A Unified semantics for variable incremental *ešče* in Russian

Lena Miashkur

SYNOPSIS This paper investigates the semantics of the Russian incremental particle *ešče*. In different contexts this particle behaves similarly to either incremental *more* or additives *also, too* (ADDs), but it is actually distributionally and interpretationally more flexible than both. Given this data, we attempt to develop an entry that captures all the uses of incremental *ešče* in a unified way.

INTRODUCTION English *more* has been usually analyzed as a comparative marker (*more*$_{comp}$), but more recently was shown to have an 'incremental' reading too (*more*$_{incr}$) (Greenberg 2009, Greenberg 2010, Thomas 2010, 2011, 2018) when it occurs with a nominal argument as in (1), or with an adverbial, as in (2):

1. *Yesterday I interviewed 3 students, today I interviewed 3 more students.* (cf. *3 students too*)
2. *Yesterday I ran for 2 minutes/km/times, today I ran for 3 more minutes/km/times.*

More$_{incr}$ has been shown to obey the following constraints: **CST1. non-overlap.** The elements that *more*$_{incr}$ applies to in the prejacent *p* and in the antecedent *q* must be non-overlapping, e.g. in (1) the students interviewed yesterday and today must be different students. **CST2. Nominal identity.** The nominal argument that *more*$_{incr}$ occurs with must be the same in *p* and *q*, as in (3):

3. *I bought 3 carrots this morning. Later on, I bought 3 more*$_{incr}$ *carrots/#apples.* (cf. *apples too*)

CST3. temporal order. *More*$_{incr}$ is odd when the eventuality in *p* is not later than the one in *q*:

4. *Today I interviewed 3 students. Yesterday I interviewed 3 #more*$_{incr}$ *students.* (cf. *students too*)

RUSSIAN DATA *More*$_{incr}$ is translated into Russian as *ešce*[1] (we will call this *more*$_{incr}$-like *ešce*):

5. *Včera ja probežala 3 km, segodnja ja probežala ešče 3 km.*
   Yesterday I run-$_{1PS\text{-}SG\text{-}PST}$ 3 km, today I run-$_{1PS\text{-}SG\text{-}PST}$ ešče 3 km
   Yesterday I ran 3 km, today I ran 3 more$_{incr}$ kilometers.
6. *Včera ja govorila s 3 studentami, segodnja ja govorila ešče s 3 studentami.*
   Yesterday I speak-$_{1PS\text{-}SG\text{-}PST}$ with 3 students, today I speak-$_{1PS\text{-}SG\text{-}PST}$ ešče with 3 students
   Yesterday I spoke with 3 students, today I spoke with 3 more$_{incr}$ students.

In the full paper we show that *more*$_{incr}$-like *ešce* also obeys the same constraints as *more*$_{incr}$. However, in fact *ešče* is both distributionally and semantically more flexible than English *more*$_{incr}$. Distributionally, it need not appear before a degree-expression (as in (5-6)), but can also occur sentence initially, finally, or before the verb. Interpretationally, in such cases it is similar to English ADDs like *also/in addition* (ADD-like *ešce* henceforth) (7):

7. *Poezd ne priehal, ešče dozd pošel.*
   Train neg arrive-$_{3PS\text{-}SG\text{-}PST}$, ešče rain go-$_{3PS\text{-}SG\text{-}PST}$
   The train never arrived, also/in addition it started to rain.

Indeed, ADD-like *ešče* does not obey constraints 1-3. This can be illustrated by the contrast between (8) with ADD-like *ešce* and (6) with *more*$_{incr}$-like *ešce*, where only (8), but not (6) can be continued with 'one of the students came to speak to me again' (Cst. 1, 'non-overlap'). The felicity of ADD-like *ešče* in (9), which violates 'nominal identity' and 'temporal order' constraints, demonstrates that with ADD-like *ešče q* can have no nominal element found also in *p* (Cstr. 2) and temporally occur later than *p* (Cstr. 3):

---

[1] As in other languages (e.g. German *noch*) the incremental *ešče* also has a *still*-like temporal reading (Umbach 2012, Thomas 2018)

8. *Včera ja govorila s 3 studentami, ešče segodnja ja govorila s*
   Yesterday I speak-1PS-SG-PST with 3 students, ešče today I speak-1PS-SG-PST with
   3 *studentami*
   3 students
   Yesterday I spoke with 3 students, today I also spoke with 3 students.
9. *Ja kupil 3 jabloka segodnja utrom. Do togo ja ešče kupil morkovi.*
   I buy-1PS-SG-PST 3 apples today morning. Before that I ešče buy-1PS-SG-PST carrots
   I bought 3 apples this morning. Before that I bought carrots too.

GOAL In this paper we will explore what properties of *ešče* set it apart from *more*$_{incr}$ on the one hand and ADDs on the other and attempt to provide a unified entry for *more*$_{incr}$-like uses of *ešče*.

Use 1. more*$_{incr}$-like *ešče Since this use shows the same meaning and semantic properties as *more*$_{incr}$, we provide it with the same lexical entry as *more*$_{incr}$ per Greenberg 2009, 2010, 2012, Thomas 2010, 2011, 2018, where it was defined as operating with derived summing measure function on eventualities and has a simplified entry as in (10) (c.f. Thomas 2010 with reference also to Greenberg 2009, 2010):

10. $\lambda d.\ \lambda e^*.\lambda\mu\langle d,\langle v,t\rangle\rangle.\lambda e:\ \exists d^*\ [\mu(e^*) = d^*.\ \mu(e) = d \wedge \mu(e \oplus e^*) = d+d^*$

In prose, *more*$_{incr}$ presupposes the existence of a salient eventuality, e* whose measurement along a scale is the degree d*. It asserts (a) that the measurement of the asserted eventuality, e, along the same scale is d, and (b) that the measurement of the summed eventuality e+e* equals the sum of the measurements of each of the sub-eventualities, i.e., equals d+d*. In the full paper we show how such an entry can account for the constraints on *more*$_{incr}$ and on *more*$_{incr}$-like *ešče*.

Use 2: ADD-like ešče as in (7-9) is similar to ADDs, however, there exists a difference between them wrt. to the co-orientation of the propositions *p* and *q*. To briefly introduce the notion, following (Merin 1999, van Rooy 2003, Winterstein 2009), pieces of information can positively or negatively affect the probability of an argumentative goal (H). E.g. in context where one considers hiring Charles, propositions 'He is smart' and 'He is lazy' would have opposite effect (one positive and the other negative), whereas 'He is smart' and 'He has excellent grades' are co-oriented (positive in this case). Winterstein 2009 suggests ADDs can only occur with co-oriented *p* and *q* (as in 11). We make an observation that *ešče* can also occur with non co-oriented (opposed) propositions as in (12):

11. **co-oriented:**
Čarl'z očen' umnyj, ešče u nego otličnye ocenki.
Charles very smart, ešče at him excellent grades
Charles is very smart. Also he has excellent grades.

12. **opposed:**
Čarl'z očen' umnyj, ešče on lenivyj.
Charles very smart, ešče he lazy
Charles is very smart. Next, he is lazy.

PROPOSAL We suggest that both *more*$_{incr}$-like *ešče* and ADD-like *ešče* have the same core INCR semantics as *more*$_{incr}$ and attribute the difference between them to the **type of scales** they can operate over. In particular, both *ešče* and *more*$_{incr}$ can express degree addition along scales that measure (μ) temporal, spatial expanse, cardinality of events or individuals in eventualities in *p* and *q* (*more*$_{incr}$-like *ešče*; c.f. Greenberg 2009). However, *ešče* is more flexible than *more*$_{incr}$ and can also operate over degrees obtained by measuring the whole propositions *p* and *q* (ADD-like *ešče*). One mechanism that can supply a measurement of propositions and provide *ešče* with degrees to operate over, is **expected utility towards resolving a decision problem (EU)** as in van Rooy 2003, which are calculated by subtracting the utility of the action in the decision problem that the agent chooses to take before learning *p*, from the utility of this action after learning *p*.

Following this idea we propose to capture the two uses of incremental *ešče* in (13), where d2 is not an argument of *ešče*, but is existentially closed, and can be either supplied by a measure expression (as in *more*$_{incr}$-like *ešče*) or by a covert degree measuring **EU** of propositions (as in ADD-like *ešče*), where $\boldsymbol{\sigma}$ is a variable for either eventualities or propositions.

13. *ešče* (both patterns) -

$\lambda\boldsymbol{\sigma}^*.\lambda\mu.\ \lambda\boldsymbol{\sigma}$: $\exists$d1 [$\mu(\boldsymbol{\sigma}^*)$ = d1. $\exists$d2 $\mu(\boldsymbol{\sigma})$ = d2 $\wedge$ **$\mu(\ \sigma \oplus \sigma\ ^*) = d1+d2$**

Two potential implications of this study are (A): Supporting the view that certain natural language expressions are sensitive to the argumentative load carried by the propositions that they operate over (c.f. *almost* Ansombre and Ducrot 1983, *too, but* Winterstein 2009, 2012). **(B)** Connecting between degree-based theories of incrementals, e.g. of $more_{incr}$ in English, and discourse-based theories of e.g. incremental *noch* in German (Eckardt 2007, Umbach 2009, 2012, Grubic 2018, Grubic & Wierzba 2019). Our application of the degree-based analysis of incrementals to discourse-related uses of Russian *ešče* helps unifying the two approaches.

REFERENCES

1. Anscombre, J.-C. & Ducrot, O. 1983. L'argumentation dans la langue. Liège, Bruxelles: Pierre Mardaga. **2.** Eckardt, R.. 2007. 'Was noch?' Navigating in question answer discourse. In Andreas Spath (ed.), *Interfaces and interface conditions*, 78–95. Berlin: De Gruyter. **3.** Greenberg Y. 2009 "Additivity in the Domain of Eventualities". In the *Proceedings of LoLa 10*. **4.** Greenberg, Y. 2010. "Additivity in the domain of eventualities (or: Oliver Twist's more)". In *Proceedings of Sinn und Bedeutung 14*. 151–167. **5.** Greenberg, Y. 2012 "Event-based Additivity in English and in Modern Hebrew". In *Verbal Plurality and Distributivity*, p. 127-158. **6.** Grubic, M. 2018. "Two strategies of reopening QUDs – evidence from German *auch* & *noch*". In *Proceedings of SuB 21. 517–534.* **7.** Grubic, M. & M. Wierzba. 2019. "Presupposition accommodation of the German additive particle *auch* (= "*too*")". *Frontiers in Communication* 4. 15. **8.** Merin, A. 1999. "Information, relevance, and social decision making: some principles and results of Decision-Theoretic Semantics", In: *Logic, Language, and Computation*. Vol. 2, CSLI, Stanford. **9.** van Rooy, R. 2003. "Questioning to resolve decision problems". *Linguistics and Philosophy*, 26(6), 727-763. **10.** Thomas, G. 2010. "Incremental 'more'". In *Proceedings of the 20th Semantic and Linguistic Theory Conference*. 233–50. **11.** Thomas, G. 2011. "Incremental 'more'". In *Empirical Issues in Syntax and Semantics* 8, 487–510. **12.** Thomas, G. 2018. "Underspecification in Degree Operators", *Journal of Semantics* 35, 1, 43–93. **13.** Umbach, C. 2009. 'Comparatives combined with additive particles: The case of German 'noch''. In Proceedings of Sinn und Bedeutung 13,543–58. **14.** Umbach, C. 2012. 'Strategies of additivity: German additive '*noch'* compared to '*auch''*. Lingua 122: 1843–63. **15.** Winterstein, G. 2009. "The meaning of 'too': Presupposition, argumentation and optionality". In *Logic, Language, and Computation.* TbiLLC 2009, Heidelberg. **16.** Winterstein, G., 2010 "Linking argumentativity and information structure in adversatives". In *Proceedings of Sinn und Bedeutnug 14*. **17.** Winterstein, G., 2012 "What *but*-sentences argue for: a modern argumentative analysis of *but". Lingua* 122 (15), 1864-1885.