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SIGN OF JOD (THE SEMIOTIC FUNCTION OF /j/ IN LITHUANIAN)

This investigation is in a neo-Praguian tradition. This tradition is built on the work of Roman Jakobson inspired by Charles Peirce. It incorporates ideas of markedness developed by Michael Shapiro, Henning Andersen, and Raimo Anttila. It is definitely not in the tradition of American Transformational-Generative Grammar.

In previous papers I have discussed aspects of Lithuanian morphophonemics and morphology from this semiotic perspective. I have investigated stress, verb morphology, and ablaut. In my opinion, the property of markedness is a driving principle in the organization of Lithuanian derivational and paradigmatic opposition.

In this paper we will discuss the segment /j/ as it functions as a sign of markedness in Lithuanian, and we will show how through this analysis several apparent unrelated peculiarities of Lithuanian morphophonemics and morphology can be united. My approach is not a historical reconstruction. It is synchronic, but the correctness of a synchronic analysis must lie in its power to interpret the ongoing and future dynamics of the system. I do not believe in a synchronism based on the so-called ideal speaker-listener.

I. Traditional treatment of /j/ as a phonological problem. It was pointed out by Girdenis over 20 years ago, and repeated in detail in his *Fonologija*, that the phonetic facts of palatalization in Lithuanian permit four different phonological interpretations:

- 1) $C \sim C'$;
- 2) $CV \sim C\check{V}$;
- 3) $CV \sim \widehat{CV}$ [i.e., high tonality as a suprasegmental feature];
- 4) $CV \sim CjV$.

Girdenis rejects the fourth interpretation, but the general principle remains valid. In all these cases the contrasting acoustic signal is the same — heightened tonality, a raising of the second formant, associated with a consonant segment (or syllable), which is opposed to a consonant segment without this acoustic feature. As Trubetskoy pointed out over 50 years ago, given a language with a phonetic level con-

trast of $[CV \sim C'V]$, the correct phonological analysis must be determined by bringing in additional facts, if necessary from other levels. In this paper we assume that the fourth possibility is the best analysis. We base this on the Praguian principle of resolving ambiguities in phonological interpretation by studying morphophonemic alternations.

Within our framework, we further assume the operation of certain necessary phonetic processes. (Phonetic processes are not the same as Generative phonological rules. An example of the former would be automatic palatalization of consonants before /i/ in Lithuanian; an example of the latter would be the mythological rule $/k > s/$ in English.) For the purposes of our discussion of /j/, the relevant phonetic processes include:

- 1) deletion of /j/ in various environments, such as before consonants (*lieja*, but *lieti*);
- 2) $/eu/ > [jau]$;
- 3) phonetic palatalization of consonants before front vowels;
- 4) palatalization before and variable absorption of /j/, e.g., $/kja/ > [k'a]$, $/pja/ > [p'ja]$;
- 5) affrication of dental stops before /j/.

II. The inflexional system of Lithuanian is pervaded by the opposition of front and back vowel thematic elements. Further, there is an opposition: back vowel theme $\sim \sim /j/ +$ back vowel theme. There is a hierarchical relationship between front vowel theme endings, and back vowel theme endings preceded by /j/. Our analysis assumes a tripartite division of the Lithuanian inflected word: bare stem + theme + desinence. Note that either the theme or the desinence can have $/\emptyset/$ [zero] as an allomorph, but not both.

We propose the following hierarchy of markedness for most masculine nouns:
 $-o$ (*-as*) (U) $\sim -j\acute{o}$ (*-jas*) $\sim -i:$ (*-ys, -is*) (M).

Nouns in *-as, -ias* are unmarked with respect to nouns in *-ys, -is*, but nouns in *-ias* are marked with respect to nouns in *-as*.

In general, the opposition of (unmarked) back vowel theme and (marked) front vowel theme is expressed by the contrasting theme vowels themselves. However, the *-o* stem declension (I Decl) is itself unstable. The front vowel theme is replaced by the back vowel theme in the entire plural. In fact, this whole declension is in transition from a tripartite to a binary structure (stem + ending). In all these cases of theme loss or substitution the front vowel theme stems preserve their markedness by adding /j/. This /j/ can then be understood as a unit representing minimal markedness. Compare the Acc sg (theme contrast): *kálna, kėlią* — *kėlį*, with the Gen sg (theme neutralization): *kálno* \sim *kėlio, kėlio*.

In some paradigms only one case form shows the /j/ marker. Thus in Gen pl forms, where the long vowel desinence *-u* causes theme deletion (Levin, 1990), the minimal marker /j/ appears in all front vowel theme stems (except the highly marked consonant-stem declension and a few Decl III *-i* stems). For *-ė* and *-i* stems, this is the only case where /j/ appears. Cf. *dėdė* ‘uncle’, the Gen pl is *dėdžiū*, but in all other cases the root {*dėd-*} precedes the front vowel theme. Or, to put it another way, when theme vowel contrast is lost in specific case endings, /j/ remains behind as a pure (minimal) sign of opposition between back and front vowel themes.

III. In the Loc sg, *-jo* stems (where /j/ follows a consonant) take the front vowel theme *-y-*. Nouns with the agential suffixes *-toj-a-*, *-ėj-a* have taken the Loc sg from the *-u* stem declension (cf. *mókytojas* ‘teacher’, Loc sg *mókytojuje*). For other nouns with stem-final /V+j/, such as *vėjas* ‘wind’, *kraūjas* ‘blood’, both *-yje* (preferred?) and *-uje* occur. These special forms can be understood to be motivated if we take the structure of the Loc desinence to be *{-je}. For most declensional types the full theme vowel appears before this desinence; thus *brólyje* (*bról-y-+je*), *dienojė* (*dien-o-+je*), *ėglėje* (*ėgl-ė-+je*), *alujė* (*al-u-+je*). (Note also that when these Loc forms are shortened the /-e/ is dropped but the /j/, a real sign, not a mere hiatal epenthesis, remains behind to signify the case.) However, for *-o* stems the theme is dropped before the Loc desinence, and */-j-/ is deleted before a following front vowel as a phonetic process: *kaln-* + *-je* > /*kalnė*/ [kaln`ė]. However, when a stem ends in /j/, whether after a vowel {*mókytoj-*} or a consonant {*kelj-*} a theme vowel is inserted, resulting in the preservation of the morphological integrity of the stem. That is, there is no ellipsis when a stem-final /j-/ meets a desinence – initial /j-/. (Compare the 3rd person reflexive Future, where *s-* + *-si* > *-sis*. Does Lithuanian avoid morphology-damaging consonant haplology?) A “regular” *kėlias* > Loc **kelė* would represent a surface merger with the unmarked *-o* stem, and the neutralization of the contrast Stem (U) ~ Stem + j (M). We assume that insertion of a vowel to separate units or avoid phonological ellipsis is a sign that the units have morphological significance. Note also that if one operates with phonemic palatalization rather than /j/ in forms like *kėlias* and/or treats /j/ as a mere hiatus-breaker in, e. g., *rañkoje*, *kelyjė*, these exceptional Loc forms are unmotivated and unconnected. In Russian, where palatalized consonants are primarily part of the phonological inventory, neutralization before the Loc ending *-e* (cf. *kon'* ~ *koné*, *stol* ~ *stolé*) is perfectly acceptable, on the same level as final devoicing.

IV. Adjectives in *-us*. For unanalyzable masculine root NOUNS, the Decl I back-vowel theme, with Nom in *-as*, is clearly unmarked, while *-u* stems (Nom in *-us*) are extremely scarce and unproductive. However, among simple adjectives *-u* stems

(Nom in *-us*) are numerous, and apparently have some limited productivity at the expense of Decl I simple qualitative unsuffixed and deverbative adjectives.

Here we have a clear example of markedness reversal [Andersen '72, 45]; in the marked nominal category (Adj) the markedness of themes is reversed and the marked *-u* stems are productive. Thus unmarked case forms like Nom *gēras*, Gen *gēro*, Acc *gēra*, Nom pl *geri*, are unproductive with respect to marked adjective forms like Nom *puikūs*, Gen *puikaūs*, Acc *puiku*, Nom pl *puikūs*. However, the *-u* stem paradigm is unstable, and is not preserved in the other cases; the entire feminine declension for these marked adjectives is *-ja* stem. This has spread to the other cases of the masculine so that in the Dat sg, Inst sg, Loc sg, and the pl except for the Nom, the unmarked *gerám*, *gerù*, *geramè*, Gen pl *gerũ*, etc., is contrasted with the marked (and productive) *puikiám* (*{puikjám}*), *puikiù*, *puikiamè*, Gen pl *puikiũ*. Here there can be no question of the preservation of an underlying palatalized consonant or an underlying /j/. Nom *puikūs* and Dat *puikiám* are both marked with respect to *-a* stem Adjs, and the only function of /j/ is to serve as the mark of opposition when the theme vowel is neutralized, just as it does when themes are neutralized in the *-o* stem nouns.

With regard to the adjectives that have shifted or are shifting (LKG I, 762) from Decl I, Nom *-as* to Decl III Nom *-us*, it must be noted that in the feminine the entire paradigm is shifting from *-a* stem to *-ja* stem. If palatalization were viewed as essentially a fact of phonological structure, rather than the phonetic realization of /j/ functioning as a sign, there would be no reason for stem-final hard consonants to become palatalized; it would constitute a bizarre, irregular, yet productive sound change. But taking stem-final /j/ as an abstract element of minimal markedness provides an explanation for this productivity — markedness of the adjective with respect to the noun is preserved even when *-u* theme case forms are lost. Some may argue that the spread of *-jo* stem endings in the masculine declension is merely due to the influence of the feminine paradigm. That may explain why *-jo* spreads within the *-u* stem declension, but it does not explain why adjectives in *-as* shift over to *-us*, which also means that in the feminine *-a* stems change to *-ja* stems! Clearly /j/ functioning as a morphological sign is simpler than treating palatalization as a functional phonological process.

V. Past Active Participles. The PaAP formant is *-us-*, added to the bare Preterite stem. Thus

dirbti, Pret *dirbo* ~ ~ PaAP *dirbus-*;

tylėti, *tylėjo* ~ ~ *tylėjus-*;

plėšti, *plėšė* ~ ~ *plėšus-*;

rašyti, *rāšė* ~ ~ *rāšius-*.

The declension for the masculine is the adjective Decl I front vowel theme, for the feminine, Decl II. The masc Nom case forms are anomalous (-*es*, pl -*e*). The problem we are addressing is the contrasting stem shapes represented by *plėšė*, *plėšus-* ~ ~ *rāšė*, *rāšius*, which are not exceptional: all and only -*ė* (Conj IV) preterites with Infinitives in -*yti* have PaAP stem in -*ius-* ({-*jus-*}). This phenomenon can be explained if one assumes that the Present Active and Past Active participles replicate the markedness properties of the corresponding Present and Past stems. It is normal and productive in Lithuanian for the Present and Past stems of Primary and Mixed-type Conjugation to reinforce their opposition, so that the Present stem or both stems will have some additional marking. (When both stems are unmarked, tense is signalled only by conjugation [stem] alternation.) This additional marking carries over into the Present and Past participles. Thus, for example, Primary (2) verbs with marked Present:

rañda (M) ~ *rādo* (U) ~ ~ *rañdant-* (M) ~ *rādus-* (U);
silpsta (M) ~ *silpo* (U) ~ ~ *silpstant-* (M) ~ *silpus-* (U).

Primary (1) verbs with ablaut, root shortening, Pres in -*i-* or -*n-*:

peřka (M) ~ *piřko* (U) ~ ~ *peřkant-* (M) ~ *piřkus-* (U);
gina (U) ~ *gynė* (M) ~ ~ *ginant-* (U) ~ *gynus-* (M);
šauņa (M) ~ *šovė* (U) ~ ~ *šauņant-* (M) ~ *šovus-* (U);
rėkia (M) ~ *rėkė* (U) ~ ~ *rėkiant-* (M) ~ *rėkus-* (U).

Mixed type and secondary verbs in -*uoti* and -*auti*:

mýli (U) ~ *mylėjo* (M) ~ ~ *mýlint-* (U) ~ *mylėjus-* (M);
kābo (U) ~ *kabójo* (M) ~ ~ *kābant-* (U) ~ *kabójus-* (M);
grybāuja (M) ~ *grybāvo* (U) ~ ~ *grybāujant-* (M) ~ *grybāvu-* (U).

(Note that Present Conjs in -*i* and -*o* are marked with respect to -*a* presents, but they are unmarked with respect to suffixed preterites.) Only verbs with unmarked stems in the Present with the unmarked theme vowel -*a-* also lack additional marking in the principal parts:

dirba ~ *dirbo* ~ ~ *dirbant-* ~ *dirbus-*;
mėta ~ *mėtė* ~ ~ *mėtant-* ~ *mėtus-*;
gyvėņa ~ *gyvėno* ~ *gyvėņant-* ~ *gyvėņus-*.

However, mixed type (1) verbs, derivationally marked, strongly mark the Present by using the Conj III theme, normally the unmarked past conjugation:

plaukýti: *plaũko* (M) ~ *plaũkė* (U);
kaitýti: *kaĩto* (M) ~ *kaĩtė* (U).

Since the markedness value of the theme vowel -*o-* is lost in the Present participle formation ({*plauko-*} + {-*nt-*} by phonetic processes becomes *plaukant-*), the mini-

mal /j/ marker serves to replicate a markedness contrast from the finite stems to the participle stems:

plaũko (M) · *plaũkè* (U) ~ ~ *plaũkant-* (U) ~ *plaũkius-* (M).

These mixed type (1) causatives and iteratives also thereby maintain a minimal contrast with their source verb stems, cf. *plaũkti*: *plaũkia* > *plaũkiant-*, *plaũkè* > *plaũkus-* 'swim' ~ ~ *plaukýti*: *plaũko* > *plaũkant-*, *plaũkè* > *plaũkius-*, 'swim' [iter.]. For these Preterites in -è, /j/ functions as a minimal marking of the stem in order to maintain a contrast with the Present Active Participle stem. In this respect it is functioning the way it does in the -u stem Adj paradigm.

Note that the /j/ marker cannot be elegantly explained at the phonological level; its only function is as a mark of opposition within the contrast patterns of parallel grammatical forms. Note that this analysis does not contradict the strictly historical explanation for the two past active participles from -è Preterite stems (Hock, 1972).

VI. The Conditional Declension. This declension, which is still not fully explicated, also offers an otherwise inexplicable illustration of the markedness function of /j/.

<i>běgčiau</i>	<i>běgtume</i>
<i>běgtum</i>	<i>běgtute</i>
<i>běgtu</i>	

The constant sign of the conditional mood in this paradigm is the morph {-tu-}, which, however, has an allomorph /-tj-/ in the 1st person sg.! This again recalls the -u stem adjectives, where the theme in -u is being replaced by -jo declension endings, preserving a minimal markedness contrast. Here there is no -ja stem feminine declension to provide an explanation, yet we see that /j/ and /u/ can allomorphically alternate in contrasting with unmarked paradigms. Since this paper deals only with the semiotic function of /j/ as a morphological marker, we will not offer a phonological explanation for this alternation. But one may note that /i/ and /u/ share a low F₁ (first formant), correlated with a relatively more open pharyngeal cavity, whereas the least marked vowel /a/, with maximum oral cavity opening and constricted pharynx, has a high F₁ value.

VII. Concluding Remarks. In this paper I have argued for the independent status of /j/ in the phonological inventory, rather than palatalization as a distinctive feature, citing several seemingly disconnected cases from morphology, where the simplest explanation revolves around the sign function of /j/. This was done in the spirit of and inspired by Trubetskoy, who argued that ambiguous phonological interpretations can be resolved at the morphological level.

This leads us to ask, what is the basis for thinking that assuming *Cj* instead of *C'* will complicate the morphology? This was Girdenis' position, and it is repeated by Klimas, and the authors of the Russian translation of the Academy Grammar. The assumption that *Cj* instead of *C'* is a simplification seems so reasonable to me that I am frankly puzzled by the view that it is a complication. Girdenis offers as an example of a complication *sakiaũ*, *sakeĩ*, but here a /j/ in the 1st Person sg is extruded from */eu/ (<e+u), a reasonable and consistent low-level phonetic process, i.e., any */eu>/jau/. Perhaps people see this approach as Generative Phonology, but I disagree. No one in Baltic linguistics has published more serious argumentation against GP than I, but who ever believed that a narrow phonetic surface is all you need to deduce the phonology? A British pronunciation of the word *tune* [čũn] is clearly phonemic /tjun/ (cf. /pjur/). No one has suggested that /č/ is a British phoneme. Note also *allegro* forms like [didžə] < /did+yu/. Such facts justify an autonomous emic level that is a coherent carefully defined abstraction. This was recognized long before GP, by the founders of modern phonology in linguistics: Bauduin de Courtenay, Saussure, Sapir, Bloomfield, Trubetskoy.

It is a mistake to consider any abstraction requiring a rule-like statement as Generative. It seems to me that the crucial distinction is in the exceptionless character of true phonetic processes, and actual linguistic behavior, which demonstrates the reality of phonetic process-type rules, in such things as the pronunciation and assimilation of foreign words, and disproves the reality of many classic GP rules such as the notorious English /k/ > /s/ (e.g., in "criticism"), or Lithuanian */a:/ > /o:/, and */ou/ > /uo/ as a "metathesis" rule. Clearly there are dialects where the alternation of /t/ and [č] < /tjV/ is leveled in paradigms, and we have evidence for the changing status of /j/ and the establishment of phonemic palatalization in the Slavic manner, but one of the most striking features of normative Lithuanian morphophonemics is the regular, automatic character of this alternation. Nor is it enough to point out the historical explanations for many of the morphological peculiarities I have cited here. History provides the raw materials going in, but dialect differentiation shows that the same starting point can have many outcomes, depending on the abductions of speakers engaged in analogical reshaping, as well as on their choice of forms to extend, or to peripheralize, through unconscious preferences in usage. One needs only to examine and compare how a real palatalized consonant series affects the morphology of, e.g., Russian, to be struck by the considerable differences with Lithuanian. Alternations like that of so-called soft and hard consonants within the -u/-ia adjective declension in Lithuanian, have been historically unacceptable in Russian. This reflects the radically different status of palatalization in the two languages. Phonetic facts also de-

monstrate this difference. The increasing palatalization as a function of the height of the following vowel, and the spread of palatalization through clusters, are diagnostic signs pointing to palatalization as a predictable phonetic feature in Lithuanian. They contrast sharply with the facts of normative Russian, where strong palatalization is either present or absent, and tends to be neutralized in all but the last segment of clusters. Those facts point to phonological palatalization. Interestingly, Russian dialects offer many examples that indicate the gradual emergence of current status from an earlier more Lithuanian-like situation.

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