# Incremental *more* and event pluractionality in English.
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Additive or incremental uses of *more*, as in *Give me some more*, have been studied only recently, notably in Greenberg (2009a,b,c) [henceforth Gr 2009a,b,c] and Thomas (2009a,b) [henceforth Th 2009a,b]. This talk proposes a critical revision of the analysis of Th (2009b). The revised analysis accounts for the previously undocumented similarity between incremental *more* and event pluractionals in English as analysed by Beck and von Stechow (2007). It is shown that the analysis avoids a number of shortcomings of Gr (2009a,b,c) and Th (2009a,b).

**Data**. Incremental uses of *more* [henceforth $more_{inc}$] are illustrated in sentences (1) and (2):

(1) Five customers bought a laptop yesterday, and one more customer bought a computer this morning.

(2) Bob ran three miles yesterday and he ran two more miles today.

(3) # Bob didn't have any coffee, but/and he wants to have some more.

In their incremental reading but not in their comparative reading, (1) is true even if only one customer bought a computer this morning, and (2) is true even if Bob ran only two miles today. It can be said that $more_{inc}$ contributes an assertion that some degree associated with an eventuality increments a degree associated with a previous and presupposed eventuality of the same kind, without necessarily being superior to it. The existence of such a presupposition is evidenced by the unfelicity of (3). Gr (2009a,b,c) and Th(2009b) note that the asserted and presupposed eventualities need not be the same:

(4) It snowed a lot this morning, and it [rained]$_F$ some more in the afternoon. [Th 2009b]

Gr (2009a,b,c) and Th (2009a,b) also observe a number of restrictions on the use of nominal and verbal $more_{inc}$. Gr (2009a,b,c) suggests that $more_{inc}$ is incompatible with non additive measure functions, as temperature in (5). Gr (2009a,b,c) and Th (2009b) note that verbal $more_{inc}$ generally cannot occur with some stative predicates (cf. (6) and (7)) and cannot occur with achievements, cf. (8). Th (2009b) notes that although synthetic *more* on stative predicates actually resists an incremental reading (9), $more_{inc}$ is possible with states and achievements if it occurs inside an overt durational phrase as in (10) and (11):

(5) *Bob spilled three °C more water on the carpet. [Gr 2009c]

(6) ??Mary was sad some more. [Gr 2009b]

(7) The rope is two meters longer. [Comparative only]

(8) #I arrived at the station some more. [Gr 2009b]

(9) Bob was happy all day long yesterday and he was happier today. [Comparative only]

(10) Bob was happy all day long yesterday and he was happy for some more time today.

(11) I managed to get to the city in three hours, and it took me two more hours to arrive at the station.

Although it hasn't been noted previously, these restrictions on the use of $more_{inc}$ are very similar to the restrictions on the use of the event pluractionality construction *VP and VP* studied in Beck and von Stechow (2007), which is also incompatible with states and achievements:

(12) Sally ran and ran. [B and vS 2007].

(13) *Sally was sick and sick [B and vS 2007]

(14) *The rope was long and long.

(15) *The train arrived and arrived [B and vS 2007]

**Analysis**. We give $more_{inc}$ the following lexical entry in both its nominal and verbal uses:

(16) $[\![\text{more}_{inc}]\!]^g = \lambda C.\lambda d'.\lambda e'.\lambda d.\lambda D_{\langle d,\langle e,t\rangle\rangle}.\lambda e : \text{CUM}(D) \wedge \neg(e' \otimes e) \wedge \exists D' \in C\,[D'(d')(e')].D(d)(e)$

$more_{inc}$ combines with a VP denoting a relation between degrees and eventualities $D$. $more_{inc}$ is also focus sensitive: $C$ is a set of properties constrained by the focus semantic value of its VP argument. Lastly, $more_{inc}$ combines with a degree $d$. Once $more_{inc}$ has been applied to these arguments, it asserts that the relation $D$ holds of the eventuality $e$ and the degree $d$, and presupposes that $D$ is cumulative (cf 17) and that there is a relation $D'$ in $C$ (possibly $D$, possibly an alternative of $D$, thus accounting for the variation illustrated in (4)) that holds of a contextually salient (and freely introduced in the LF) pair of an event $e'$ and a degree $d'$, such that $e'$ does not overlap with $e$.

(17) $\text{CUM}(D) \leftrightarrow_{def} \exists d, e, d', e'\,(D(d)(e) \wedge D(d')(e') \wedge \neg(e \otimes e')) \wedge$
$\qquad\qquad\qquad \forall d, e, d', e'\,(D(d)(e) \wedge D(d')(e') \wedge \neg(e \otimes e')) \rightarrow (D(d + d')(e \oplus e'))$

Syntactically, nominal $more_{inc}$ originates inside a DP and QRs over the lower VP node (possibly to a position where it is adjoined to VP), leaving *in situ* a trace interpreted as a degree argument, identified with the cardinality of the NP measured by a silent MANY (Hackl 2001), cf. (18). Verbal $more_{inc}$ originates as an adjunct to the verb and QRs above the lower VP node, leaving *in situ* a trace interpreted as a degree that is taken as the first argument of a silent measure relation $\mu_{\langle d,\langle v,t\rangle\rangle}$ that then modifies the verb, measuring a parameter of the eventuality described by the verb (eg. its run time), cf. (19). In both cases the VP argument of QRed $more_{inc}$ is a relation of type $\langle d,\langle e,t\rangle\rangle$:

(18) [$_{VP}more_{inc}$ $\lambda$d [$_{VP}$ [$_{DP}$ d [MANY boys]] [$_V$ came]]]

(19) [$_{VP}more_{inc}$ $\lambda$d [$_{VP}$ John [$_{V'}$ [$_V$ ran ] [$\mu$ d] ]]]

**Consequences 1**. The cumulativity requirement (17) straightforwardly derives the impossibility of the occurrence of $more_{inc}$ with non additive measure functions by presupposition failure, cf. (5). If Bob spilled 3°C of water on the ground in $e$ and 5°C of water in $e'$ it doesn't follow that he spilled 8°C of water on the ground in $e \oplus e'$. Likewise, the impossibility of occurence of $more_{inc}$ in (6) is explained by presupposition failure if we assume that the only degree that $more_{inc}$ can measure is on the scale of intensity of the adjective: relations between states of happiness and degrees of happiness are not cumulative. It is also shown that, although measure functions such as *length* are additive, the relation between degrees and states that $more_{inc}$ would apply to in a stative predication such as (7) is actually not cumulative. The fact that $more_{inc}$ is allowed with adjectives when an overt durational measure phrase is available as in (10) also follows straightforwardly: relations between states of happiness and their duration are cumulative. The ungrammaticality of (8) follows for the same reason: the relation between singular events of arriving somewhere and duration of the arriving is not cumulative because the sum of two singular events of arriving cannot be a sin-

gular event of arriving (with a single culmination). The acceptability of (11) is due to the fact that the verbal measure phrase *it takes α time to* is interpreted as a property of states (spatio-temporal locations); in this case $more_{inc}$ takes as an argument relations between states and their durations, which are cumulative. The fact that durational measure phrases that are not verbal (and hence do not contribute an eventuality) do not allow $more_{inc}$ with achievements supports this hypothesis, cf. (20):

(20) #I managed to get to the city in three hours, and I arrived to the station in two more hours.

**Consequences 2**. In this analysis, the distribution of $more_{inc}$ and event pluractional AND are similar because of a common cumulativity requirement, as shown by the analysis of event pluractional AND that this talk advocates, revised from Beck and von Stechow (2007), cf.(21):

(21) $[\![\text{AND}]\!]^g = \lambda Cov.\lambda D.\lambda d.\lambda e : \text{PART}(Cov, e + d) \wedge \text{CUM}(D).\,^{**}[\lambda d'.\lambda e'.Cov(e') \wedge Cov(d') \wedge D(d')(e')](d)(e)$

AND combines with a cover *Cov*, a relation *D*, a degree *d* and an eventuality *e* and presupposes that *Cov* partitions *e* and *d* and that *D* is cumulative. If so, it returns the truth value true iff the pluralization of *D* with $^{**}$ holds of the elements of the cover of *e* and *d*. In this analysis, (13), (14) and (15) are ungrammatical for the same reason as (6), (7) and (8), namely due to a failure of the presupposition that the relation between eventuality and degree that $more_{inc}$ and AND take as an argument has to be cumulative. The difference between $more_{inc}$ and pluractional AND is then that AND only *asserts* that its relation argument holds of (elements in the cover of) its eventuality and degree arguments, whereas $more_{inc}$ both *asserts* that its relation argument holds of its eventuality and degree arguments, and *presupposes* that a similar relation holds of some salient pair of eventuality and degree.

**Advantages of the analysis**. This analysis is the first to put in evidence and to explain the similarity between $more_{inc}$ and event pluractional AND. It also accounts for exceptions to the incompatibility of verbal $more_{inc}$ with stative predicates and achievements (cf. (10) and (11)).

**Beck S. and Arnim von Stechow 2007** *Pluractional Adverbials* JOS 24: 215-254. **Greenbreg, Y. (2009a)** *Event Based additivity in English and Modern Hebrew*, Semantics Archive. **Greenbreg, Y. (2009b)** *Additivity in the domain of eventuality*, Proceedings of LOLA 10. **Greenbreg, Y. (2009c)** *Additivity in the domain of eventualities*, paper presented at Sinn und Bedeutung 14. **Hackl, M. (2001).** *Comparative Quantifiers*. MIT Dissertation. **Thomas, G. (2009a)** *Incremental comparatives and inherently evaluative 'many' in Mbyá* to appear in Proceedings of WSCLA 14. **Thomas, G. (2009b)** *Incremental comparison* To appear in proceedings of CSSP8.