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In Soviet Russia, alcohol is dependent on you*

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1. Introduction

Russian, like many other languages, has a means of marking indefinite DPs, in particular those headed by numerals, as semantically dependent on some plurality, in the sense that for every member of the plurality, the witness for the indefinite is to be chosen separately. In Russian, this is achieved by means of the preposition *po*.¹ (1), for example, means that the boys drank one bottle each — they cannot have shared.

- | | | | |
|-----|------------------------------------|-----|---|
| (1) | Mal'čiki vypili <i>po</i> butylke. | (2) | Každyj mal'čik vypil <i>po</i> bulylke. |
| | boys drank <i>PO</i> bottle | | every boy drank <i>PO</i> bottle |
| | 'The boys each drank a bottle.' | | 'Every boy drank a bottle.' |

The appearance of *po* is licensed not only by definite plurals, but also by the quantifier *every*, as shown in (2).² This makes it tempting to think that *po* is simply a marker of low scope with respect to a quantifier: the standard silent distributivity operator, attached to the verb phrase, in (1), and the universal quantifier in (2). Indeed, this idea has been taken as the basis of an analysis of similar dependency markers in other languages (Brasoveanu & Farkas 2011, Henderson 2014). Other authors have ascribed independent distributive force to such dependency markers while attempting to also explain their compatibility with overt universal quantifiers (Balusu 2006, Cable 2014, Kuhn to appear).

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¹In fact, there are two different *po* in Russian. One assigns dative case and goes with bare indefinites and indefinites headed by the numerals *odin* 'one', *tysjača* 'thousand', *million* 'million', *milliard* 'billion', and those numerals which end in *odin*. The other goes with plural indefinites headed by other numerals and assigns nominative case (Pesetsky 2013). The latter has a slightly greater range of uses (Pereltsvaig 2008), but both behave alike on all points discussed in this note.

²In addition, *po* is licensed by adverbial quantifiers over times and occasions, and in habitual and generic statements (e.g. Kuznetsova 2005, Pereltsvaig 2008).

The purpose of this note is to point out that Russian *po* differs in its meaning from other dependency makers on indefinites that can be found in languages such as English and Hungarian, and to present a number of puzzles that are posed by this element.

2. Homogeneity and *po*

2.1 Homogeneity

Plural predication is trivalent, in that sentences with definite plurals (and their negations) are sometimes neither true nor false. This phenomenon is known as *homogeneity*.³

- (3) The girls danced.
true iff all the girls danced.
false iff none did.
undef. iff some, but not all did.

Negation simply switches around truth and falsity, but leaves undefinedness alone, so that both (3) and its negation are undefined when only some of the girls danced.

2.2 Homogeneity removal with explicit quantification

This trivalence effect disappears with overt markers of distributivity (Schwarzschild 1994, Löbner 2000), such as adverbial *each*, but is present with silent distributivity.

- (4) Context: *Some, but not all of the boys ate a sandwich.*
 a. The boys each ate a sandwich. **false**
 b. The boys ate a sandwich. **undef.**

Notably, homogeneity also disappears with dependency-marked indefinites in English (adnominal *each*) and Hungarian (reduplicated numerals).⁴ (5a), and its counterpart in Hungarian, are plainly false as soon as one boy neither ate nor partook in a sandwich.⁵

³Schwarzschild 1994, Löbner 2000, Gajewski 2005, Križ 2015.

⁴The points made here about English adnominal *each* appear to replicate with German adnominal *je(weils)*. Data are not currently available for the numerous dependency-marked indefinites in other languages.

⁵Things are more involved when not every boy ate a sandwich of his own, but every boy at least shared a sandwich (Márta Abrusán, p.c.). In this case, the judgements for Hungarian in the text replicate when the dependent noun phrase is focused; for example, (i), where focus is marked through movement, is true in this situation.

- (i) A fiúk nem egy-egy sendvicset ettek.

However, the judgement is unclearer for (6b), and it is possible that that sentence incurs a homogeneity violation in such a situation. This would actually be expected, since it would be due to homogeneity with respect to a sandwich, whereas the dependent numeral is supposed to remove homogeneity with respect to

- (5) a. The boys ate one sandwich each.
 b. A fiúk ettek egy-egy szendvicset.
 the boys ate one-one sandwich

To the extent that the simple syntactic negations of these sentences are acceptable, they seem to be quite true in such a situation. In general, these sentences are most natural when uttered with emphasis on negation in response to an assertion of their positive counterpart.

- (6) a. The boys didn't eat one sandwich each.
 b. A fiúk nem ettek egy-egy szendvicset.
 the boys not ate one-one sandwich

As a further test, one can see what happens when clauses with a dependency marker are embedded under an inherently negative verb such as *doubt*. With definite plurals, we clearly see the pattern of inference that emerges with homogeneous and non-homogeneous sentences:

- (7) a. I doubt that the girls danced. \rightsquigarrow I think that no girl danced.
 b. I doubt that the girls all danced. \rightsquigarrow I think at least one girl didn't dance.

By this diagnostic, too, English and Hungarian sentences with dependency markers come out as non-homogeneous.

- (8) a. I doubt that the boys ate one sandwich each.
 \rightsquigarrow I think at least one didn't eat a sandwich or shared.
 b. Kétlem, hogy a fiúk ettek egy-egy szendvicset.
 doubt.1SG that the boys ate one-one sandwich

This constitutes a new argument for Kuhn's (to appear) contention that dependent indefinites of the Hungarian type should be analysed as having their own distributive/quantificational force, and not, as it were, as parasitic on the silent distributivity operator.⁶

the plurality of boys, on which it is dependent. The predicate *ate a sandwich* is undefined of an atomic individual that ate only part of a sandwich, and so the (non-homogeneous) universal quantification over boys is still undefined if everyone at least shared a sandwich but not everyone had one of his own (cf. Križ 2015). How precisely focus manages to remove this effect is unclear, but the observation fits with a general tendency of homogeneity-like effects to disappear under focus.

It is plausible that the situation in English is, in fact, similar, depending on whether there is narrow focus on *each*. We will leave this as a matter for further investigation.

⁶On this view, a challenge is posed by the fact that Hungarian reduplicated numerals are also licensed by *every*. Kuhn's formal system is set up in such a way that the quantificational force of the dependent indefinite is effectively vacuous in this case. However, neither his framework, nor any other incarnation of the Plural DRT (Brasoveanu 2006) on which it is based, is currently equipped to handle homogeneity-based trivalence and the homogeneity-removing effect of quantification. Further technical developments will be necessary to remedy this.

2.3 Homogeneity and Russian *po*

Russian *po* differs from the aforementioned cases in that it does not remove homogeneity. To the extent that plain negated sentences with *po* are acceptable, the interpretation reported is in accordance with homogeneity:

- (9) ??Mal'čiki ne polučili po knige.
 boys not received PO book
 'The boys didn't get a book.' ~> None of them got a book.

In contrast, homogeneity clearly disappears when there is an overt quantifier above *po*:

- (10) Mal'čiki ne každyj polučili po knige.
 boys not each received PO book
 'The boys didn't all get a book.'

Embedding under *not believe* and *doubt* also confirms a homogeneous interpretation:

- (11) Ja ne dumaju / somnevajus', čto mal'čiki prinesli po cvetku.
 I not think / doubt that boys brought PO flower
 'I doubt that the boys brought a flower.' ~> I think no boy brought a flower.

For the non-homogeneous pattern, an explicit universal quantifier is needed:

- (12) Ja ne dumaju / somnevajus', čto každyj mal'čik prinës po cvetku.
 I not think / doubt that every boy brought PO flower
 'I doubt that every boy brought a flower.' ~> I think at least one didn't bring a flower.

Another hallmark of homogeneity is the fact that undefined sentences are most naturally rejected not with *no*, but with some other, more hesitant-sounding expression. In English, this function is served by *well*, and a similar device exists in Russian, which is employed also in the presence of *po*.

- (13) Context: *The girls went to a café. All of them except Mary had cake.*
 A: The girls had cake at the cafe. V kafe devuški s''eli po pirožnomu.
 B: Well, Mary didn't. Nu počemu že, Maša ne ela.
 B': ??No, Mary didn't. ??Net, Maša ne ela.

Only when homogeneity is removed by an overt (in this case, adverbial) quantifier is rejection with *no* fully natural:

- (14) A: The girls all had cake. Devuški každaja s''eli po pirožnomu.
 B: No, Mary didn't. Net, Maša ne ela.

3. Distributivity in Russian

Taken on its own, the fact that *po* does not remove homogeneity, unlike dependent indefinites in other languages, suggests that it is, indeed, simply a marker of low scope with respect to a silent distributivity operator. Such an analysis, however, faces the obstacle that the silent distributivity operator does not, in fact, seem to exist in Russian (Pereltsvaig 2008). Unlike its English counterpart, (15) has no reading on which the book is allowed to vary by boy.

- (15) Mal'čiki pročitali knigu.
 boys read book
 'The boys read a book.'

Furthermore, Russian has a class of indefinite determiners which have been argued to mark low scope with respect to a quantifier (Yanovich 2005, Pereltsvaig 2008). These so-called *nibud'*-indefinites cannot appear with a definite plural without an overt distributor *each*, which would be inexplicable if a silent distributivity operator were available.

- (16) Mal'čiki *(každyj) pročitali kakuju-nibud' knigu.
 boys each read which-NIBUD' book
 'The boys each read some book.'

One might think that silent distributivity in Russian, is, in one way or another, blocked by the explicitly distributive alternative with *po*. This, however, can be shown not to be the case. Prepositional phrases with *po* cannot be used in object positions other than those that would normally be occupied by a direct accusative object; they cannot, for example, appear in the position of a dative complement of the verb. If some kind of blocking were at play, silent distributivity with respect to a dative argument should then be available, since *po* cannot be used here, but this is not the case. (17) never allows each girl to have helped a different boy.

- (17) Devočki pomogli (*po) mal'čiku.
 girls helped PO boy.DAT
 'The girls helped a boy.'

This leaves two possibilities. Either Russian does have a silent distributivity operator, but its appearance is somehow syntactically dependent on *po* so that it can never appear without it; or else Russian does not have silent distributivity at all and *po* has quantificational force, but unlike other dependency markers, it keeps homogeneity (in the same way that the silent distributivity operator, which of course also has quantificational force in that it quantifies over atomic individuals, does).

An argument from Kuhn (to appear) points in the direction of the second possibility. Kuhn discusses the following Hungarian sentence:

- (18) A diákok két előételt és egy-egy főételt rendeltek.
 the students two appetiser and one-one main.dish ordered
 ‘The students ordered two appetisers (together) and one main dish (each).’

(18) conveys that the students collectively, for the whole table, ordered two appetisers, and that in addition each of them ordered one main dish. Kuhn points out that if a silent distributivity operator were present at the VP level to distribute the predicate over the plurality of students, then no reading could be obtained on which only two appetisers were ordered collectively.⁷ Instead, both the two appetisers and the main dish would be interpreted in the scope of distributivity and could vary by boy. Since there cannot be silent distributivity here, the argument goes, the dependent indefinite must be contributing its own quantificational force (which does not also capture the regular indefinite it is conjoined with). The same argument can be made for Russian *po* as well:

- (19) Mal’čiki zakazali dve kolbaski i po bokalu vina.
 boys ordered two sausages and PO glass wine
 ‘The boys ordered two sausages (together) and one glass of wine (each).’

Together, these arguments indicate that Russian *po* should be analysed as having its own quantificational force in a way similar to the distributivity operator that keeps the homogeneity of plural predication. However, this needs to be implemented in such a way that its quantificational force is without global effect in the presence of an overt universal quantifier, as such quantifiers are compatible with *po* and succeed in removing homogeneity even in its presence (cf. (10) above). Further technical developments to introduce trivalence into a system derived from Plural DRT (Brasoveanu 2006) / Dynamic Plural Logic (Nouwen 2003) or related frameworks (such as Dotlačil’s (2011) version of team logic) may lead to a solution to this problem.

4. Independent dependency

Perhaps the most puzzling property of Russian *po* is its ability to appear, under certain unclear pragmatic circumstances, when there is no plurality anywhere in sight to distribute over. One such case is (20), uttered with a single addressee.

- (20) Skažu po bol’šomu sekretu.
 say.FUT. 1SG PO big secret
 ‘I’ll tell you a big secret.’

⁷Letting the indefinite *two appetisers* take wide scope over the distributivity operator would merely result in a nonsensical reading on which every student ordered the same token-identical two appetisers.

If the addressee of (20) were a plurality of individuals, the presence of singular *po* might be expected as an indication that the speaker is going to tell a big secret to each of the multiple addressees. In the absence of this condition, with a singular addressee, the appearance of *po* is mystifying.⁸

The same can be observed with the *po*-numeral construction. (21) can be uttered by a speaker who has just asked about one and the same thing five times in a row. In this case, there is not even an implicit plurality of events, subjects matters, or times such that five askings happened with respect to each member of this plurality; there are only five askings in total.

- (21) Ty ne serdišsja, čto po pjat' raz sprašivaju?
 you.SG not be.angry.PRES.2SG that PO five times ask.PRES.1SG
 'You're not cross with me for asking five times?'

It is entirely unclear at this point how to account for these apparently vacuous uses of Russian *po* when analogous sentences with dependency markers in other languages are infelicitous in the same situations.

5. Conclusion

In this note, I discussed some peculiar properties of the Russian dependency-marker *po*, which indicates covariation of the witnesses of the marked indefinite with the members of some plurality. Unlike similar such markers in English and Hungarian, it does not remove the homogeneity-based trivalence of plural predication. Nevertheless, it is not simply a marker of low scope with respect to a silent distributivity operator (which is also homogeneous) or a quantifier, since silent distributivity does not seem to be available in Russian. An analysis of *po* which ascribes quantificational force to it, but also captures its trivalence and explains its ability to co-occur with overt universal quantifiers seems to necessitate further technical developments in the realm of dynamic logics designed to deal with pluralities and dependencies in witness choice. Whether such an analysis will eventually be able to shed light also on certain mysterious uses of *po* where no dependency seems to be present, will remain to be seen.

Along the road, we also found a new argument for Kuhn's (to appear) claim that Hungarian-style dependent indefinites must be analysed as carrying their own quantificational force, based on their ability to remove trivalence.

⁸Note that the addition of an overt singular dative argument, who is told the secret, does not change anything. (i) is likewise felicitous.

- (i) Skažu Maše po bol'šomu sekretu.
 say.FUT.1SG Mary.DAT PO big secret
 'I'll tell Mary a big secret.'

References

- Balusu, Rahul. 2006. Distributive reduplication in Telugu. In *NELS 36: Proceedings of the Thirty-sixth Annual Meeting of the North East Linguistic Society*, ed. Christopher Davis, Amy Rose Deal, & Youri Zabbal, 39–52. Amherst, MA: GLSA.
- Brasoveanu, Adrian. 2006. Structured nominal and modal reference. Doctoral dissertation, Rutgers University.
- Brasoveanu, Adrian, & Donka Farkas. 2011. How indefinites choose their scope. *Linguistics and Philosophy* 34:1–55.
- Cable, Seth. 2014. Distributive numerals and distance distributivity in Tlingit (and beyond). *Language* 90:562–606.
- Dotlačil, Jakub. 2011. Fastidious distributivity. In *Proceedings of SALT 21*, ed. Neil Ashton, Anca Chereches, & David Lutz, 313–332.
- Gajewski, Jon. 2005. Neg-raising: Polarity and Presupposition. Doctoral dissertation, MIT.
- Henderson, Robert. 2014. Dependent indefinites and their post-suppositions. *Semantics & Pragmatics* 7:1–58.
- Križ, Manuel. 2015. Aspects of homogeneity in the semantics of natural language. Doctoral dissertation, University of Vienna.
- Kuhn, Jeremy. to appear. Dependent indefinites: The view from sign language. *Journal of Semantics*.
- Kuznetsova, Julia. 2005. Against the Russian distributive *po*-construction as a diagnostic for unaccusativity. In *Formal Approaches to Slavic Linguistics 13*, 170–180. Ann Arbor, MI: Michigan Slavic Publications.
- Löbner, Sebastian. 2000. Polarity in natural language: predication, quantification and negation in particular and characterizing sentences. *Linguistics and Philosophy* 23:213–308.
- Nouwen, Rick. 2003. Plural pronominal anaphora in context: Dynamic aspects of quantification. Doctoral dissertation, Utrecht University.
- Pereltsvaig, Asya. 2008. Russian *nibud'*-series as markers of co-variation. In *Proceedings of WCCFL 27*, 370–378.
- Pesetsky, David. 2013. *Russian case morphology and the syntactic categories*. Cambridge, MA: MIT Press.
- Schwarzschild, Roger. 1994. Plurals, presuppositions and the sources of distributivity. *Natural Language Semantics* 2:201–248.
- Yanovich, Igor. 2005. Choice-functional series of indefinites and Hamblin semantics. In *Proceedings of SALT 15*, ed. Efthymia Georgala & Jonathan Howell, 309–326.

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