Contextual constraints on incremental *more*: Some more (!) pieces of the puzzle

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1. Introduction: Incremental *more* (*more*$_{incr}$) was compared in the literature to additives (*too*) and to comparatives (*more*$_{comp}$), but so far not to pronominal *other*. In this talk I point out similarities between the truth conditions of *more*$_{incr}$ and *other*, as well as a difference between them. I argue that the difference can be derived from the presence of an independently-observed and apparently-unrelated contextual constraint on *more*$_{incr}$, and discuss the status and nature of this contextual constraint.

2. Comparing pronominal *other* and and *more*$_{incr}$:

2.1 Similarities: We start by noting that in (1) both *more*$_{incr}$ and *other* lead to the inferences in (2), unlike *too* (*I spoke with 3 students too in the evening*):

(1) I spoke with 3 students in the morning and with 3 (other)/(more$_{incr}$*) students in the evening.*

(2)a.The morning and evening students spoken with don't overlap b. I spoke with 6 students

This observation can be straightforwardly derived from existing claims about semantics of *other* and of *more*$_{incr}$ in the literature. Consider first the entry for *other* in (3) ([8],[13]):

(3) $[[\text{other }]]^g = \lambda y^* \lambda P.\lambda x: P(y^*).\ P(x) \wedge \neg y^* \otimes x$ (where y* is a salient individual in the context)

Inference (2a) directly follows from $\neg y^* \otimes x$, i.e. nonoverlap of the salient y* and x (morning and evening students). This entails (2b): The cardinality of the set of students is 3+3=6.

Similarly, consider the entry of *more*$_{incr}$ in (4) (from [12], cf. [6]): Given it, *more*$_{incr}$ involves an additive measure function over eventualities, μ, along a scale s which measures the spatial path of the eventuality (*I ran 3 more kilometers*), its run time (*I ran for 30 more minutes)*, its number of theme participants (as in *I spoke with 3 more students*), etc.. It presupposes that the degree of a salient eventuality, e* along s is d* and asserts that (i) the degree of e, along s is d and, that (ii) the degree of their sum, e*$\oplus$e, is d*+d. (see [12] for compositional derivations):

(4) $[[\text{more}_{\text{incr}}]]^g = \lambda d_d.\ \lambda e_v^*.\lambda\mu_{<d,<v,t>>}.\lambda e_v\colon \exists d^*\ [\mu_s(e^*) = d^*.\ \mu_s(e) = d \wedge \mu_s(e^* \oplus e) = d^*+d$

Thus, inference (2b) in (1) follows from $\mu_S(e \oplus e^*)=d+d^*$, through the measurement of the individual themes of the asserted and presupposed eventualities, ending up with 3+3=6 students. This also entails non-overlap of the students I spoke with, i.e. (2a).

2.2 A difference: An observation we now make is that unlike (1),the felicity of *other* and *more*$_{incr}$ differ in (5):

(5) *I ate 3 apples in the morning and 3 (#other) / 3 (more*$_{incr}$*) apples in the evening .*

Other's infelicity in (4) can be still derived from (3): Unlike (1), where without *other* the sets of morning and evening students spoken with may overlap, in (5) we get non-overlap even without *other*, because the two sets of apples eaten by me cannot possibly overlap. This 'contextual non-overlap' makes *other* redundant in (5). In the full paper we discuss ways to derive the resulting infelicity of *other* in such cases from, e.g. [5]'s vacuity constraint, [9]'s use of BREVITY, etc.

In contrast, the felicity of *more*$_{incr}$ in (5) is puzzling, since $\mu_S(e \oplus e^*)=d+d^*$ is trivially met in (5) too, i.e. there must be 6 eaten apples in the *more*$_{incr}$-less version as well.

3. The puzzle: The question we ask here, then, is which component(s) in the semantics of *more*$_{incr}$ make(s) it non-redundant in contextual non-overlap cases like (5), and hence felicitous (unlike *other*).

An intuitive answer is that, unlike *other*, *more*$_{incr}$ dictates 'addition' through $\mu_S(e \oplus e^*)=d+d^*$ Thus, in (5), the instruction is to calculate the total number of apples eaten by me today. Perhaps

this is what makes the presence of *more*$_{incr}$ non-redundant despite the contextual non-overlap, since without its presence the listener need not take the effort to calculate the total sum.

We observe, though, that *other* and *more*$_{incr}$ differ in felicity in cases like (6) as well:

(6) *I ate apples yesterday, and some #other / more*$_{incr}$ *apples today.*

Crucially, then, *more*$_{incr}$ is felicitous with unspecified measurements too, where no additive calculation (e.g. of the number of apples eaten by me) is required. Thus, deriving its non-redundancy in (5) and (6) from the necessity to make such an additive calculation is problematic.

4. <u>Proposal:</u> <u>We propose instead</u> that what *more*$_{incr}$ contributes in (5)(6) concerns an apparently unrelated contextual constraint on it, observed in [6][12]. The constraint is illustrated by the fact that *more*$_{incr}$ is odd in (7a,b) (unlike *too*), but improves in contexts where, e.g. a rich man offers to donate money for poor kids for any birthday-cake baked in the world ((7a)), or where A and B are preparing an ad. about cat food, with several white cats which will appear there (7b)):

(7)a. *I baked 5 cakes for my son's birthday party. A woman I know in New York baked 5 (??more*$_{incr}$*) (cakes) for her son's birthday party)* (cf. baked 5 cakes too *for her son's party)*

b. A: (telling B about herself, on their first date): *I have 3 white cats at home.*

B: Amazing! I have 3 (??more$_{incr}$*) white cats! (cf. I have 3 white cats too!)*

Following ideas in [6] for capturing this constraint, we take *more*$_{incr}$ to require that the enlargement indicated by the increased degree measuring the eventuality, along the original scale, s, must correlate with a change along another salient scale s^*. This is seen in (8), inspired by [3]'s analysis of Comparative Correlatives (which explicitly encode such scales-correlations):

(8) $\forall w1,w2\ [w1Rw0 \wedge w2Rw0] \rightarrow [\ [\mu_s(e^*\oplus e)(w1) > \mu_s(e^*\oplus e)(w2)]$
$\rightarrow [\mu_{s^*}(e^*\oplus e)(w1) > \mu_{s^*}(e^*\oplus e)(w2) \vee \mu_{s^*}(e^*\oplus e)(w1) < \mu_{s^*}(e^*\oplus e)(w2)]\ ]$

Given (8), *more*$_{incr}$ requires that in all accessible worlds w1 where the degree of $e^*\oplus e$ the along s is higher than in w2, its degree along a salient scale s^* is higher than or is lower than in w2. Thus, *more*$_{incr}$ is odd in (7) because no scale s^*, correlated with the number of birthday cakes, or of white cats, is plausible. But it improves in contexts where such a scale is plausible (as in comparative correlatives like *The more cakes are baked for birthday parties, the more money we have for poor kids* / *The more white cats we have the faster we shoot the advertisement*, *etc.)* In the full paper we discuss whether the status of (8) is a presupposition (as proposed in [6]), a mandatory NAR (Neads A Reason) implicature, in the spirit of [9], or something else.

Turning back to the felicity of *more*$_{incr}$ in (5), we propose that while without *more*$_{incr}$ it just entails that I ate 6 apples, with *more*$_{incr}$ we get the additional inference that the increased number of eaten apples correlates with a change along another scale, measuring my sugar level, the number of apples left, etc. (as in *The more apples I eate the higher my sugar level is / the lower the number of apples we have*). This inference is what makes *more*$_{incr}$ in (5) non-redundant and hence felicitous. As a support note unlike *more*$_{inc}$, *other* is NOT subject to this constraint, as seen by its felicity in, e.g. (9) without any special context. So in (5) it is indeed redundant:

(9) I sang 5 birthday songs in my son's birthday party. A woman I know in New York sang 5 other / ??more$_{incr}$ *birthday songs in her son's birthday party.*

5. We discuss a competing explanation of the contextual constraint on *more*$_{incr}$, in [12]:

Since *more*$_{incr}$*'s* core operation is to measure summed eventualities, sentences with *more*$_{incr}$ are congruent with, and answer the degree QUDs "*How much / many…. <u>in total</u>*?. (7a,b) are odd, then, because "How many birthday cakes in total did you and the New-Yorker woman baked?" / "How many white cats do A and B have in total?" are not plausible QUDs in the default context.

An issue for this proposal, though, is our observation that answering explicit "in total" questions with unspecified measurements is odd, with or without *more*$_{incr}$ (e.g. *How many apples did you eat in total? - :#I ate apples in the morning and some (more*$_{incr}$*) apples in the evening) .* Thus, if sentences with *more*$_{incr}$ were always answering "in total" degree QUDs, they would be predicted to be always odd with unspecified measurements. But this, as seen in (6), is wrong. Moreover, to justify congruence with *How many in total?"* QUDs, the degree-phrase *more*$_{incr}$ combines with should focused. But at least in (6) it is not clear that this is really the case. In contrast, the felicity of *more*$_{incr}$ in (6) is compatible with requiring that the (unspecified) increase along the original scale correlates with an (unspecified) change along a salient correlated scale.

5. Wider significance: Besides *more*$_{incr}$, correlated scales or degree-questions were argued to play a role in the semantics of other constructions, with and without scalar material. Examples include *another+ measure phrases* [13], concessive *at least* [4], *even* [7], [14], WH-exclamatives [11,15], *only* [2], and hyperboles [10]. Time permitting we will discuss such observations, and the extent to which they can be eventually modeled in a unified way.

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