

Introduction. There is an ongoing debate in the literature as to whether Superlative Modifiers SMs like *at least* and *at most* are to be treated as degree constructions (Hackl 2000, Nouwen 2010, Penka 2014) or focus sensitive operators (Krifka 1999, Beck 2010, Coppock & Brochagen 2013). By looking at the properties of sentences with focus and SMs in a variety of languages, this paper makes a case for the focus sensitive approach. **Claim.** I show that SMs are focusing elements (Krifka 1999) whose Association With Focus (AWF) is Conventional, C-AWF (Beaver & Clark 2008; B&C henceforth). **Background I.** Superlative expressions are evaluated relative to a comparison class. Depending on how this comparison class is set, the sentence may give rise to ambiguity: Only (1a) has a “relative” reading where *John bought a cake for Mary larger than any other person did*, whereas only (1b) can mean that *John bought a larger cake for Mary than for anyone else*. The “absolute” reading that *John bought the largest relevant cake* is still present in (1a)/(1b).

(1) a. [John]_F bought the largest cake for Mary b. John bought the largest cake for [Mary]_F
This ambiguity can be captured as follows (Sharvit & Stateva 2002, Pancheva & Tomaszewicz 2012): (i) the “relative” readings obtain by constraining the content of the comparison class C (in (2)) by the focus association condition $C \subseteq \cup C'$, where C' is the free domain variable of the focus operator “~” (Rooth 1992). (This exemplifies a situation where focus serves to pragmatically resolve the anaphoric dependency of a quantifiers’ domain on the same context set as the focus operator “~”; von Stechow 1994.) And (ii), the “absolute” readings arise when the $\llbracket -est \rrbracket$ ’s domain is resolved by the context. In B&C’s terms, this optionality bears the blueprint of Free Association With Focus (F-AWF).

(2) $\llbracket -est \rrbracket = \lambda C_{\langle et \rangle} \lambda D_{\langle d, et \rangle} \lambda x_e. \exists d [D(d)(x) \wedge \forall y [y \in C \wedge y \neq x \rightarrow \neg (D(d)(y))]]$ [from Heim 2000]

Background II. SMs also associate with focus: This is signaled by the fact that the implicatures that come with SMs covary with the phrase that bears greater prosodic prominence.

- (3) a. The chair {*at least/at most*} invited [the postdoc]_F to lunch
 $\leadsto$ the speaker does not know whether {someone else/someone} was invited to lunch
 b. The chair {*at least/at most*} invited the postdoc [to lunch]_F
 $\leadsto$ the speaker does not know whether the postdoc got invited to {something else/anything}

This is more evident in languages like Basque, where there is overt focus movement to a preverbal position (Irurtzun 2007): SMs only associate with elements that are left-adjacent to the verb, suggesting that what matters for interpreting SMs is not the syntactic position of the SM itself, but what phrase it associates with.

- (4) (gutxienez / gehienez) *Jon-ek* (gutxienez/gehienez) [*bi sagar*]_F *jan zituen* (gutxienez/gehienez)
at least at most JON-ERG two apple eat AUX.
‘Jon ate {at least/at most} [two apples]_F’

Proposal. SMs require phonological focus within their scope, and so focus association has to be lexically encoded (i.e., conventional), so that the domain variable of SMs cannot be contextually resolved (Rooth 1992; B&C). This makes SMs behave like *only* and unlike $\llbracket -est \rrbracket$, which patterns like quantificational adverbs (e.g., *always*) and shows F-AWF. SMs are interpreted as focusing adverbs that can combine with a variety of elements. Assume that for some constituent α of type $\langle \sigma, st \rangle$, where σ is any type, $\leq$ is a –possibly pragmatic– ordering of contextually salient alternatives, and $\llbracket \alpha \rrbracket^f$ is the set of focus alternatives of α :

- (5) a. $\llbracket at\ least\ \alpha \rrbracket = \lambda \beta_{\langle \sigma \rangle} \lambda w_{\langle s \rangle} : \exists \gamma [\gamma \in \llbracket \alpha \rrbracket^f \wedge \alpha \leq \gamma \wedge \gamma(\beta)(w)]$
 b. $\llbracket at\ most\ \alpha \rrbracket = \lambda \beta_{\langle \sigma \rangle} \lambda w_{\langle s \rangle} : \forall \gamma [\gamma \in \llbracket \alpha \rrbracket^f \wedge \gamma(\beta)(w) \rightarrow \gamma \leq \alpha]$

The (simplified) lexical entries in (5) are interpreted compositionally in a Rooth-style analysis of focus (Rooth 1992, 1996), delivering an ordinary semantic value and a focus semantic value that consists of a set of alternatives (derivations shown in the paper). In what follows I present a number of arguments supporting that SMs are C-AWF. (Due to space constraints, sometimes I will only discuss *at least*, but the facts hold *mutatis mutandis* for *at most*.) **Argument I: No ambiguity** There is no such thing as an absolute reading of (3a)/(3b), meaning that the domain of SMs is restricted to elements in the set of focus alternatives, and cannot be pragmatically determined. **Argument II: Association with weak elements.** C-AWF expressions are sensitive to

prosodic prominence in their syntactic scope, and so they cannot associate with material lacking prosodic prominence (B&C). (7) shows that SMs can associate with prosodically independent pronouns like *them*, but not with their reduced forms, unlike quantificational adverbs and [–est]. Context: *You can see Mrs. Hudson, but do you see Sherlock and Watson?*

- (6) a. Context: *You can see Mrs. Hudson, but do you see Sherlock and Watson?*
 b. Well, I *always/most often/least often* { see'em / see [them]_F } F-AWF
 c. I can *only/at least/at most* { *see'em / see [them]_F }. C-AWF

Thus, some meanings cannot obtain when C-AWFs target a weak form. Context: *You discussed a lot with Sandy. Of all the times you talked with her, how often were Fred and Sue the people you talked about?*

- (7) a. I *always* discussed'em ~ *whenever I discussed someone with Sandy, I discussed Fred and Sue*
 b. #I *only* discussed'em ~ *I only discussed Fred and Sue (and no one else) with Sandy*
 c. #I *at least* discussed'em ~ *I discussed Fred and Sue (and maybe somebody else) with Sandy*
 d. I discussed'em *the least* ~ *I discussed Fred and Sue less often than anybody else*

Argument III: Ellipsis. In English, the elision of a VP containing the associate of an SM results in ungrammaticality. This is not so in the case of Free AWF. Context: *At the ceremony, some soldiers salute, others fire a round in the air, some do both and others do nothing. What do Kim and Sandy do?*

- (8) a. Kim *always* [salutes]_F because Sandy always does
 ~ *Kim salutes at every ceremony because Sandy salutes at every ceremony*
 b. *Kim {i. *only* / ii. *at least*} [salutes]_F because Sandy {i. *only* / ii. *at least*} does
 i. ~ *Kim salutes and does nothing else at every ceremony because Sandy only ever salutes*
 ii. ~ *Kim salutes and maybe fires at every ceremony because Sandy salutes and maybe fires*

Moreover, even those cases that have been reported to be good for *only* show a contrast with SMs (B&C,p180):

- (9) a. I think Mary never feeds [bones]_F to Fido
 b. Whaddya mean? She might *only* have! c. *Whaddya mean? She might *at least* have!

Argument IV: Backwards association. Only a subset of the elements that are C-AWF (e.g., *even*) can associate with a phrase they do not c-command. SMs cannot either: they pattern with *only* in that they cannot associate with elements that are not to their left on the surface (Jackendoff 1972; Erlewine 2014).

- (10) a. [Bill]_F will *even* pass the exam.
 b. *[Bill]_F will {*only/at least/at most*} pass the exam.
 (11) a. [Mary]_F, Bill *even* met ___ at the party. ~ *Even Bill...*
 b. *[Mary]_F, Bill {*only/at least/at most*} met ___ at the party. ~ *MOD Bill...*

Argument V: Intervention effects. A focus operator occurring above an alternative generating element blocks its interpretation by higher operators (Beck 2006, a.m.o.). For SMs, the prediction is borne out in *wh*-in-situ languages like Hindi: A *wh*-phrase that stays in-situ cannot be c-commanded by a focussing element, but overtly moving the *wh*-element past the focus element dismantles the intervening configuration.

- (12) a. *{kam se kam / zyaadaa se zyaadaa} saakshii-ne kya chiiz khariid-ii? [Hindi]
 at least at most Sakshi-ERG what thing buy-PFV
 Intended: 'What did *at least* / *at most* Sakshi buy?'
 b. [kya chiz] {kam se kam / zyaadaa se zyaadaa} saakshii-ne ___ khariid-ii?
 c. hameshaa saakshii kya chiiz khariid-te hain?
 always Sakshi what thing buy-IMPV PRES
 'What does Sakshi always buy?'

Conclusions. I defend that SMs not only *may* but in fact *need* to Associate With Focus (C-AWF). Consequently, SMs are not to be treated as degree quantifiers (Hackl 2000 a.o.), but as elements whose focus sensitivity is lexically encoded and therefore fulfill a pragmatic task (Rooth 1992, B&C). Other superlative expressions ([–est]) *may* but *need not* Associate With Focus (F-AWF). If so, the facts presented above follow naturally. Moreover, this fits nicely with recent accounts of the implicatures of SM's (Coppock & Brochagen 2013; Mendia 2015). In the paper I provide evidence of SMs as C-AWF in a variety of unrelated languages.