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**Free stress variation and the rise of rhythmic rules in Russian**

In Russian, verbs are inflected for number (SG / PL) and gender (M / F / N) in the past tense. Since gender is not distinguished in the plural, each verb has four forms:

(1) a.    *ˈvide-l-Ø*        *ˈvide-l-a*        *ˈvide-l-o*        *ˈvide-l-i*
        see-PST-M.SG      see-PST-F.SG       see-PST-N.SG     see-PST-PL

     b.    *ˈv'o-l-Ø*         *ve-ˈl-a*         *ve-ˈl-o*         *ve-ˈl-i*
        lead-PST-M.SG     lead-PST-F.SG     lead-PST-N.SG     lead-PST-PL

     c.    *ˈvz'a-l-Ø*        *vz'a-ˈl-a*       *ˈvz'a-l-o*       *ˈvz'a-l-i*
        take-PST-M.SG     take-PST-F.SG     take-PST-N.SG     take-PST-PL

Examples in (1) show that there are three possible stress patterns in the past tense of verbs (cf. Zalizniak 1977: 80–1; Timberlake 2004: 100–1):

(a) stress falls on the same syllable of the stem in all forms, cf. (1a);
(b) stress falls on the ending in F.SG, N.SG, and PL; in M.SG, where there is no overt ending, it falls on the stem, cf. (1b);
(c) stress falls on the ending in the feminine singular and on the stem in the other three forms, cf. (1c).

Some verbs fluctuate between these classes, the most frequent type of fluctuation being the one between patterns (b) and (c). From the diachronic point of view, it reflects the transition from (c) to (b) (Zalizniak 1985: 379). Sometimes even more complex types can occur, for instance, the verb *otn'at'* 'to deprive' can have all of the following forms: *ˈotn'al / oˈtn'al ~ otn'aˈla / ˈotn'ala / oˈtn'ala ~ ˈotn'alo / oˈtn'alo / otn'aˈlo ~ ˈotn'ali / oˈtn'ali*.

This variation is usually regarded as unconditioned, which is reflected in prescriptive dictionaries of Russian: they give all existing forms, even though some of them are marked as incorrect or at least stylistically inappropriate (Avanesov 1988; Kalenčuk et al. 2012).

However, in the words of Tagliamonte, "[linguistic] heterogeneity is not random, but patterned" (2006: 6). As it is usually the case with free variation, it turns out not to be so free after all and can be accounted for to some extent. The choice made by the speaker can be influenced either by some language-internal factors or by some sociolinguistic variables such as age, dialect, social class, etc. (Walker 2010).

For example, dialectal variation does indeed play a role in the case of Russian past tense verbal forms; the Western dialects tend to replace pattern (c) with pattern (a) rather than with pattern (b), e.g. *proˈdal ~ proˈdala ~ proˈdalo ~ proˈdali* 'to sell'—and not the original *ˈprodal, prodaˈla, ˈprodalo, ˈprodali* (Zalizniak 1985: 379).

The state of variation is inherently unstable, and may pave the way to some new system-internal rules. Our hypothesis is that the variation in the past tense forms is partially determined on the synchronic level by the tendency to avoid stress clash and maintain alternating rhythm, conforming to Selkirk's (1984) Principle of Rhythmic Alternation. This phenomenon is widely evidenced cross-linguistically (cf. Liberman & Prince 1977; van der Hulst 1999), but has not been found in Russian before. We claim that the instability of verbal stress induces metrical rules such as these, and at least some of the speakers make use of them.

In order to show this, we conducted an experiment, in the course of which 76 respondents were asked to read aloud sentences opening the "red herring" brackets. The latter were intended to distract our respondents' attention away from phonology. What we were interested in was the stress pattern of the verbs *obn'al* 'hug.PST.M.SG' and *prodal* 'sell.PST.M.SG'. The amount of variation turned out to be quite substantial:

| | Stressed on the 1$^{st}$ syllable | Stressed on the 2$^{nd}$ syllable |
|---|---|---|
| *prodal* 'sell.PST.M.SG' | 167 (55%) | 137 (45%) |
| *obn'al* 'hug.PST.M.SG' | 67 (44%) | 85 (56%) |

Table 1. Stress variation in two Russian verbs in the past tense

A better idea of what is going on can be conferred if we look separately at the cases when the verb was followed by an initially-stressed direct object (ˈ*daču* 'dacha, cottage', ˈ*knigu* 'book', ˈ*An'u* 'Ann') and at the cases when the verb was followed by a direct object stressed on the second syllable (*braˈslet* 'bracelet', *porˈtret* 'portrait', *seˈstru* 'sister'):

| | Stressed on the 1$^{st}$ syllable | Stressed on the 2$^{nd}$ syllable |
|---|---|---|
| before ˈ*daču*, ˈ*knigu* | 94 (62%) | 58 (38%) |
| before *braˈslet*, *porˈtret* | 73 (48%) | 79 (52%) |

Table 2. Stress variation in *prodal* 'sell.PST.M.SG' ($\chi^2 = 5.31$, $df = 1$, $p = 0.02$)

| | Stressed on the 1$^{st}$ syllable | Stressed on the 2$^{nd}$ syllable |
|---|---|---|
| before ˈ*An'u* | 39 (51%) | 37 (49%) |
| before *seˈstru* | 28 (37%) | 48 (63%) |

Table 3. Stress variation in *obn'al* 'hug.PST.M.SG' ($\chi^2 = 2.67$, $df = 1$, $p = 0.10$)

Tables 2 and 3 show that the verbs we studied tend to have initial stress before an initially-stressed direct object, but the stress on the second syllable is more common if an object is also stressed on the second syllable. This difference is statistically significant at the 0.05 level for the verb *prodal*; it does not reach the desired threshold of 0.05 in the case of *obn'al*, but we can nevertheless observe a similar tendency. Thus, what is usually treated as free variation seems to be governed at least partially by rhythmic rules.

To conclude, language change leads to instability and variation, but this variation is rarely persistent. It can give rise to new rules, which are typologically common but were previously unattested in a language. Our study shows that this is the case with Russian: the leveling of stress paradigms leads to free variation, but this freedom tends to get restricted by the emerging rules—namely, stress clash avoidance and alternating rhythm rule.

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