

Paradigmatic correspondence account of stress in noun paradigms in Ukrainian

In this paper we present a synchronic account of stress placement in paradigms of nouns in modern Ukrainian. Our account employs constraints on Paradigm Uniformity and Contrast similar to those in Kenstowicz (2003) and McCarthy (2005). Crucial components are the pressure to reach paradigm uniformity and a partly conflicting pressure to have distinct stems in Sg and Pl subparadigms. This distinguishes our proposal from others put forward for Ukrainian or closely related Russian (e.g., Stankiewicz (1993), Butska (2002), Zaliznjak (1985), Alderete (2001)), though we share with some of them certain important ideas.

Main patterns. Ukrainian has 4 main patterns of stress, shown schematically below. \square stands for stem, \circ , for ending, and stress is shown by filling. Stress which should have been on the null ending falls on the last syllable of the stem, and is counted as regular $\square\bullet$.

- a*, fixed stem stress: Sg, Pl $\blacksquare\circ$ N.Sg: na'dij-a, 'osin^j- \emptyset , 'ranok- \emptyset , ko'lin-o
b, fixed desinential stress: Sg, Pl $\square\bullet$ N.Sg: sta't^jt^j-a, 'stil- \emptyset , 'došš, bi'd-a
c, Sg stem, Pl desinential: Sg $\blacksquare\circ$ Pl $\square\bullet$ N.Sg: 'sad- \emptyset , 'mor^j-e, N.Pl: sa'd-y, mo'r^j-a
d, Sg desinential, Pl stem: Sg $\square\bullet$ Pl $\blacksquare\circ$ N.Sg: kin^j- \emptyset , se'l-o, N.Pl: 'kon^j-i, 'sel-a

Certain case-number forms in some paradigms are always homonymous with some other form, e.g., Voc Pl is always the same as Nom Pl, Acc Pl is always the same as Nom Pl (for inanimate nouns) or Gen Pl (for animate nouns), etc. We propose that such case-number forms have no ending of their own and have to borrow another form's shape.

We treat all endings as underlyingly stressed. Stem syllables may be + or – stress. Faithfulness to the stem wins over faithfulness to the ending. In *a*, there is at least one +stress in the stem, in *b*, there is none. Stems of classes *c* and *d* correspond to those of *a* and *b*. The difference between those is caused by the presence or absence of the effect of a paradigmatic constraint $SG \neq PL$, which assigns one violation for each Sg form having the same stem as some Pl form. We assume that this constraint is only activated for stems marked in the lexicon as belonging to the respective $Sg \neq Pl$ class (we mark such lexically indexed constraints with underlining). Another way to implement lexical distinctions is to associate different rankings with different classes of stems. Our proposal is more restrictive, as it does not allow for untriggered constraints to influence anything, while re-ranking leaves that possibility.

HaveStress >> Sg \neq Pl >> Ident Stress I(nput)O(utput) stem >> IdentStress IO ending

class a: /-+./ <u>/gSg\neqPl</u>	HAVESTR	SG \neq PL	IdSTRIOSTM	IdSTRIOENDG	class c: /-+./ <u>/eSg\neqPl</u>	HAVE STRESS	SG \neq PL	IdSTRIOSTM	IdSTRIOEDG
a. \circ Sg -+ ., Pl -+ . -				**	a. Sg -+ ., Pl -+ . -		#!		**
b. Sg -+ ., Pl -+ . +			*!	*	b. \circ Sg -+ ., Pl -+ . +			*	*
c. Sg -+ ., Pl -+ . +			#!	*	c. Sg -+ ., Pl -+ . +	#!			
class b: /-+./ <u>/gSg\neqPl</u>	HAVESTR	SG \neq PL	IdSTRIOSTM	IdSTRIOENDG	class d: /-+./ <u>/eSg\neqPl</u>	HAVE STRESS	SG \neq PL	IdSTRIOSTM	IdSTRIOEDG
a. \circ Sg -+ ., Pl -+ . +				*	a. Sg -+ ., Pl -+ . +		#!		*
b. Sg -+ ., Pl -+ . -			#!	*	b. \circ Sg -+ ., Pl -+ . -			*	*
c. Sg -+ ., Pl -+ . -	#!			*	c. Sg -+ ., Pl -+ . -	#!			*

Two more ingredients are needed. First, other things being equal, we need to know where the stress falls in a polysyllabic morpheme. In disyllabic endings, stress always falls on the first syllable. Among stems, shift to a leftmost position is a frequent option. We propose to use a low-ranked constraint StressLeft. Second, in the *c* and *d* tableaux above we have missed important candidates — those in which Pl is more faithful to the input than Sg. The constraint $Sg \neq Pl$ tells us that two number subparadigms should be distinct, but does not tell which one is to be more faithful. We adopt a cyclic view and say that the Sg subparadigm is computed prior to Pl, and Pl is computed by reference to Sg. An alternative is to divide Ident Stress IO into Ident Stress IO Sg >> Ident Stress IO Pl; but it will not work for the words discussed in the next section.

Stress shift within the stem. There is a small subclass of *b* where the first syllable of the stem is stressed in Sg, and the second one in Pl (N.Sg 'koles-o, N.Pl ko'les-a; also 'dzerkalo, 'resheto). We propose those words have ++-marked stems. The analysis outlined above makes right predictions for such words: Sg does not have a Pl to compare with, so it realizes the optimal

option. Pl finds the otherwise optimal option already taken by Sg, and has to settle for the second best choice.

Sg / + + . + / εSg≠Pl	SG ≠ PL	IDSTRIOSTM	IDSTRIOENDG	STRLEFT	Pl / + + . + / εSg≠Pl	SG ≠ PL	IDSTRIOSTM	IDSTRIOENDG	STRLEFT
a. ☞ + -- . --		*	*		a. + -- . --	*!	*	*	
b. -- + . --		*	*	*!	b. ☞ -- + . --		*	*	*
c. -- . . +		**!		*(*)	c. -- . . +		**!		*(*)

Deviating case forms. (A) Voc Sg ending is always unstressed, even in *b* paradigms. (B) Acc Sg and Nom Pl in some words deviate from the desinential stress pattern (N.Sg *no'y-a*, A.Sg *noy-u*; N.Sg *bro'v-a*, N.Pl *brov-y*, both *b*-class nouns), while in other words they obey the general pattern of that word. (C) Some words show stem-final stress before the null Gen Pl ending, sometimes with a vowel alternation in the stem, even if they do not have stem-final stress anywhere else in the paradigm (N.Sg *zem'^j-a*, G.Pl *ze'me'^j-θ*).

We use constraints targeting specific case-number forms to account for those facts. NonFinality/Voc works for all words (though those words which do not have a special Voc ending and are merged to some other form are vacuously exempt from this constraint). NonFinality/NomPl, NonFinality/Acc and *[-stress]/--#[GenPl] are indexed so that they apply only to word classes that are specially marked. Vowel alternations are also indexed to specific word classes.

Polysyllabic *d*-class roots. We predict that Pl forms of *d*-words will have stress on their underlyingly stressless stems. For monosyllabic stems, that is enough. For polysyllabic ones, it is not: there are three distinct patterns there.

	Sg	Pl		Sg	Pl		Sg	Pl
Nom	☐☐● pome'l-o	☐☐○ po'mel-a	Nom	☐☐● pele'n-a	☐☐○ 'pelen-y	Nom	☐☐● 'yolo'v-a	☐☐○ 'yolov-y
Gen	☐☐● pome'l-a	☐☐○ po'mel-θ	Gen	☐☐● pele'n-y	☐☐○ 'pelen-θ	Gen	☐☐● 'yolo'v-y	☐☐○ yo'liv-θ
Inst	☐☐● pome'l-om	☐☐○ po'mel-amy	Inst	☐☐● pele'n-oju	☐☐○ 'pelen-amy	Inst	☐☐● 'yolo'v-oju	☐☐○ 'yolov-amy
Voc	= Nom Sg	= Nom Pl	Voc	☐☐○ 'pelen-o	= Nom Pl	Voc	☐☐○ 'yolov-o	= Nom Pl

To account for those, we add to our hierarchy a relatively low-ranking constraint Ident Stem O(ptimal)P(aradigms), which assigns one violation mark when any pair of stems belonging to the same paradigm are distinct, regardless of the extent of the difference between them.

pelena is exempt from the requirement to have stem-final stress in Gen Pl. For this reason, the only constraints active in placing stress in the plural are Ident Stem OP and Stress Left: the result is uniform leftmost stress. *pomelo* is subject to Gen Pl stem-final stress requirement, but it does not undergo vowel change in that form. As Ident Stem OP outranks StressLeft, stress is uniformly on the 2nd syllable in Pl. Finally, *yolova* is like *pomelo*, but it undergoes vowel change, and cannot satisfy Ident Stem OP for Gen Pl anyway. Then other forms with stem stress choose to place stress to the leftmost syllable.

/pelen/ + /y/, /θ/	*-/#GenPl / o/E→i	ID OP	STRLEFT	/pomel/ + /a/, /θ/	*-/#GenPl / o/E→i	ID OP	STRLEFT	/yolov/ + /y/, /θ/	*-/#GenPl / o/E→i	ID OP	STRLEFT
a. ☞ 'peleny, pelen				a. 'pomela, pomel	*!			a. ☞ 'yolovy, yo'liv		*	*
b. pe'leny, pelen			*!	b. ☞ po'mela, po'mel			**	b. 'yolovy, 'yoliv	*!	*	*
c. 'peleny, pelen		*!	*	c. 'pomela, po'mel		*!	*	c. yo'lovy, yo'liv		*	*!
								d. yo'lovy, yo'lov	*!	*	*!

The same Ident Stem OP constraint helps to deal with the general uniformity of stress placement in deviating forms. In words like *boroz'n-a*, type *c* with deviating Acc Sg, stress is stem-initial in Pl, and in Voc Sg as well; but in words like *kob'zar-θ*, type *b* with uniform stress on the ending, Voc Sg is *kob'zar^j-u*, with the stress on the 2nd syllable. More generally, we only find 3 places of stress placement in *yolova*-type words, which also have an alternation in Gen Pl. All other words can have at most 2 places of stress. Ident OP predicts that: it will drive stress to the same place where stress which cannot be shifted sits; e.g., with Voc *kobzar^j-u* we want the stem to be the same as the only stem-stressed form we can find, and it happens to be Nom Sg which cannot have other than stem-final stress. With the Pl forms of *pomelo*, we want to be similar to Gen Pl, which cannot have but stem-final stress. And with *borozna*, all stem-stressed forms obey StressLeft, as they do not deviate one from another when they do so.

The final ranking thus is: {HaveStress, Voc, Acc, NomPl, *[-stress]/--#[GenPl], Alternations} >> >> Sg≠Pl >> Ident Stress IO stem >> IdentStress IO ending >> Ident Stem OP >> StressLeft