroach on the value of *i*, as a result of which earlier *i* (the early merged value of *i* and *y*) moves in the direction of a central vowel. This scheme permits us to assume that the earliest Ukrainian merged value of *i* and *y* was *i*, which remained more or less as such, unless the change of other vowels to *i* then sparked a shift of *i* ($< i, y$) towards *y*. In terms of vowel marking, the merger of *i* and *y* in *i* means that the change $y > i$ took place. This accords well with our understanding of the events described herein, since we can now conclude that in every instance where a front-back vowel pair contained both a marked and an unmarked member, there was a merger in the unmarked value; i. e. \hat{u} vs. *u* and \hat{a} vs. *a* merge as *u*, *a*; *i* vs. *y* first merges as *i*, as in North Ukrainian dialects of today. This suggests that the vowel changes known as dispalatalization may be part of a larger process of vowel unmarking¹³.

We have indicated that the Ukrainian consonant dispalatalization was linked to the removal of synharmonic redundancy. However, as a result of this consonant hardening, certain new forms of redundancy were introduced for the first time. Specifically, whenever the front-back distinction was accompanied by another distinctive feature on a given vowel height, consonant softness began to imply the presence of that second feature in

¹²The dependency of the value of merged *i* and *y* on the presence or absence of diphthongs casts doubt on the traditional chronology, according to which $i > y$ had to precede $\hat{i}\hat{e} > i$, or else $\hat{i}\hat{e}$ and *i* would have merged as *y* (Nakonočnyj 1962: 138). Since original *i* backs to *y* only where the $\hat{i}\hat{e}$ has assumed the value of *i*, it seems that the phonological pressure to push the *i* towards *y* could only arise once $\hat{i}\hat{e}$ had already moved up to *i*. The change of $i > y$ could then be conceived of as having occurred only following hard consonants, since $\hat{i}\hat{e}$ changed to *i* before $\hat{u}\hat{o}$ did, and all consonants before $\hat{i}\hat{e}$ were soft, in contrast to those before merged $i (< i \text{ and } y)$, which were hard. Cf. Zales'kyj (1968: 26-7).

¹³In this connection, we may note that even when there was no consonant dispalatalization, as in Russian, Belorussian, and even Polish, the *r'i* syllables did not dispalatalize to back vowel paired values (e. g. **r'y*), as did other high tonality syllables. This can be explained by the proposal that dispalatalized syllables never changed unmarked cardinal vowels (e. g. *i*) to marked (cf. $\hat{u} > u$, $e > o$, $\hat{a} > a$, but not $i > y$). Ukrainian $i > y$, as indicated, was not part of the dispalatalization process, but resulted from the pressure on the system resulting from $\hat{i}\hat{e} > i$. The absence of soft consonants before Ukrainian *y* also excludes it from the category of vowel dispalatalization.

the following vowel. For example, within the high vowels of Late Common Slavic, *i*, *y*, *ü*, *u*, both front-back and round-unround were distinctive features. As a result of consonant hardening before *i*, softness before a high vowel began to signal rounding (*ti*, *ty*, *tu* vs. *t'u*), although rounding did not necessarily imply the presence of consonant softness. In the class of mid vowels (non-high and non-low), *îê*, *ê*, *ô*, *e*, *o*, the front-back feature was accompanied by a distinction of vowel quantity, while rounding was just a redundant property of back mid vowels *ô*, *o*. The diphthong *îê* (*jat'*) counted as two morae, as did *ê* and *ô*, in opposition to *e*, *o*. Compensatory length may have arisen phonetically before the loss of weak jers, but it was jer-loss that made this new length phonemic, as we have seen. As a result of dispalatalization, a palatalized consonant preceding a mid vowel began to imply the length of the vowel (*te*, *to*, *tô(t)*, but *t'îê*, *t'ô*). The low vowels *ä* and *a* were opposed only on the basis of front vs. back, and, consequently, consonant softness had no new redundant role to play here, as it did in the case of non-low vowels.

V

Our main observations have been based on a relative chronology, which places Ukrainian consonant dispalatalization before the process of vowel dispalatalization. Since the necessary environment for vowel dispalatalization was consonant softness (palatal or palatalized) before the vowel, this chronology explains why the hardened syllables of the type *te* (< *t'e*) failed to change, in contrast to other syllables of the type *če*, which conformed to the required environment, since hushings and jot were soft consonants at the time¹⁴.

Having accepted the notion of a consonant and vowel dispalatalization that occurred in sequence after jer-loss, we have observed that the effect on the vowel system can be subsumed under the following rule: in syllables with unmarked (cardinal) vowels, consonant tonality distinctions are lost in favor of the vowels, while in syllables with marked non-cardinal vowels, it was the vowel distinctions that were lost in favor of the consonants.

¹⁴We have not dealt with sporadic Ukrainian *e* > *o* after non-palatals, which was a much later process than those we have considered. Cf. Shevelov (1979: 1-2).

References

- Čekman, V. M. 1970. *Historyja procipastaŭlennjaŭ pa cverdasci-mjakkasci u beloruskaj move*. Minsk.
- Filin, F. P. 1972. *Proischozdenie russkogo, ukrainского i belorusskogo jazykov*. Leningrad.
- Jakobson, Roman O. 1929. Remarques sur l'évolution phonologique du russe. (*TCLP2*.) Prague.
- Kuraszkiewicz, Władysław. 1931. Z badań nad gwarami północno-małosukiemi. *Rocznik Slawistyczny* X. 175-209.
- Kuraszkiewicz, Władysław. 1939. Nowe obserwacje o ruskiej dyspalatalizacji spółgłosek przed *e i*. *III medjunarodni kongres slavista*. Saopštenja i referati, 37-8. Belgrade.
- Kuraszkiewicz, Władysław. 1963. Ukraińska dyspalatalizacja w gwarach podlaskich. *Z polskich studiów slawistycznych*. Seria 2. Językoznawstwo, 23-37. Warsaw.
- Lehr-Splawiński, Tadeusz. 1957. *Studia i szkice wybrane*. Warsaw.
- Lunt, Horace G. 1956. On the origins of phonemic palatalization in Slavic. *For Roman Jakobson*, ed. by Morris Halle et al., 306-15. The Hague.
- Nakonečnyj, M. F. 1962. Do vyvčennja procesu stanovlennja j rozvytku fonetyčnoji systemy ukrajins'koji movy. *Pytannja istoryčnogo rozvytku ukrajins'koji movy*, 125-65. Khar'kov.
- Nazarova, T. V. 1962. Fonemy *y-i* v dejakyx seredn'opolis'kyx hovirkax. *Doslidžennja z movoznavstva*, 94-119. Kiev.
- Šaxmatov, A. A. 1903. Wie im Kleinerussischen die Palatalisation der Consonanten vor *e* und *i* verloren ging. *Archiv für slavische Philologie* 25. 222-38.
- Šaxmatov, A. A. 1909. Review of *Ukrainskaja grammatika*, by A. Krymskij. *Rocznik Slawistyczny* II. 135-74.
- Shevelov, George Y. 1956. Konsonanten vor *e, i* in den protoukrainischen Dialekten. *Festschrift für Max Vasmer zum 70. Geburtstag*, ed. by M. Woltner and H. Brüuer, 482-94. Wiesbaden.
- Shevelov, George Y. 1978. Zur Chronologie der Entstehung der ukrainischen Dialekte im Lichte der historischen Phonologie. *Zeitschrift für slavische Philologie* XL: 2. 285-310.
- Shevelov, George Y. 1979. Why in Ukrainian *sl'ozy* 'tears' but *zelenyj* 'green', while in Russian *sljozy* and *zeljonyj*? *Slavonic and East European Review* 57: 1. 1-15.
- Smal-Stocki, S. and T. Gartner. 1913. *Grammatik der ruthenischen (ukrainischen) Sprache*. Vienna.
- Trubetzkoy, N. S. 1925. Einiges über die russische Lautentwicklung und die Auflösung der gemeinrussischen Spracheinheit. *Zeitschrift für slavische Philologie* 1. 287-319.

- Zales'kyj, A. M. 1968. Z istoriji ukrajins'koho vokalizmu. *Movoznavstvo* 5. 25-33.
- Ziłyński, Jan. 1932. *Opis fonetyczny języka ukraińskiego*. Cracow.
- Žuravlev, V. K. 1961. Formirovanie grupovogo singlarmonizma v praslavjanskom jazyke. *Voprosy jazykoznanija* 4. 33-45.
- Žylko, F. T. 1966. *Narysy z dialektolohiji ukrajins'koji movy*. Kiev.

Bloomington, Ind.

Ronald F. Feldstein